



**ENSURE IAS**

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# *Monthly Current Affairs*



**ECONOMY**



**POLITY & GOVERNANCE**



**INTERNATIONAL RELATIONS**



**SECURITY**



**SCIENCE & TECHNOLOGY**



**ENVIRONMENT**



**SOCIAL ISSUES**



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**COMPREHENSIVE CURRENT AFFAIRS COVERAGE**



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# 1. POLITY AND GOVERNANCE

## 1.1 NARI SHAKTI VANDAN [CONSTITUTION (106TH AMENDMENT)] ACT, 2023

### Context

In September 2023, the Constitution (106th Amendment) Act, 2023, was passed by Parliament to grant one-third reservation to women in the Lok Sabha, State Assemblies, and the NCT of Delhi.

### Historical Background of Women's Reservation

Pre-Independence Period	Post-Independence Period
<ol style="list-style-type: none"> <li><b>National movement:</b> In 1931, three women's bodies wrote to the British Prime Minister requesting political reservation for women during the National Movement.</li> <li><b>Government of India Act, 1935:</b> The Act granted women separate electorates but did not allocate seats in the legislature, thereby promoting political participation for women.</li> <li><b>Constituent Assembly:</b> The debates addressed women's reservation, but it was rejected due to the belief that a democracy should ensure representation for all groups.</li> </ol>	<ol style="list-style-type: none"> <li><b>Committee of the Status of Women 1971:</b> The committee recommended the reservation of women in local bodies.</li> <li><b>The National Perspective Plan for Women in 1988:</b> The plan suggested the reservation of women in local bodies.</li> <li><b>Constitutional Amendments (1992):</b> The 73rd and 74th amendments to the Constitution mandates state governments to allocate one-third of seats for women in local bodies.</li> </ol>

### Background of the bill

The Constitution has been amended several times to allocate seats for women in Parliament and state legislative assemblies.

Bill	Key Provisions	Reason for lapse
<b>81st Amendment Bill, 1996</b>	to allocate at least 1/3 of the total number of seats in the House of the People and State Legislative Assemblies for women.	Dissolution of 11th Lok Sabha
<b>84th Amendment Bill, 1998</b>	The proposed enactment aims to grant 15-year reservation for women in Lok Sabha, SLAs, and the National Capital Territory of Delhi.	Dissolution of 12th Lok Sabha
<b>85th Amendment Bill, 1999</b>	to ensure women's reservation in legislative bodies.	Lack of consensus amongst the political parties
<b>108th Amendment Bill 2008</b>	to allocate 1/3rd of all seats in Lok Sabha and SLAs to women, with the allocation of these seats to be determined by Parliament's prescribed authority.	Dissolution of 15th Lok Sabha.
<b>128th Amendment Bill, 2023</b>	a 33% reservation for women in the Lok Sabha, SLAs, and the Legislative Assembly of the National Capital Territory of Delhi.	Both Lok Sabha and Rajya Sabha passed the bill



### Key changes between 2008 and 2023 Bills

	2008 bill	2023 bill
<b>Reservation in Lok Sabha</b>	One-third of Lok Sabha seats in each state/UT to be reserved for women	One-third of Lok Sabha seats for women across all Lok Sabha seats
<b>Rotation of Seats</b>	Reserved seats to be rotated after every general election to Parliament/legislative assembly	Reserved seats to be rotated after every delimitation exercise

### Key Features of the 2023 Act

#### 1. Reservation for Women in Lower House (Lok Sabha):

- The Bill introduced Article 330A to the constitution, incorporating provisions from Article 330, which grants seats to SCs/STs in the Lok Sabha.
- The Bill allows for the rotation of reserved seats for women to different states or Union Territories.
- The Bill aims to allocate one-third of the seats reserved for SCs/STs to women on a rotational basis.

#### 2. Reservation for Women in State Legislative Assemblies:

- The Bill introduces Article 332A, which mandates the reservation of seats for women in every state Legislative Assembly.
- One-third of the seats reserved for SCs and STs should be allocated to women.
- One-third of the seats allocated to women in direct elections to the Legislative Assemblies will also be reserved for them.

#### 3. Reservation for Women in NCT of Delhi (New clause in 239AA):

- The bill added a new clause Article 239AA(2)(b) that stipulates Reservation of 1/3rd seats for women in the Legislative Assembly of the National Capital Territory (NCT) of Delhi.
- Article 239AA of the constitution grants special status to the Union Territory of Delhi as the national capital in terms of administrative and legislative functioning.

#### 4. Commencement of Reservation (New article - 334A):

- The Bill incorporated Article 334 of the constitution, which mandates parliament to review reservation provisions after 70 years of laws' existence.
- The provisions of this act will take effect after delimitation and the first census taken after the commencement of this act.
- The bill introduced a 15-year sunset clause for the review of reservation provisions for women by parliament.
- Parliament can legally extend the reservation for women.

#### 5. Rotation of Seats:

- The Parliament may by law determine the periodic rotation of seats reserved for women after each subsequent delimitation.
- This act's provisions will not impact the representation in legislative assemblies and the Lok Sabha until their dissolution.

#### Status of Women Representation in India

1. India ranks 48th out of 146 in the Global Gender Gap Report 2022 for Political Empowerment, including women's representation in Parliament and Ministerial positions.
2. Currently, only 14.4% of the Indian Parliament's members are women, the highest number so far.
3. The 2019 Lok Sabha election saw nearly equal representation of women and men in voting, marking a significant milestone in India's political journey towards gender equality.

**Arguments in favor**

Argument	Significance
<b>Increase in political representation of women</b>	India ranks low in global women's political representation, trailing behind 140 other countries, according to the Inter-Parliamentary Union 2021 Report.
<b>The ability of women's leadership to bring change</b>	The study provides empirical evidence indicating that women leaders prioritize public goods that address women's concerns.
	Women legislators have been linked to enhanced economic outcomes and improved infrastructure development.
<b>A step towards decriminalization of politics</b>	Reserved seats can potentially decrease the presence of politicians with severe criminal cases.
	The Lok Sabha currently has 159 MPs facing serious criminal charges such as rape, murder, attempted murder, kidnapping, and crimes against women.
<b>More women vote share</b>	The political representation of women is consistently increasing, ensuring that their voting patterns are aligned with their overall voting patterns.
<b>Breaking patriarchy</b>	The policy advocates for gender equality in political leadership and decision-making.
<b>Gender-sensitization</b>	The text challenges conventional gender roles and perceptions of women's roles.
<b>Performance at local level</b>	Oxfam India's assessments show that local reservation for women has significantly increased crime reporting and improved access to basic amenities like drinking water and schools.
<b>Promoting Women-led development</b>	The implementation of this strategy can facilitate increased women's involvement in national and state-level policymaking.

**Arguments against the act**

Argument	Explanation
<b>Not a Homogeneous Group</b>	Women are not a homogenous community like caste groups, making comparisons with caste-based reservations inappropriate.
<b>Violation of the Equality Principle</b>	Critics argue that reserving seats for women contradicts the Constitution's equality guarantee, as it may be seen as a lack of merit-based competition.
<b>No Separate OBC Reservation</b>	The Bill does not offer separate reservations for OBC women, despite their significant proportion in the female population.
<b>Exclusion from Rajya Sabha and Legislative Councils</b>	The Bill does not provide reservation for women in the Rajya Sabha and legislative councils. The Geeta Mukherjee Committee (1996) recommended the inclusion of women in Rajya Sabha and Legislative Councils.
<b>Dependency on Census and Delimitation</b>	The implementation of women's reservation relies on the census and delimitation processes, which can be delayed or politically sensitive.
<b>Fear of Proxy Representation</b>	There are concerns that women may be used as proxies by male family members, similar to the situation in local governments.
<b>Restriction on Voters' Choice</b>	Some argue that reserving seats for women restricts voters' choices, suggesting alternatives like women's reservation within political parties.



<b>Less impact on political empowerment of women</b>	Larger electoral reform issues, such as criminalization of politics and internal democracy in political parties, may hinder the political empowerment of women.
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### Way forward

1. **Timely implementation:** The act's implementation should be ensured through timely conduct and publication of census data and delimitation exercise.
2. **Capacity building:** This involves involving civil society and other institutions in the local training and mentorship of women leaders to ensure their effective mobilization at state and national levels.
3. **Raise Awareness and Education:** To raise awareness about women's rights and the significance of political participation.
4. **Combat Gender-Based Violence:** Implement policies and legal measures to combat gender-based violence and harassment, thereby fostering a safer political environment for women.
5. **Electoral Reforms:** The proposed reforms include the implementation of electoral reforms such as proportional representation and preferential voting to increase the representation of women in the political process.
6. **Intra-Party Democracy:** To institutionalize intra-party democracy and promote more women candidates.
7. **Strengthen Women's Self-Help Groups:** To encourage women's involvement at the grassroots level to prepare them for higher office positions.
8. **Support Women's Agencies:** To enhance organizations that promote gender equality and women's empowerment.
9. **Engage Young Women:** To promote girls' involvement in student politics and political debates at colleges and universities.

#### Women's Representation in Other Countries

1. The Inter-Parliamentary Union Report for 2019 reveals Rwanda as the top nation in the assembly's long-term portrayal, followed by Cuba at 53.2%.
2. Nepal ranked 36th in South Asia with 32.7% portrayals, while India came in 149th with 14.4%, trailing Pakistan and Bangladesh.
3. Countries like France, Korea, and Nepal have implemented party line reservation, passing quotas as high as 50% of the candidate list.
4. Argentina, Mexico, and Costa Rica have party quota laws, ensuring over 36% female representation in their national legislatures.

### Conclusion

The reservation is expected to significantly enhance the nation's development, particularly for women, by tackling the underlying socioeconomic and political disparities.

#### PANEL OF VICE-CHAIRPERSONS (VCS)

1. Recently, the Rajya Sabha has for the first time in its history guaranteed **equal representation of women in the panel**.
2. The Rajya Sabha Chairman has formed **an all-women panel of VCs in the Rajya Sabha**.
3. The **Chairman of Rajya Sabha** is responsible for nominating a panel of VCs from among its members under the Rules of Rajya Sabha.
4. In the **absence of the Chairman or Deputy Chairman**, any one of them can preside the House.
5. If the **Chairman/Deputy Chairman's seat is vacant**, and they cannot preside over the house.
6. Therefore, they can **preside the house only in the absence** of the Chairman/Deputy Chairman.
7. The **President appoints a House member** to perform the Chairman/Deputy Chairman's duties.
8. The **individual holds the same powers as the Chairman** and serves in office until a new panel of VCs is nominated.

## 1.2 ONE NATION, ONE ELECTION

### Context

In September 2023, the government has established an **eight-member high-level committee** to assess the feasibility of the Simultaneous Concept. Former President **Ram Nath Kovind** has been designated as the committee's **chairman**.





### What is a Simultaneous Election?

1. The idea is to coordinate elections for the **Lok Sabha, State Assemblies, Municipalities and Panchayats**, ensuring that voters in a specific constituency cast their votes on the same day.
2. Simultaneous elections were practised until 1967 but became inconsistent due to **frequent dissolutions of Assemblies** and Lok Sabhas before their designated terms ended.
3. Currently, only a **few states** (Andhra Pradesh, Arunachal Pradesh, Odisha, and Sikkim) hold elections concurrently with the Lok Sabha polls.
4. Simultaneous elections do **not necessarily** require all elections in the country to occur on a **single day**.
5. The elections can be conducted in a **phased manner**, following the existing practice, as long as voters in a particular constituency vote for both the State Assembly and Lok Sabha on the same day.

### Timeline:

1. **1952-67:** Lok Sabha and state assembly general elections were held concurrently.
2. **1968-69:** The untimely dissolution of certain State Legislative Assemblies.
3. **1970:** The early dissolution of the Lok Sabha, resulted in a fresh election in 1971.
4. **1983:** The Election Commission of India (ECI) proposed exploring the idea of conducting simultaneous elections.

### Advocates for simultaneous elections cite several reasons:

1. **Governance Disruption:** Frequent imposition of the Model Code of Conduct disrupts developmental activities in states holding elections.
2. **Financial Strain:** Organizing elections involves substantial expenses for various stakeholders, with a formal expenditure of around ₹10,000 crores for the 2019 Lok Sabha elections.
3. **Security Deployment:** Frequent elections lead to extended deployments of security forces, including Central Armed Police Forces (CAPFs) and state police.
4. **Public Inconvenience:** Frequent elections disrupt daily life, causing traffic congestion and noise pollution due to political rallies.
5. **Social Division:** Frequent elections can exacerbate social divisions, contributing to issues like casteism, communalism, corruption, and crony capitalism.
6. **Short-term Focus:** Frequent elections may shift the focus of governance towards short-term populism, potentially hindering long-term policy-making.

### Challenges in Implementing Simultaneous Elections:

1. **Constitutional Feasibility:** Articles 83(2) and 172 mandate a five-year term for the Lok Sabha and State Assemblies. Aligning elections necessitates complex constitutional amendments, setting a significant precedent.
2. **Federalism vs. Union:** Simultaneous elections may conflict with India's federal structure, contradicting the "Union of States" concept.
3. **Value of Frequent Elections:** Existing periodic elections allow more frequent citizen participation, distinguishing national and State issues for greater accountability.
4. **EVM and VVPAT Demand:** Implementation would require around 30 lakh Electronic Voting Machines (EVMs) and Voter-Verified Paper Audit Trail (VVPAT) machines.
5. **Budgetary Implications:** Simultaneous elections involve substantial costs, estimated at Rs 9,284.15 crore for machine procurement and recurring replacement expenses.
6. **Voter Behavior Influence:** Critics argue that simultaneous elections might shift focus towards national issues even in State elections, favouring larger national parties over regional ones.
7. **Divergent Election Issues:** State and national elections address distinct issues, which could lead to voters prioritizing one set over the other.
8. **Political Accountability:** Frequent elections enhance political accountability, but simultaneous elections may reduce this while affecting grassroots job creation.

### Countries Conducting Simultaneous Elections:

1. **South Africa:** National and provincial elections every five years, followed by municipal elections.
2. **Sweden:** National, provincial, and municipal elections every four years.
3. **United Kingdom:** Fixed election dates every five years since May 7, 2015.
4. **Germany:** Proposes constructive no-confidence votes, but elections are not simultaneous.

**Suggestions for Simultaneous Elections:****1. Law Commission (170th Report, 1999):**

- Simultaneously hold elections for the Lok Sabha and State assemblies, with election results to be disclosed no later than six months after the assembly's term ends.

**2. Parliament Standing Committee (79th Report):**

- Implement a two-phase synchronized election system:
  - Hold elections for certain Legislative Assemblies midway through the Lok Sabha's term and the rest at the Lok Sabha's conclusion.
  - Conduct bye-elections for all vacant seats in a given year on a predetermined date or within a specified time frame.

**3. NITI Aayog (2017):**

- Adopt a two-phase simultaneous election system following the Parliamentary Standing Committee's recommendation.
- If premature dissolution occurs, the new House should serve the remainder of the original term.
- For 'no-confidence' motions, simultaneously propose a 'confidence motion' for an alternative government.
- Schedule two one-and-a-half-month windows to hold all bye-elections in a given year.

**4. Law Commission (Draft Report, 2018):**

- Adopt an election synchronization framework by aligning state and Lok Sabha elections, conducting elections biennially, and consolidating all annual elections.
- Replace 'no-confidence motions' with 'constructive votes of no-confidence' and potentially limit their frequency during a term to streamline elections and foster political stability.

**Conclusion:**

In conclusion, as India seeks a way to harmonize its electoral cycles, the words of Winston Churchill ring true, "To improve is to change; to be perfect is to change often." Embracing change in the form of synchronized elections can pave the way for a more efficient and stable democratic process.

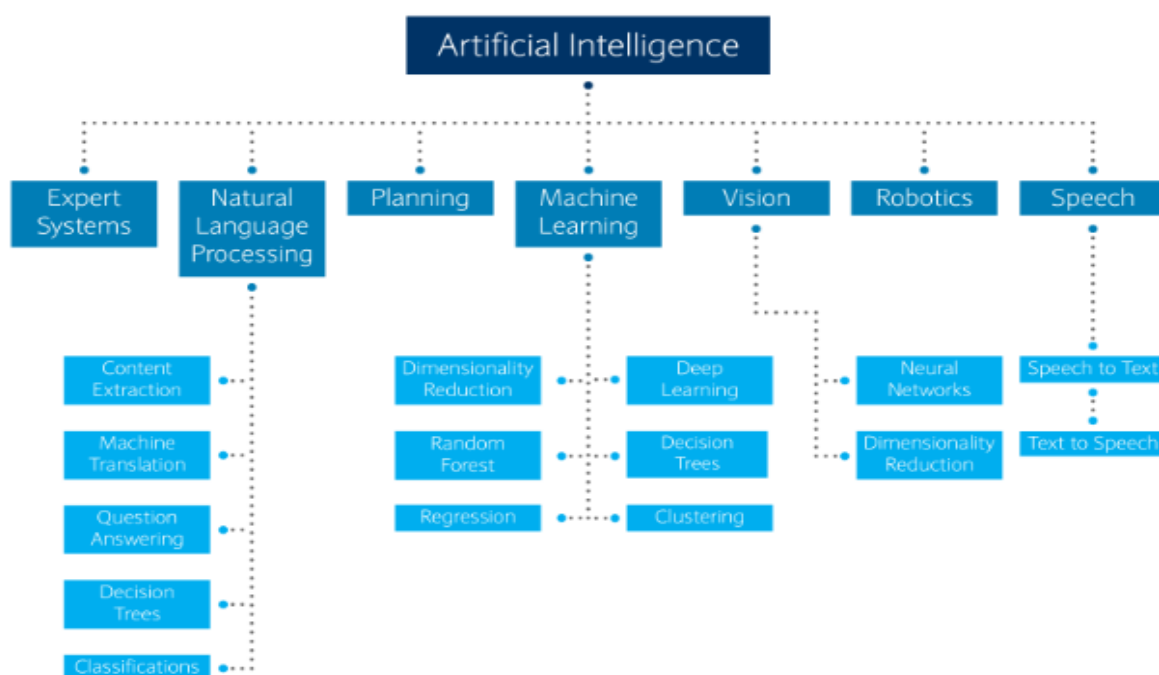
## 1.3 ARTIFICIAL INTELLIGENCE AND ELECTIONS

**Context**

Recently, For October 2023 Swiss federal elections Five political parties have signed a code of conduct agreeing to limit the use of artificial intelligence (AI) in their campaigns.

**Artificial Intelligence**

- **About:** This refers to the use of machines to perform tasks that have traditionally required human intelligence.
  - **Multiple Technologies involved:** This encompasses various technologies such as machine learning, pattern recognition, big data, neural networks, and self-algorithms.
  - **Complex Technology: AI involves complex tasks like analyzing data and adjusting its response to various situations, aiming to create self-learning patterns that answer unanswered questions like a human.**



### Role of AI in elections

- Prediction Models:** prediction models can be created using AI. This will aid in estimating the likelihood of a voter supporting a particular candidate.
  - A model can be built to identify voters who will vote for a particular candidate by considering demographics, voting patterns, and relevant issues.
- Social media Analytics:** AI can be utilized by parties to analyze trends and sentiment, enabling them to develop a social media outreach program tailored to the preferences of voters.
- Personalization:** AI can enhance voter engagement by tailoring communications to their interests, preferences, and traits, thereby enhancing candidates' ability to connect with their audience more deeply.
- Prompt Data Analytics:** It can help campaigns adapt their messaging and outreach methods to changing conditions by evaluating real-time data on social media trends, sentiment, and influencers.
- Efficiency Enhancement:** AI can monitor campaign performance, enabling campaigns to identify successful and unsuccessful strategies, enabling data-driven decision-making to optimize their activities.
- Participation Enhancement:** It offers opportunities for participative democracy through improved voter education and mobilization.

### Issues Associated with AI in Elections

- Privacy:** Privacy rights are at risk due to the potential for unauthorized access to online activity data without consent of user.
- Effectiveness of AI System:** The effectiveness and precision of AI systems in political campaigns are influenced by the accuracy and reliability of the algorithms and the quality and quantity of available data.
- Vulnerable Cyber security:** AI's use for voter data collection raises privacy and data protection concerns due to inadequate cyber security infrastructure, insufficient data storage devices, and increased cyber-attacks.
- Lack of control over AI:** The use of AI in elections is not subject to comprehensive regulation.
- Manipulation:** AI can be utilized for creating fake videos, spreading misinformation, and manipulating social media, potentially influencing voters and distorting the truth.
- Lack of trust in Electoral system:** AI tools can potentially undermine public trust in democratic institutions and elections through influence campaigns.

### Way forward

- Clear Regulatory Frameworks:** Governments should establish clear regulations for AI use in elections, covering data protection and campaign advertising.
- More teeth to Election Commission of India (ECI):** The ECI should enhance disclosure requirements for online communications to mitigate the risk of AI misuse in political campaigns.



3. **Innovation in surveillance:** The government should enhance innovation in detecting deep-fake voting disinformation campaigns and strengthen infrastructure to safeguard elections from cyberattacks fueled by language models and chatbots.
4. **Prompt Response:** The task involves monitoring and addressing emerging AI threats and challenges in elections, promptly responding to ensure the integrity of the electoral process.
5. **Intention for Optimal utilization:** The AI revolution offers significant opportunities for prosperity and growth, but it requires proper application and use to ensure its optimal use.

### Conclusion

Usage and Development of AI in various spheres should be in tune with the **UN charter for Ethical use of AI**. This would help in eradication of issues and concerns related to AI in long run.

## 1.4 PERSONALITY RIGHTS OF CELEBRITIES

### Context

In September 2023, the Delhi High Court recently granted Bollywood actor Anil Kapoor legal protection for his publicity and personality rights, including his distinctive way of saying 'Jhakaas'.

### What are Personality Rights?

1. Personality rights encompass an individual's right to safeguard their **personal traits** within the realms of **privacy and property**.
2. This becomes particularly crucial for public figures, as their identities, encompassing their names, images voices, can be easily exploited for **promotional purposes** by various businesses aiming to boost their sales.
3. Hence, it is vital for well-known personalities and celebrities to formally **establish legal safeguards** for their **personal characteristics**.

"Your name, your image, your voice – they are your own, and personality rights ensure they remain under your control."

### Personality Rights in India:

Although India lacks a dedicated statute for personality rights, they find their foundation in broader legal principles and provisions. Here is a concise overview:

1. **Right to Privacy:** The right to privacy, enshrined in Article 21 of the Indian Constitution, safeguards an individual's identity, personal information activities from unjust intrusion by government, private entities, or the public.
2. **Right to Publicity:** This component pertains to an individual's authority over the use of their name, image, or personal attributes for commercial purposes. It is enforced through laws like the **Trade Marks Act, 1999** the **Copyright Act, 1957**.
3. **Supreme Court's Recognition of Privacy:** In the landmark 2018 judgment of **Justice K.S. Puttaswamy (Retd.) v. Union of India**, the Supreme Court fortified the right to privacy as a fundamental right, significantly bolstering personality rights.
4. **Common Law Principles:** Common law principles offer redress for defamation, libel slander when an individual's reputation is harmed.

### Posthumous Personality Rights:

Posthumous personality rights refer to the legal protections granted to the reputation, names symbols associated with individuals after their death. In India, such rights are safeguarded through various legal provisions and acts:

1. **Emblems and Names (Prevention of Improper Use) Act, 1950:** This act prevents the unauthorized use of the names and symbols of specified dignitaries listed in its schedule.
2. **Indian Penal Code (IPC):** Defamation suits can be filed under the IPC if negative references or derogatory representations are made about deceased individuals or their families.
3. **Trademark Law:** It prohibits unjustified use of a deceased person's name and allows their family or estate to sue for its misuse.





### Key judicial interpretations in India regarding personality rights:

1. **Titan Industries v. Rajkumar Jewelers (2012):** The Delhi High Court affirmed that personality rights encompass protection from intrusion into private space, prevention of the disclosure of sensitive facts, avoidance of misrepresentation the right to prevent unjust enrichment through the use of one's name.
2. **Deepa Jayakumar v. AL Vijay (2019):** The Madras High Court clarified that personality rights do not persist after an individual's death and are not inheritable by their legal heirs.
3. **Sakshi Malik v. Venkateshwara Creations Pvt. Ltd. & Ors (2021):** The Bombay High Court declared that using another person's image, particularly a private one, without their consent is against the law.
4. **Arun Jaitley vs Network Solutions Private Limited and Ors (2011):** Delhi High Court emphasized that an individual's fame holds the same value online as in real life, underscoring the importance of protecting one's reputation on the internet.

### Enforcing personality rights in India faces several challenges:

1. **Constitutional Dilemma:** Striking a Balance Between Personality Rights, Media Freedom the Public's Right to Information Under Article 19.
2. **Lack of Specific Legislation:** India does not have a dedicated statute addressing personality rights. As a result, these rights are often inferred from a combination of constitutional and common law principles.
3. **Burden of Proof:** In cases of personality rights violations, the burden of proof often rests with the aggrieved party.
4. **Evolving Digital Landscape:** The internet and social media have created new challenges for enforcing personality rights. Unauthorized use of personal data, images information on the internet can be difficult to monitor and control.
5. **Inadequate Privacy Laws:** While the right to privacy is a fundamental right in India, the existing privacy laws may not be robust enough to address modern challenges, especially in the digital era where personal information is vulnerable to misuse.

### International Convention to protect Personality Rights:

1. **UDHR:** Article 12 of the Universal Declaration of Human Rights (UDHR) recognizes the right to privacy and protection of honor and reputation.
2. **Rome Convention (1961):** This convention offers protection for the rights of performers and phonogram producers broadcasting rights.
3. **Paris Convention:** The Paris Convention for the Protection of Industrial Property includes provisions related to the protection of an individual's image and reputation.
4. **WIPO Performances and Phonograms Treaty (WPPT):** This treaty safeguards the rights of performers and phonogram producers, with a particular focus on the digital environment.
5. **TRIPS Agreement:** The TRIPS Agreement, part of the World Trade Organization (WTO) agreements, contains provisions related to intellectual property rights, including elements of personality rights.

### Conclusion:

In India, personality rights are gaining recognition and protection, primarily through common law and the right to privacy. The legal landscape is evolving, with a growing emphasis on safeguarding personal image and identity.

## 1.5 PARLIAMENTARY SECRETARIAT

### Context

In September 2023, with the Parliament reaching its 75th anniversary, the Parliament Secretariat continues to be the guardian of the procedural, precedential legislative wisdom of both chambers.

### Responsibilities of the Secretariat include:

1. Providing advice to the presiding officers of both Parliamentary Houses.
2. Supplying vital information to assist Members of Parliament in their legislative roles.
3. Ensuring the smooth and continuous functioning of the legislature.
4. Compiling and distributing daily reports on parliamentary proceedings.
5. Overseeing the disbursement of salaries and various allowances.



6. Creating a range of publications.
7. Assisting numerous parliamentary committees.

### Constitutional Provisions Regarding Parliamentary Secretariats

1. **Article 98** mandates that each House of Parliament maintain its own separate secretarial staff, with the authority to regulate staff recruitment and service conditions. Additionally, this article permits the establishment of common positions that serve both Houses of Parliament.
2. **Article 187** provides similar provisions for State Legislatures.
3. In 1952, the Rajya Sabha (Council of States) and Lok Sabha (House of the People) were instituted. In 1954, the names of their respective Secretariats were modified to become the **Rajya Sabha Secretariat** and the **Lok Sabha Secretariat**.

### Organizational Structure of the Secretariats

#### Lok Sabha Secretariat

1. The **Speaker** of Lok Sabha has **ultimate authority** and control over the secretariat.
2. The **administrative head** of Lok Sabha Secretariat is the **Secretary General**.
3. Recruitment and employment conditions are governed by the **Lok Sabha Secretariat (Recruitment and Conditions of Service) Rules of 1955**, established by the President in consultation with the Speaker.
4. These rules define the secretariat's size and composition all appointments are made by the Speaker, who can delegate this authority to the Secretary-General or other Secretariat officials.

#### Rajya Sabha Secretariat

1. The **Chairman** of Rajya Sabha holds **administrative control** over the secretariat.
2. The **administrative head** of Rajya Sabha Secretariat is the **Secretary General**.
3. Recruitment and employment conditions are regulated by the **Rajya Sabha Secretariat (Recruitment and Conditions of Service) Rules of 1957**, established by the President in consultation with the Chairman, similar to the Lok Sabha Secretariat.
4. These rules determine the secretariat's size and composition the Chairman, like the Speaker in Lok Sabha, has the authority to make appointments and can delegate this power to the Secretary-General or other Secretariat officials.

#### Some Important Points:

1. Both parliamentary Secretariats are structured into **10 functional services**, including Legislative, Executive and Administrative verbatim reporting services.
2. The Speaker and Chairman possess the authority to establish **new positions** within their respective Secretariats, although **prior consultation** with the Union Ministry of Finance is mandatory for Class I or Class II positions.
3. The Secretaries-General of both houses hold a **rank equivalent to that of the Cabinet Secretary** to the Government of India.
4. Notably, in the table of precedence, the Cabinet Secretary holds the 11th position, while the Secretaries of Lok Sabha and Rajya Sabha are ranked at 23rd.

#### Limitations of the Parliament Secretariats include:

1. **Bureaucratic Constraints:** Parliament Secretariats often operate within bureaucratic structures, which can lead to delays and inefficiencies in responding to the rapidly changing political landscape.
2. **Absence of Legislative Framework:** There is no existing legislation, as per Article 98(2), to regulate the recruitment and terms of employment for the secretarial staff in either House of Parliament.
3. **Political Polarization:** In a polarized political environment, Parliament Secretariats may face challenges in maintaining impartiality and serving the diverse needs of all lawmakers.
4. **Lack of Autonomy:** Limited independence due to government control may impact impartiality.
5. **Lack of Independent Cadre:** A significant number of top positions are occupied by individuals nominated by the All-India Services, which can undermine the autonomy of the legislative branch.
6. **Bureaucratic Red Tape:** Bureaucratic procedures can lead to delays and inefficiencies in parliamentary processes

**Conclusion:**

Parliament Secretariats serve as the custodians of parliamentary wisdom, but their true value lies in their ability to adapt and evolve, transcending bureaucratic constraints and political divisions to effectively support the legislative process.

## 1.6 NEWS IN SHORTS

### 1.6.1 MIGRANTS FROM PAKISTAN AWARDED CITIZENSHIP

1. **Context:** On 12 September, 2023 Gujarat Government handed citizenship certificate to the 108 migrants from Pakistan.

2. **Key Points:**

a) A Ministry of Home Affairs Order, 2021 empowered the Collectors from certain districts in the States of **Gujarat, Chhattisgarh, Rajasthan, Haryana, and Punjab** for:-

- Registration of Citizen of India and grant certificate of naturalization under Section 5 and 6 of the Citizenship Act 1955 respectively.
- This is applicable in respect of any person belonging to the minority community in **Afghanistan, Bangladesh, and Pakistan**.

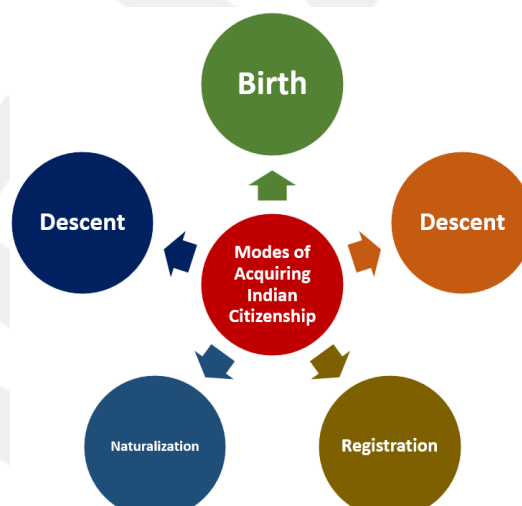
b) Citizenship by naturalization can be acquired by a foreigner (not an illegal immigrant)

- Who is ordinarily resident in India for 12 Years
  - Throughout the period of twelve months immediately preceding the date of application;
  - For 11 Years in the aggregate in the 14 Years preceding the twelve months.

c) **Other qualifications** as specified in the Third Schedule to the Citizenship Act, 1955.

3. **Constitutional provisions for citizenship (Part 2 of the Constitution):**

- a) **Articles 5, 6, 7 and 8**, detail provisions regarding who will be the citizens of India at the commencement of the Constitution.
- b) **Article 11** grants Parliament the authority to make any provision regarding the acquisition and termination of citizenship.



### 1.6.2 DISQUALIFICATION OF LAWMAKERS

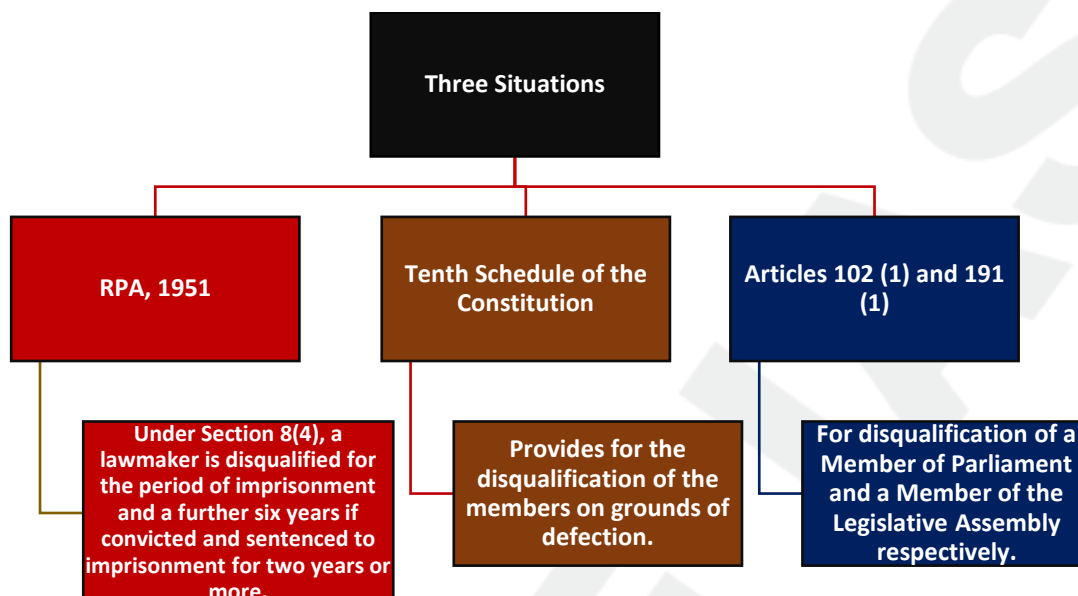
1. **Context:** In September, 2023 the High Court of Karnataka declared the election of a member of Lok Sabha from Hassan constituency as void

2. The decision of disqualification is made on grounds of guilty of corrupt practices including wrong disclosure of value of properties, evading taxes, etc.

3. Representation of the People Act (RPA), 1951 enables the High Court to declare an election void on certain grounds.

- Once the election is declared void the member has to vacate the office.
- The aggrieved person can appeal to the Supreme Court against the order of the High Court.

4. **Disqualification of a lawmaker is prescribed in three situations:**



### 1.6.3 PUBLIC SERVANTS LOSE IMMUNITY IN PRE-2014 CORRUPTION CASES

- Context:** A constitution bench of the Supreme Court (SC) declared that its 2014 judgment, which declared Section 6A of the Delhi Special Police Establishment (DSPE) Act 1946 as unconstitutional, will have a retrospective effect

- Key Highlights:**

- **Section 6A of Delhi Special Police Establishment (DSPE) Act** (inserted in 2003) required CBI to obtain prior sanction from the central government to investigate corruption cases against an officer of the rank of joint secretary.
- This provision was struck down as unconstitutional (violation of right to equality under **Article 14**) by SC in the Subramanian Swamy v. Union of India case (2014).

#### About DSPE Act 1946

- Enacted to investigate cases of bribery and corruption by Central Government employees.
- CBI's power to investigate cases is derived from this Act.

- Key highlights of SC judgment:**

- Once a law is declared unconstitutional on grounds of it violates any of the fundamental rights guaranteed under Part III of the Constitution, it would be held to be an unenforceable right from date of enactment (Void Ab Initio).
- Article 20(1) has no bearing in the context of declaration of Section 6A as unconstitutional as Article 20 (1) doesn't bar retrospective application of procedural changes in criminal trial.
  - Article 20(1) lays down that no person shall be convicted of any offense except for violation of a law in force at the time of the commission of the alleged act.

### 1.6.4 PRISON REFORM

- Context:** In September, 2023 the parliamentary committee on home affairs submitted report on 'Prison conditions, Infrastructure and Reforms'.

- Key Highlights:**

- **Women prisoners:** Of the total of 22,918 women inmates, 1,650 women inmates are with 1,867 children.





- Fewer number of women prisons and low representation of women in prison staff (only 13.77%)



Overcrowding

• National Average Occupancy Rate in prisons across India is 130.2%, with 77.1% of all the prisoners in the country being undertrials.

intensify their difficulties.



Understaffed

• Prisons are understaffed by approximately 30%



Prison budget

• Only 0.6% of prison budget is spent on vocational/ educational training of prisoners and 1% on their welfare activities.

### 3. Recommendations:

- Undertake a comprehensive study covering the population of the region, crime rate etc. to develop a suitable plan to enhance the capacity of the prisons or another alternative.
- Implement the “**Support to Poor Prisoners programme**” announced in the Union Budget 2023.
- Utilise technology like trackable bracelets to keep track of prisoners on bail.
- Renovate colonial-era prisons to preserve their heritage and earn revenue by encouraging tourism.
- State Governments may create a **Prison Development Fund** for the welfare activities of the prisoners.



## 2.

## INTERNATIONAL RELATIONS

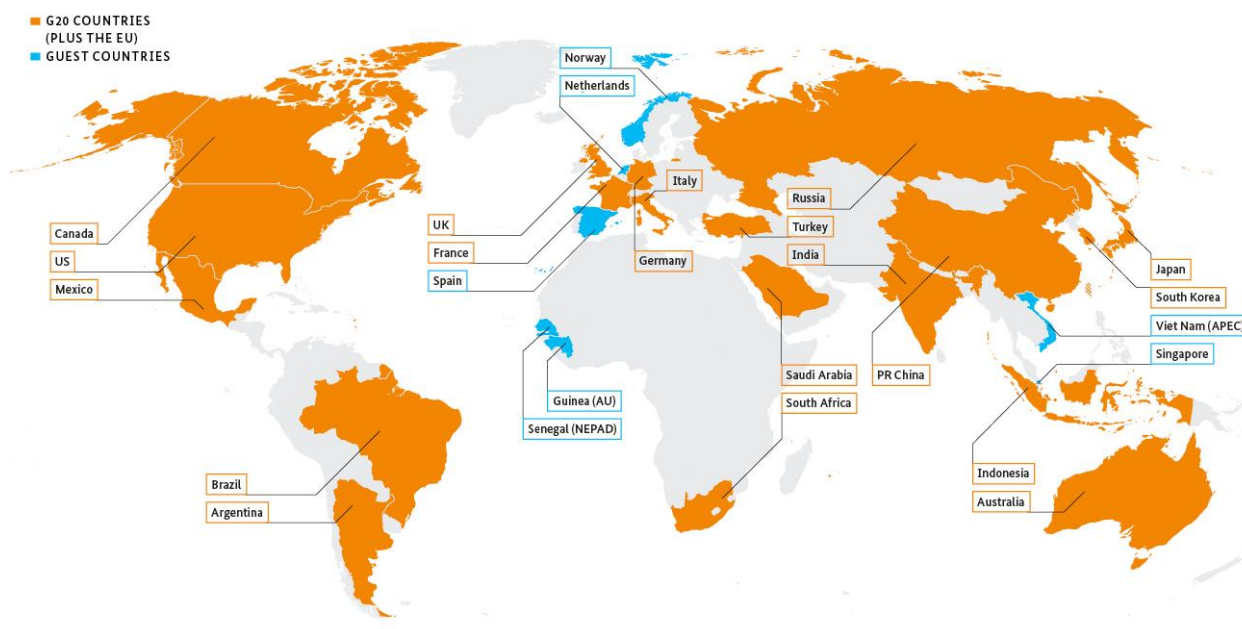
## 2.1 G20 SUMMIT IN INDIA

**Context:**

In September 2023, the 18th G20 Summit took place in New Delhi, India on September 9th and 10th, 2023, marking India's inaugural hosting of the G20 Leaders' Summit.

**What is the G20?**

1. The G20 represents a collective of nations accounting for **85% of the global GDP**, **over 75% of worldwide trade** and approximately **two-thirds of the global population**.
2. It functions as a global platform that convenes leading developed and developing economies.
3. Established in **1999** following the Asian financial crisis, it initially served as a regular forum for Finance Ministers and Central Bank Governors.
4. Its primary objectives include the study, review and facilitation of high-level discussions on policies concerning international financial stability.

**Aims & Objectives of G20:**

1. The G20 aims to achieve **global economic stability** and **sustainable growth** through policy coordination among its members while promoting financial regulations that mitigate risks and prevent future financial crises.
2. It also seeks to establish a **new international financial architecture**.

**G20 Presidency in India:**

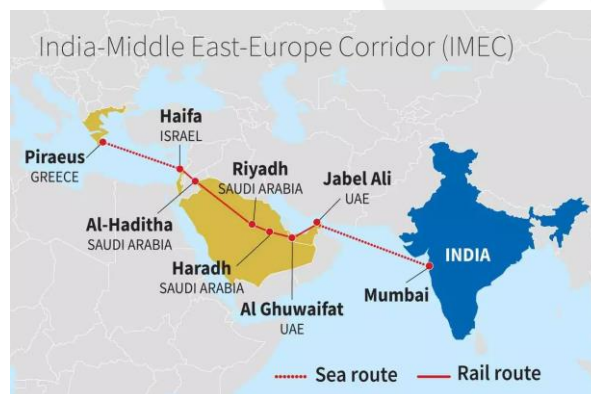
1. **Theme:** The motto is '**One Earth, One Family, One Future**', representing the concept of '**Vasudhaiva Kutumbakam**' from the ancient **Maha Upanishad**, written in Devanagari script.
2. **Guest Countries:** As part of its G20 presidency, India has invited Bangladesh, Egypt, Mauritius, the Netherlands, Nigeria, Oman, Singapore, Spain and the UAE as guest countries.
3. **New Delhi Declaration:** During India's G20 presidency, the New Delhi Declaration was adopted, resulting in significant achievements, including unanimous consensus among leaders on developmental and geopolitical matters. The declaration echoed India's **motto of "Sabka Saath, Sabka Vikas, Sabka Vishwas"** (Together with all, Development for all, Trust of all), emphasizing the principles of multilateralism and inclusiveness.



### Major Outcomes of G20 Summit 2023:

#### 1. India-Middle East-Europe Economic Corridor (IMEC):

- The India-Middle East-Europe Economic Corridor (IMEC) is a **proposed economic corridor** designed to enhance economic development by promoting connectivity and economic integration between Asia, the Persian Gulf and Europe.
- The corridor is envisioned to stretch from **India to Europe**, passing through the United Arab Emirates, Saudi Arabia, Jordan, Israel and Greece.
- The project's objective is to create a **comprehensive network of transport corridors**, encompassing railways and sea routes.
- IMEC is perceived as a **strategic response to China's Belt and Road Initiative (BRI)**, offering an alternative infrastructure network.



#### 2. Russia-Ukraine War:

- G20 nations recognized the principle that **territorial acquisition** through the use of force is not permissible and highlighted the suffering of the Ukrainian people.
- The G20 **refrained** from directly **criticizing Russia** for its involvement in the war.
- India, along with Brazil, Indonesia and South Africa, played a significant role in preventing the G20 from fracturing over the Ukraine conflict.
- This incident demonstrated the **increasing influence and importance of developing nations** from the Global South within the G20.

#### 3. Global Biofuels Alliance (GBA):

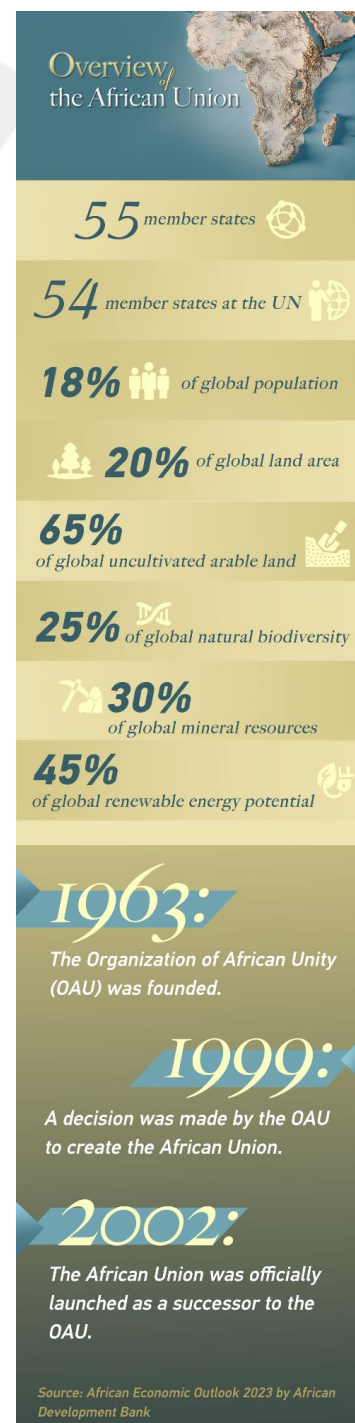
- The Global Biofuel Alliance, **led by India, the US and Brazil**, aims to tackle energy and economic challenges with eco-friendly biofuels.
- Its launch at the G20 Summit is a big step for **sustainable energy solutions**.
- The alliance wants to **promote biofuel use** for energy transition and economic growth.
- The Green Biofuel Agreement (GBA) benefits India by enhancing biofuel initiatives, boosting farmer income, reducing oil reliance, achieving national targets like 20% ethanol blending in petrol by 2025-26, and creating additional opportunities for Indian industries by meeting global biofuel demand.

#### 4. Green Development Pact:

- The Green Development Pact's declaration focuses on sustainable practices, endorsing principles for a **green lifestyle and hydrogen use**.
- Overall, the pact aims to promote sustainable development, strengthen the **blue economy**, ensure food security and support climate-related funding.

#### 5. African Union (G20 has now become G21):

- The African Union became a permanent member of the G20, enhancing the representation of developing nations.
- The African Union (AU) is a continental body comprising **55 member states** representing the countries of the African Continent.





- The AU's inclusion would **amplify the representation of the Global South in the G20**, challenging the traditional dominance of the G7 nations.
6. **Renewable Energy:**
    - G20 pledged to **triple global renewable energy capacity by 2030**, aiding the shift towards cleaner energy alternatives.
  7. **Finance-related Agreements:**
    - India's G-20 leadership led to significant financial agreements, including **cryptocurrency** regulatory policy, strengthened **Multilateral Development Banks**, and recognition of **India Stack's** role in financial inclusion.

#### The G20 Cultural Presentation from India featured:

1. Bharat Mandapam, inspired by Anubhav Mandapam.
2. Bronze statue of Lord Nataraja in the Chola style.
3. Konark Chakra of Odisha's Sun Temple and imagery from Nalanda University as iconic backdrops.
4. Display of Thanjavur Paintings and Dhokra art.
5. A brass statue of Lord Buddha sitting under the Bodhi tree.
6. Representation of a diverse musical heritage encompassing Hindustani, Folk, Carnatic and Devotional music.

#### What does the future hold?

1. India has passed on the G20 leadership to **Brazil for the year 2024**. The next G20 summit will happen in Rio de Janeiro, Brazil. **President Luiz Inacio Lula da Silva** is set to lead this summit in 2024.
2. **Key agenda priorities include:**
  - Promoting social inclusion and combating hunger.
  - Advancing the transition to sustainable energy and fostering development that encompasses social, economic and environmental dimensions.
  - Addressing reforms in global governance institutions.

#### India's G20 Presidency carries substantial importance:

1. India's G20 Presidency is significant for several key reasons.
2. It's a chance for India to **demonstrate its leadership** in steering global discussions and finding solutions to critical issues.
3. As G20 President, India represents the interests and **priorities of the Global South**, further establishing itself as their voice on the world stage.
4. This position also brings **economic opportunities** as Indian businesses can expand globally.
5. Hosting the summit allows India to showcase its **technological advancements** and **cultural heritage**, boosting its global stature.
6. India's history as a **mediator** helps build trust and reduce global divides.
7. Lastly, the G20 Presidency empowers India to **shape the global agenda** and promote its interests on the international stage.



#### India-US Collaboration at G20 Summit 2023:

1. **Technology Collaboration:** India and the US are enhancing their partnership, particularly focusing on resilient semiconductor supply chains and telecom infrastructure.
2. **Telecom Security:** India supports the US 'Rip and Replace' pilot project, aligning with the removal of Chinese telecom equipment and emphasizing network security.





- 3. Defence Partnership:** Both nations reaffirm their commitment to broadening the India-US Major Defence Partnership, exploring cooperation in areas such as space and artificial intelligence.
- 4. GE F-414 Jet Engine Agreement:** The US has finalized a commercial agreement for General Electric Aerospace and Hindustan Aeronautics Ltd. (HAL) to produce GE F-414 jet engines in India, signifying a significant step in boosting India's domestic defense manufacturing capabilities.

**The G20 encounters the following challenges:**

- 1. Geopolitical Strife:** Ongoing geopolitical conflicts among G20 nations hinder collaboration and agreement.
- 2. Inadequate Response:** Criticism has arisen over the G20's perceived inactivity regarding pressing global concerns like climate change and inequality.
- 3. Divergence in Interests:** Discordant national priorities among member countries impede the formation of consensus and cohesive approaches.
- 4. Absence of Legal Authority:** The G20 lacks legally binding agreements, constraining its ability to enforce decisions.
- 5. Transparency and Accountability:** Restricted opportunities for public scrutiny and the absence of a formal charter limit accountability and transparency.
- 6. Increasing Protectionism:** A growing trend towards protectionism and trade disputes among major economies presents a significant obstacle

**Some additional facts to remember about G20:**

- 1. Members:**
  - The G20 or Group of 20 is an intergovernmental forum comprising 19 sovereign countries, the European Union and the African Union and does not have a permanent secretariat.
  - Spain consistently participates in the G20 summits as chosen by the host country.
- 2. Presidency:**
  - The President is selected through a rotating system among member countries.
  - India currently holds the G20 Presidency from December 2022 to November 30, 2023.
- 3. Troika:**
  - The Troika for 2023 includes Indonesia, India and Brazil, representing the past, present and future presidencies.
- 4. Sherpa:**
  - A G20 Sherpa is a senior official chosen by a G20 member country to represent their leader during preparations for the annual G20 Leaders' Summit.
  - **Amitabh Kant** was India's G20 Sherpa for 2023, responsible for coordinating India's preparations for the G20 Leaders' Summit in September 2023.

**Conclusion:**

India's G20 Presidency showcased its leadership, represented the Global South and presented economic opportunities. It enhanced India's global presence, fostered trust and shaped the global agenda to promote its interests on the international stage.



## 2.2 INDIA'S ROLE AS A GLOBAL UNIFIER

### Context

In September 2023, due to India's G20 Presidency, which has adopted the theme "Vasudhaiva Kutumbakam – One Earth, One Family, One Future."

### What is Vasudhaiva Kutumbakam?

1. Vasudhaiva Kutumbakam is a Sanskrit phrase that originates from ancient Indian texts (Maha Upanishad) and means "the world is one family."
2. It reflects the idea that the whole world is a single family despite diverse cultures, beliefs, and races. This concept promotes global unity, peace, and understanding.
3. **Upanishadic Belief:** Based on the teachings of the Upanishads, this principle acknowledges the inherent divinity within all living beings, fostering a peaceful coexistence founded on this recognition.
4. **Progressive Ideals:** Fosters a forward-looking approach that champions collective progress as a united global community, transcending limitations posed by geography, language, and ideology.

### How India Serves as a Global Unifier through this Philosophy?

1. **Environmental Stewardship:** India is dedicated to sustainability through Mission LiFE and strives for net-zero emissions.
2. **Digital Public Infrastructure (DPI):** India's foundational DPI supports inclusive economic growth and aids other nations in adopting their own DPI.
3. **Energy Transition:** India champions cleaner energy through the International Solar Alliance and Global Biofuel Alliance.
4. **Inclusive Multilateralism:** India advocates for global governance reform, hosting the Voice of the Global South Summit and supporting African Union's G20 membership.
5. **Capacity Building:** India's ITEC program and Data for Development Capacity Building Initiative benefit professionals worldwide.
6. **Yoga Promotion:** India fosters global unity through the International Day of Yoga.
7. **Cultural Promotion:** India's G20 presidency showcased diverse cultures to strengthen international ties and socio-economic cooperation.

India's unwavering dedication to these initiatives underscores its role as a global unifier, actively engaged in addressing critical global issues and fostering a culture of inclusivity, cooperation and mutual understanding among nations.

### Challenges for India:

1. **National Interest Dilemma:** Striking a balance between global concerns and national interests poses a significant challenge, considering the competitive nature of international relations.
2. **Power Struggles:** The ideology of Vasudhaiva Kutumbakam faces criticism, with concerns about power centers prioritizing their interests over shared values, raising questions about power distribution in a multipolar world.
3. **Enforcement Hurdles:** Implementing the principles of Vasudhaiva Kutumbakam demands not only the establishment of common norms but also the capability to enforce these norms politically, economically, and militarily, posing a considerable challenge.
4. **Hard Power Paradox:** The reliance on the hard power of nation-states contradicts the philosophy of self-restraint that underpins Vasudhaiva Kutumbakam.
5. **Identity Politics Impact:** Movements driven by identity politics often emphasize the division of 'us' versus 'them,' fostering a rival mentality that contradicts the core essence of Vasudhaiva Kutumbakam.

### Conclusion:

The future of global cooperation lies in our ability to embrace diversity and interconnectedness, as the African proverb wisely reminds us, "If you want to go quickly, go alone. If you want to go far, go together."



## 2.3 INDIA: GLOBAL SOUTH DYNAMICS

### Context

In September 2023, the Indian Prime Minister arranged a virtual summit on the "Global South's Perspective," engaging around 125 nations.

### More in the News:

1. The summit aimed to gather feedback and insights from Global South countries to identify regional priorities.
2. India used its G20 presidency to support the interests of the Global South.

### What is Global South?

1. The term "Global South" denotes a cluster of countries frequently characterized as developing, less developed, or underdeveloped.
2. These nations are primarily located in the **Southern Hemisphere**, predominantly spanning across Africa, Asia and Latin America.
3. Conversely, the economically advanced nations like the United States, Canada, Europe, Russia, Australia and New Zealand form the **Global North**.
4. The term "Global South" is frequently employed to emphasize the **historical implications of colonialism** and the economic gaps between previously colonized nations and the more developed Western countries.
5. It highlights the obstacles encountered by these nations in their pursuit of economic progress and advancement.



### What are the demands of the Global South?

1. Demand for equitable representation and a proportional voice in global decision-making.
2. Emphasis on rectifying imbalances and ensuring fair consideration of their perspectives in international affairs.

### The mounting indications of the Global South's rising impact on the world stage are as follows:

1. **Creation of the 'Loss and Damage Fund':** The establishment of the 'Loss and Damage Fund' during the COP27 Climate Change conference in Egypt stands out as a significant acknowledgement of the disproportionate challenges faced by countries in the Global South.
2. **Prominent Global South Role in COP28:** As we look ahead to the UNFCCC COP28 in the UAE, it is anticipated that Global South countries will take a leading position in steering discussions on climate change mitigation. This development highlights their increasing sway in shaping global environmental policies.
3. **Expansion of BRICS:** The BRICS summit, hosted in South Africa, expanded its membership from five to 11 countries. This expansion reflects a deliberate effort to involve more Global South nations in the BRICS grouping, emphasizing its increasing significance.
4. **G7's Enhanced Inclusivity:** Japan's inclusion of countries like India, Brazil, Vietnam, Indonesia, Comoros and the Cook Islands in G7 discussions emphasizes the importance of the Global South's perspective in fostering a more comprehensive dialogue among advanced nations.
5. **G-77 Summit in Cuba:** The recent G-77 summit in Havana, Cuba, united numerous developing nations to discuss crucial global issues, showcasing the considerable influence of the Global South on the world stage.
6. **African Union's Integration into G20:** Incorporating the African Union into the G20 recognizes African nations' global importance and the Global South's increasing impact on global policies, environmental agreements, economic partnerships and international dialogues.

### India's capacity to serve as a voice for the Global South is bolstered by various factors:

1. **A Historical and Philosophical Legacy:** India's historical alignment with the Non-Aligned Movement and its philosophy of "**Vasudhaiva Kutumbakam**" (the world as one family) aligns with principles of global inclusivity and solidarity, making it a natural advocate for the Global South.



- 2. Economic and Geopolitical Influence in Global Affairs:** India's increasing economic and geopolitical influence in global politics places it as a significant player, capable of representing the interests and issues of the Global South on the world stage.
- 3. The Bridge Builder Between Developed and Developing Worlds:** India acts as a bridge between developed and developing nations, facilitating cooperation and mutual understanding between different regions.
- 4. A Beacon of Global Prosperity:** As one of the globe's fastest-growing economies, India's progress sets an example for other Global South nations, reinforcing its position as a credible champion for their ambitions.
- 5. Responsible Partner:** India's role as a responsible partner is evident through its swift responses to humanitarian crises and its provision of technical and financial aid to nations in need, underscoring its commitment to global well-being

#### The Obstacles Encountered by the Global South:

- 1. Inadequate Representation in International Forums:** Global South nations frequently encounter limited representation in global decision-making bodies, exemplified by their exclusion from permanent seats on the UN Security Council.
- 2. Global North's Geopolitical Conflicts and Their Ramifications:** Global North geopolitical conflicts often dominate international discussions, neglecting Global South concerns like rising oil and food prices, as seen in Ukraine conflict.
- 3. Clashing Perspectives on Normative Issues:** The Global North and South face persistent normative differences in democracy, human rights, and climate governance, which can hinder effective international cooperation and governance.
- 4. Disproportionate Burden of Global Challenges:** The Global South is disproportionately affected by climate change, highlighting the inequitable burden they bear in addressing global challenges.

#### India's Role as the Leading Voice of the Global South:

1. India has emerged as a **leader of the Global South** through a strategic blend of diplomatic outreach, economic growth and technology.
2. It has proactively addressed global crises, such as the **Vaccine Maitri initiative**, which provided medications and vaccines to over 100 countries.
3. India has championed **climate governance**, advocated for climate finance and pushed for multilateral reform, making global institutions more inclusive.
4. It contributes **alternative perspectives on normative issues** like democracy and human rights and fosters capacity building in the Global South.
5. Initiatives like the **India-UN Capacity Building Initiative** and collaborative platforms, like the Voice of Global South Summit, reinforce India's pivotal role in leading the Global South.

#### However, India's path forward is fraught with challenges:

1. Balancing **national interests** with international obligations, exemplified by India's recent rice export ban, requires a thoughtful approach.
2. India also grapples with **limited resources** to assist Global South nations while addressing its own developmental demands.
3. Furthermore, **China's competition**, interference and geopolitical agenda through economic aid and debt diplomacy add to the complexities of international dynamics.

#### Conclusion:

The way forward for India and the Global South involves advocating for their concerns in multilateral forums, enhancing collaboration and pushing for reforms in global trade and finance institutions to promote equity and access. India's role would remain crucial considering its rising profile on the international floor.



## 2.4 INDIA-ASEAN RELATIONS

### Context

In September 2023, the Indian Prime Minister attended the 20th ASEAN-India Summit and the 18th East Asia Summit in **Jakarta, Indonesia**, focusing on strengthening relationships with ASEAN countries and emphasizing a free, open and rules-based Indo-Pacific.

### What is ASEAN?

1. ASEAN, the Association of Southeast Asian Nations, is a regional organization that aims to foster **political and social stability** in the post-colonial states of the Asia-Pacific region.
2. The member nations of ASEAN are Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar and Cambodia.
3. In 2022, the **combined GDP** of all ASEAN states was around **USD 3.66 trillion**, which showcases its economic heft and significance as a bloc in the international arena.



### The key highlights of the ASEAN-India summit:

India proposed a **12-point plan** to strengthen ASEAN-India cooperation, which includes -

1. Establishing **multi-modal connectivity** and an **economic corridor** linking South-East Asia-India-West Asia-Europe.
2. Sharing India's **Digital Public Infrastructure Stack** with ASEAN partners.
3. Creating an **ASEAN-India Fund for Digital Future** focusing on digital transformation and financial connectivity.
4. Extending invitations to ASEAN countries to join the **Global Centre for Traditional Medicine** and the **Coalition for Disaster-Resilient Infrastructure**.
5. Stressed the timely completion of the review of the **ASEAN-India Trade in Goods Agreement (AITIGA)** for simpler and more trade-facilitative operations.
6. The proposal covered various areas including connectivity, digital transformation, trade engagement, addressing contemporary challenges, people-to-people contacts and deepening strategic engagement.
7. India called for collective efforts in areas such as disaster management, counter-terrorism and maritime safety, security and domain awareness.

### What is the East Asia Summit (EAS)?

1. The East Asia Summit (EAS) was established in **2005** under ASEAN's leadership.
2. It addresses significant political, security and economic issues in the Indo-Pacific region.
3. The EAS operates based on principles such as inclusiveness, respect for international law and the centrality of ASEAN.
4. It consists of the **10 ASEAN countries and eight dialogue partners**, including Australia, China, India, Japan, New Zealand, South Korea, Russia and the United States.
5. The areas of cooperation at the EAS encompass environmental issues, education, finance, global health concerns, disaster management and ASEAN Connectivity.
6. **India, as a founding member**, actively engages in the EAS to bolster its Act East Policy and strengthen partnerships with ASEAN and other regional nations.
7. During the East Asia Summit held in Bangkok in November 2019, India introduced the **Indo-Pacific Oceans Initiative (IPOI)** with the objective of establishing collaborations to ensure a secure and stable maritime environment.



**The key highlights of the 18th East Asia Summit (EAS):**

1. The Prime Minister of India emphasized the significance of the EAS mechanism and reiterated India's support for its further strengthening.
2. India firmly supported ASEAN centrality and advocated for ensuring a free, open and rules-based Indo-Pacific.
3. The implementation of the EAS Plan of Action (POA) 2018-2022 was reviewed and the adoption of the new EAS POA (2024-2028) was welcomed.

**The bond between India and ASEAN holds immense significance for various reasons:**

1. **Geopolitical Theatre:** ASEAN's centrality aligns with India's Act East Policy, Indo-Pacific Vision and the Security and Growth for All in the Region (SAGAR) initiative, emphasizing regional stability and growth.
2. **Chinese inroads:** India's engagement with ASEAN serves as a strategic response to counter China's influence, especially amid territorial disputes and false territorial claims, fostering shared concerns.
3. **Collaborative Prosperity:** By joining forces with ASEAN, India can drive regional economic integration and uplift communities through shared opportunities. The bilateral trade between India and ASEAN, amounting to USD 131.5 billion in 2022-23, underscores the pivotal role ASEAN plays in India's global trade, promoting economic prosperity.
4. **Cultural Fusion:** India's rich cultural heritage, encompassing ancient traditions, yoga and Ayurveda, resonates with ASEAN nations, fostering a tapestry of shared values and understanding. It enables India to move ahead with its Soft Power diplomacy.
5. **Strategic Unity:** Together, India and ASEAN build a strong defence against common challenges, including terrorism and transnational crimes, ensuring the safety and security of the entire region.
6. **Connectivity Revolution through the Development of Northeast:** Enhanced connectivity through projects such as the India-Myanmar-Thailand Trilateral Highway (IMT) and the Kaladan Multimodal Project has fostered progress and development in India's Northeast region.

**Related News item:**

1. ASEAN leaders have decided to **block Myanmar** from assuming the rotating leadership role in 2026, causing a setback to Myanmar's ruling generals seeking international recognition after their violent seizure of power in 2021.
2. The exclusion is largely linked to ongoing **civil unrest within Myanmar**, as well as concerns regarding potential negative impacts on ASEAN's relations with the United States and the European Union. Myanmar has faced significant issues since the military ousted **Aung San Suu Kyi's** democratically elected government, including widespread condemnation, allegations of civilian casualties and an economic collapse.
3. The **Philippines** has stepped in to take over the regional bloc's chairmanship in 2026 at the ASEAN summit held in Indonesia.

**Conclusion:**

To move ahead, India and ASEAN should enhance their partnership by aligning with the Indo-Pacific Oceans Initiative and ASEAN's AOIP (ASEAN Outlook on Indo-Pacific). Strengthening maritime cooperation, promoting value chain integration and expediting connectivity projects are key. Encouraging cultural and educational exchanges will further deepen ties.



## 2.5 ABRAHAM ACCORDS

### Context:

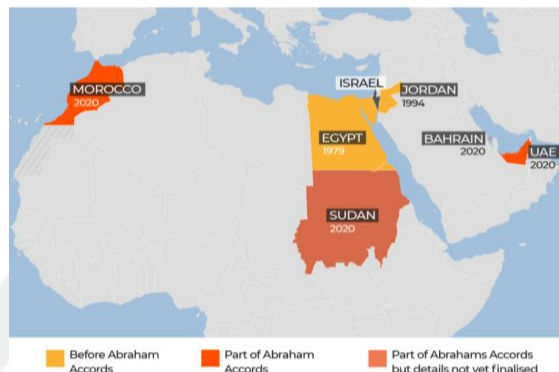
In September 2023, three years have passed since the momentous signing of the Abraham Accords, an event that reverberates in the headlines.

### What is the Abraham Accords?

1. In September 2020, a **historic moment** unfolded as the United States played mediator, fostering the Abraham Accords—a landmark agreement between the United Arab Emirates, Bahrain and Israel.
2. The Accords symbolize a **significant shift in Middle Eastern diplomacy**, aiming to normalize relations between the involved countries.
3. They are named after the biblical figure Abraham, representing a **shared heritage** and the **common roots** of the major monotheistic religions, which include Judaism, Islam and Christianity.
4. These agreements marked a key development in the political, economic and security integration of the Middle East, offering potential opportunities for countries like India.

### Arab countries with diplomatic ties to Israel

Only five Arab states - Egypt, Jordan, UAE, Bahrain and Morocco - have diplomatic relations with Israel.



### Significance of Abraham Accords:

1. The Abraham Accords signify a **gradual shift away from the Palestinian question** for Arab countries. They establish full diplomatic ties between Israel, the United Arab Emirates and Bahrain, fostering positive regional impacts.
2. The **UAE gains favour in the US**, while Pakistan faces a dilemma over whether to align with the UAE or not.
3. Experts view the Abraham Accords as a **strategic measure** aimed at creating a **collective security** framework, fostering stability and preventing conflicts in the Persian Gulf.
4. Additionally, the accords offer the potential to advance the **two-state solution** for the Israel-Palestine issue by promoting communication channels between Gulf Arab states and Israel.
5. They have led to a significant **increase in trade** and have facilitated **religious visits** and **technological cooperation**. The trade between Israel and other West Asian countries increased by 74% between 2021 and 2022.
6. The Accords have further fostered **educational opportunities**, with Emirati students enrolling in Israeli universities and Bahrain engaging in various agreements with Israel to promote student and faculty exchanges.

### What is the Relevance of the Abraham Accords for India?

1. **Diplomatic Ties:** India can strengthen its relations with Arab nations and Israel, facilitated by the atmosphere created by the Abraham Accords. The formation of the I2U2, often referred to as the "**West Asian Quad**" or the "**Indo-Abrahamic construct**," exemplifies this potential.
2. **Investment Opportunities:** The Accords encourage joint investments in crucial sectors such as food security, health, transportation, space, water and energy. The establishment of the International Federation of Indo-Israel Chamber of Commerce (IFIICC) in Dubai further reinforces this potential.
3. **Technological Cooperation:** India, UAE, and Israel's technological, financial, and innovative capabilities can foster significant cooperation, as seen in projects like robotic solar panel collaboration with Israeli company Eccopia.
4. **Diaspora Relations:** The increased connectivity between UAE, Israel, and Bahrain has improved mobility for the Indian diaspora, allowing them to explore international study programs and access Indian universities.

### The Challenges Confronting the Abraham Accords:

1. **Palestinian Issue:** Concerns regarding the future of Palestine and opposition from countries like Iran and Qatar.
2. **Lack of regional support:** Some countries, like Bahrain, remain cautious due to their close ties with other regional powers.



3. **Cultural conflicts:** Deep-seated Shia-Sunni divisions in the region may escalate and become violent, impacting the stability of the Accords.
4. **Multilateral power struggle:** The involvement of major global powers like the US, Russia and China introduces complexities and potential shifts in geopolitical dynamics.
5. **Funding constraints:** The Abraham Fund, established as part of the Accords, faces limitations and changes in US administration have affected its potential.
6. **Changing geopolitical alliances in West Asia:** Historical influences from various countries continue to shape the region's political landscape, impacting the implementation of the Accords.

### Conclusion

The Abraham Accords signify a "good beginning" for closer Israel-Arab ties, fostering peace and regional cooperation. However, "sustainable peace requires addressing the root causes of conflict," particularly the Israel-Palestine issue. The success and expansion of the Accords depend on several influential factors, including "the US-China rivalry" and the ever-shifting "politics of alignments and realignment" in the West Asia region.

## 2.6 INDIA - SAUDI ARABIA RELATIONS

### Context

In September 2023, following the inauguration of the India-Middle East-Europe Economic Corridor, the Prime Minister of India hosted the Crown Prince of Saudi Arabia on a **State visit**.

### More in the News:

1. During this momentous event, the two countries engaged in discussions regarding different dimensions of their strategic partnership.
2. An agreement was reached to establish a **joint task force** to accelerate the West Coast refinery project.



### Insights of Indo-Saudi Relationship:

India's relationship with Saudi Arabia has been characterized by several key aspects:

1. The Kingdom serves as **India's second-largest supplier of crude oil**, along with playing a significant role in meeting India's Liquefied Petroleum Gas demands.
2. In terms of trade, Saudi Arabia stands as **India's fourth largest trade partner**, with bilateral trade in the fiscal year 2022 valued at USD 29.28 billion.
3. Cultural ties between the two nations are strong, highlighted by the **Hajj pilgrimage** and the digitalization of Hajj processes.
4. India's significant participation as the '**Guest of Honour**' at the Saudi National Festival of Heritage and Culture in 2018 further solidified this cultural bond.
5. In 2021, both countries marked a significant milestone in their **defence cooperation** with the commencement of their first-ever joint naval exercise, the Al-Mohed Al-Hindi Exercise.
6. Additionally, the **2.6 million-strong Indian community** in Saudi Arabia holds a prominent position, contributing significantly to the Kingdom's development and growth and earning high respect for their contributions.

### What were the results and agreements stemming from the visit?

1. **India-Saudi Strategic Partnership Council (SPC):**
  - o The Indian Prime Minister and the Crown Prince of Saudi Arabia jointly led the **first meeting** of the India-Saudi Strategic Partnership Council (SPC).



- Conversations encompassed a **broad spectrum** spanning defence, energy, security, education, technology, transportation, healthcare, tourism, culture, space and semiconductors, indicating the comprehensive scope of economic cooperation between the two nations.

## 2. West Coast refinery project:

- One of the significant highlights was the agreement to establish a **joint task force** aimed at accelerating the ambitious **West Coast refinery project**, which is set to receive a substantial investment of \$50 billion, with Saudi Arabia committing \$100 billion for the project.
- This project, located in **Maharashtra**, holds significant potential, boasting an expected production capacity of 60 million tonnes annually and featuring essential facilities such as marine storage, crude oil terminals and desalination plants.

## 3. Bilateral Agreements & cooperative spirit:

- Furthermore, the visit saw the signing of **eight bilateral agreements**, strengthening collaboration in areas including technology, education, agriculture and anti-corruption efforts.
- Saudi Arabia reiterated its commitment to ensuring a **stable supply of crude oil** to India, thus contributing to India's energy security.
- Both nations also expressed their intent to bolster **cooperation in defence and anti-terrorism** measures, particularly emphasizing the prevention of access to weapons for terrorist activities.
- This visit assumes added **geopolitical significance**, occurring in the wake of Saudi Arabia's recent diplomatic moves and its enhanced global engagement.

## Strategic Partnership Council (SPC)

1. The India-Saudi Strategic Partnership Council (SPC), initiated in 2019, serves as a pivotal **high-level mechanism** guiding and bolstering the bilateral ties between India and Saudi Arabia.
2. It operates through **two distinct sub-committees**, focusing on different areas of cooperation, namely Political, Security, Social and Cultural Cooperation and Economy and Investments.
3. Notably, India marks the fourth country, after the UK, France and China, to engage in such a strategic partnership with Saudi Arabia.
4. **Functions & Operational Mechanism:**
  - The SPC operates through a **four-tier framework** which includes high-level summits, ministerial interactions, senior officials' meetings and Joint Working Groups (JWGs).
  - The SPC serves as a collaborative platform, fostering comprehensive discussions and ensuring effective coordination for joint initiatives.





## 2.7 NEWS IN SHORTS

### 2.7.1 FIVE EYES ALLIANCE

#### Context

In September 2023, Canadian PM's allegations of Indian involvement in a Sikh leader's assassination, based on Five Eyes Alliance, are causing tensions between India and Canada, requiring immediate diplomatic resolution.

#### What is the Five Eyes Alliance?

1. The Five Eyes is a collaborative intelligence alliance involving countries such as **Australia, Canada, New Zealand, the United Kingdom and the United States**.
2. These nations are participants in the multilateral **UK-USA Agreement**, a treaty facilitating joint cooperation in signals intelligence.
3. Under this alliance, member countries share a broad range of intelligence within one of the world's most closely-knit multilateral agreements.
4. The alliance's composition has expanded over time to include the '**Nine Eyes**' and '**14 Eyes**' alliances, encompassing additional countries as security partners.



#### History of Five Eyes Alliance:

1. The roots of the alliance can be traced back to **World War II**, when the UK and the US decided to collaborate on intelligence sharing after successfully deciphering German and Japanese codes, respectively.
2. The initial **BRUSA agreement** was established in 1943 to exchange intelligence between the two nations, primarily to aid US forces in Europe.
3. This later paved the way for the **UKUSA agreement** in 1946, with Canada joining in 1949 and New Zealand and Australia becoming part of the alliance in 1956.



#### Potential Role of Five Eyes in the Current India-Canada Issue:

1. Considering the **closeness of countries** like the US, the UK and Australia to India, as well as the significant Indian and **Indian-origin populations** within these nations, there exists a level of understanding regarding the complexity of the issue, similar to Canada's perspective.
2. These countries have also observed instances of **pro-Khalistan activities** in recent years, but due to their historical ties with both Canada and India, outright support for either side is unlikely.
3. Given the current state of relations, these countries, particularly the US, could potentially act as **mediators** in the issue once they possess clear intelligence and comprehensive information about the matter.

### 2.7.2 L.69 GROUP'S PUSH FOR REFORM

#### Context

In September 2023, acknowledging the limitations of the UN Security Council (UNSC) in addressing worldwide issues, the L.69 group of nations has pledged to infuse fresh energy into their endeavours to bring about **reform within the UNSC**.

#### What is L.69 Group?

1. The L.69 group consists of countries advocating for reform, primarily representing developing nations from **Africa, Latin America and the Caribbean, Asia and the Pacific**.





2. The group firmly believes that an expansion in both permanent and non-permanent UNSC membership is necessary to more accurately reflect the modern global landscape.
3. With **42 member** countries, India is among the members of this group.
4. The Group derives its name from the **draft document number "L.69"** that the Group had tabled in 2007-08, which led to the initiation of the Intergovernmental Negotiation (IGN) process.

### 2.7.3 UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE LAW (UNCITRAL)

#### Context

In September 2023, UNCITRAL held its inaugural South Asia Conference in India.

#### What is UNCITRAL?

1. It is the core legal body of the United Nations system in the field of international trade law.
2. Established in **1966**, UNCITRAL operates as a **subsidiary body of the UN General Assembly** with the specific mandate of further harmonizing and unifying international trade law.
3. Its composition includes **70 Member States**, each elected by the General Assembly to serve six-year terms. India, in particular, is a member of UNCITRAL until 2028.
4. It's essential to distinguish UNCITRAL's role from that of the World Trade Organization (WTO). While the WTO deals with trade policy matters, UNCITRAL focuses on **laws applicable to private parties** engaged in international transactions.
5. UNCITRAL is not involved in state-to-state trade issues, making it a critical institution for private sector engagement in global trade.

### 2.7.4 OIML CERTIFICATES

#### Context

In September 2023, India has gained recognition as an OIML certificate-issuing authority.

#### What is OIML Certificate System?

1. The OIML (International Organization of Legal Metrology) Certificate system regulates the issuance, registration, and utilization of OIML certificates and associated testing reports for instruments such as thermometers and clinical thermometers.
2. Its importance lies in boosting exports, foreign exchange earnings, and employment generation.

#### Background of OIML:

1. OIML has been established in **1955**.
2. It aims to formulate model regulations, standards, and relevant documents for adoption by legal metrology authorities and industries.
3. The organization currently has a membership of **64 Member States**.



### 3. ECONOMY

#### 3.1 GDP ESTIMATION IN INDIA

**Context**

In September 2023, the Ministry of Finance clarified the ongoing debate surrounding the accuracy of the April-June 2023 GDP data.

**More in the news**

- GDP trend:** India experienced its highest real GDP growth of 7.8% in April-June 2023-24, according to the income or production approach, in the past four quarters.
- Sector trend:** The growth was largely driven by a double-digit expansion in the services sector, which accounts for 56% of gross value added.
- Impact of inflation:** The GDP figures are inflated as they do not accurately reflect the impact of inflation on GDP growth.

<b>GDP</b> Gross Domestic Product	<b>GNP</b> Gross National Product	<b>GNI</b> Gross National Income
Value of national output produced in a country. - National income - National output - National expenditure	GNP = GDP + net property income from abroad.	Similar to GNP - Sum value of output by resident producers + net receipts of primary income from abroad + any product taxes (less subsidies) not included in the valuation of output.
Includes income of foreign multinationals	Excludes income earned by multinational when profit is sent back to other country	A country which earns positive net income on FDI will include in GNI, but not GDP

**What are the GDP calculation approaches?**

There are 3 approaches to calculating the GDP of a country.

- Output (Production) or 'Value-added' Approach:** The approach involves calculating an industry's output and subtracting its intermediate consumption, which includes goods and services used to produce the output, to determine its value added.
- Income approach:** Income from all production factors in an economy includes labor wages, land rent, capital return, interest, and corporate profits.
- Expenditure approach:** The expenditure approach to GDP is calculated by combining private and government final consumption expenditure, gross capital formation, exports, and imports.

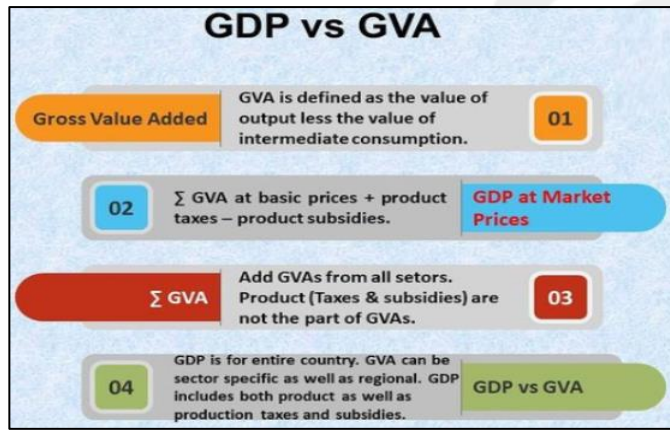
EXPENDITURE METHOD	PRODUCTION (Value added) METHOD	INCOME METHOD
<b>FINAL CONSUMPTION EXPENDITURE</b> <i>PFCE (Private Final Consumption Expenditure)</i> + <i>GFCE (Govt. Final Consumption Expenditure)</i> + <b>GROSS DOMESTIC CAPITAL FORMATION</b> <i>Gross domestic fixed capital formation (Business fixed investment + Govt. fixed investment + Household residential construction investment)</i> + <i>Change in stock (closing stock - opening stock)</i> + <b>NET EXPORTS</b> <i>(Exports - Imports)</i> = GDP mp	GVA in Primary Sector at market price + GVA in Secondary Sector at market price + GVA in Tertiary Sector at market price [where Gross Value Added GVA = Value of output (Sales - Change in stock) - Intermediate consumption] = GDP mp	Compensation of employees + Rent + Interest + Profit } <b>Operating Surplus</b> + <b>Mixed income of self-employed</b> + Depreciation (or CFC; consumption of fixed capital) + Net indirect taxes = GDP mp

**Note:** The growth rate in three approaches should be consistent, but variations in data collection and processing (often referred to as statistical discrepancy) can lead to gaps in the final calculation.



**Present GDP Calculation Methodology in India**

- Income Method:** Government of India follows the consistent practice of using the income approach to compute economic growth.
- Real and Nominal GDP:** The Ministry of Statistics and Programme Implementation (MoSPI) calculates quarterly Gross Value Added (GVA) at constant prices (base year: 2011-12) and current prices (nominal GDP).



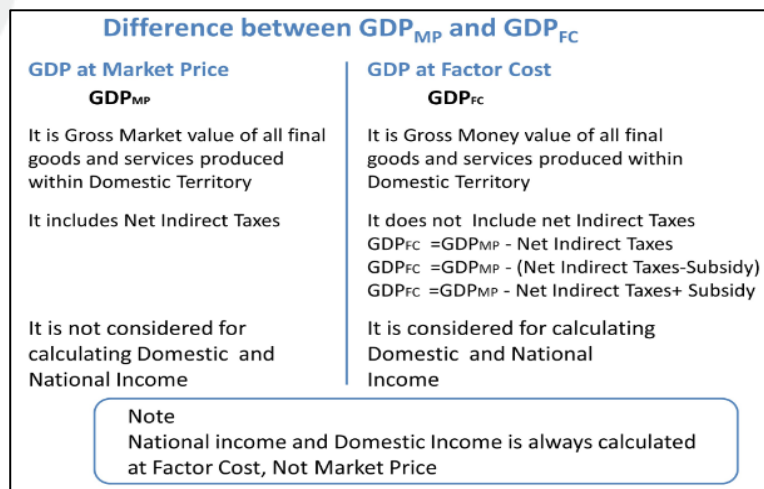
Aspect	Nominal GDP	Real GDP
<b>Definition</b>	Total value of goods and services produced within an economy, calculated using current market prices.	Total value of goods and services produced within an economy, adjusted for changes in price levels.
<b>Calculation Method</b>	Market prices multiplied by quantities of goods and services produced.	Base year prices multiplied by quantities of goods and services produced.
<b>Inflation Adjustment</b>	Not adjusted for inflation.	Adjusted for inflation by using base year prices.
<b>Focus</b>	Reflects both production and price changes.	Reflects changes in production only, excluding the effects of price changes.
<b>Comparative Analysis</b>	Less accurate for cross-time comparisons as it includes price changes.	More accurate for cross-time comparisons as it excludes the impact of price changes.
<b>Economic Interpretation</b>	Reflects nominal income levels.	Reflects the true expansion of an economy's production.
<b>Purpose</b>	Used to understand revenue and expenditure at current market prices.	Used to assess economic growth and performance, accounting for inflation.

**What are the Changes brought in GDP calculations in 2015?**

In 2015 the Central Statistics Office (CSO) introduced a few changes in the GDP calculation. They are:

- Change in the base year (from 2004-2005 to 2011-2012):** The National Statistical Commission recommended a 5-year revision of economic indices' base year, prompting the CSO to adjust the base year accordingly.
- Replacing Factor Cost with Market Prices:** CSO will use the gross value added (GVA) method to measure GDP at basic prices, instead of factor cost.

- Industry-wise estimates will be presented as gross value added (GVA) at basic prices, while GDP at market prices will be referred to as GDP.
- Recommended by the United Nations System of National Accounts in 2008 for reasons like:
  - Method followed as international practice.
  - The goal is to make India's GDP growth numbers comparable to those of developed nations in the future.



- Broadening of data pool:** The new data provides a comprehensive view of the enterprise level, contrasting with the factory-level perspective provided by the earlier data.
  - The new database is based on data from the Ministry of Corporate Affairs (MCA21), which has registered over five lakh companies.





- Coverage of financial corporations:** It was improved by including stock brokers, stock exchanges, asset management companies, mutual funds and pension funds, as well as the regulatory bodies, SEBI, PFRDA and IRDA.
- Changes in calculation of agricultural income:** The new data now includes value addition in livestock, extending the previous data's focus on farm produce.
- For example, Value added to the by-product of Meat like head, skin legs etc.

**Challenges with current GDP calculation methodology**

- Accuracy of Data:** The GDP calculation relies on the accuracy and credibility of available data, as outdated data in various economic sectors can lead to inaccurate economic activity.
- Delay:** India's GDP results declaration cycle lasts three years, resulting in accurate data for one fiscal year after a three-year lag.
- Accounting unorganized sector:** The GDP computation methodology currently employs data from the organized sector as a proxy for the unorganized sector.
- Exclusion:** GDP excludes unpaid work and black-market activities due to their difficulty in accurately measuring and valuing.
- Calculation Discrepancies:** The analysis of GDP expenditure components reveals a concerning trend of decreasing elements such as private consumption, government spending, valuables, and exports as a percentage of GDP.
- Dual Calculation Methods:** India's GDP is determined using two distinct methods: economic activity at factor cost and expenditure at market prices, which may result in variations in GDP figures.
- Impact on policy decisions:** The oversimplification of GDP figures can obscure the economic struggles and difficulties faced by a significant portion of the population.
- Government Interference:** Government interference in GDP calculations and release raises concerns about political motivations potentially affecting the accuracy and reliability of economic data.

**What are the steps taken by the government to address the issue related to GDP?**

- Credibility of Indian GDP Data:** The Finance Ministry clarified that Indian GDP data is not seasonally adjusted and finalized three years later, thereby proving that relying solely on GDP indicators is misleading.
- Need for Comprehensive Analysis:** The Ministry urged critics to consider growth indicators like Purchasing Managers' Indices, Bank Credit Growth, and consumption patterns for a comprehensive economic analysis.
- Underestimation of Growth Numbers:** The Ministry argued that India's growth figures may underestimate economic reality, citing the Index of Industrial Production (IIP) as an example of reported manufacturing growth being lower than actual figures.
- Nominal vs. Real GDP Growth:** The Ministry clarified that India's GDP deflator, primarily influenced by the Wholesale Price Index (WPI), is expected to normalize in the coming times.
- Income Approach for GDP Calculation:** India consistently uses the Income Approach for GDP growth, rejecting arguments favoring nominal GDP growth, according to the Ministry.

- GDP Deflator:** The GDP Deflator measures inflation by comparing the value of goods and services produced in a given year to the base year's prices, calculated by multiplying minor GDP by

**Way Forward**

- Base year updating:** To maintain the accuracy of GDP volume estimates, it is necessary to regularly update the base year. (Current base year is 2011-12, which is more than a decade older.)
- Double deflation:** There is a need to implement double deflation, which separates outputs and inputs using relevant price indices.
- Use of technology:** Emerging tools like Big Data and Artificial Intelligence can enhance GDP estimation accuracy through timely data collection, storage, and processing.

Economic Growth	Economic Development
Economic growth refers to an increase over time in a country's real output of goods and services or real output.	Economic development implies an upward movement of the entire social system in terms of income, savings and investment etc. along with progressive changes in socioeconomic structure of country.
It is a <b>quantitative aspect</b> . It measures quantitative changes in the economy such as increase in real national income / national output, production of goods and services etc.	It is both <b>quantitative and qualitative aspect</b> . It takes in to account qualitative aspects such as improvement in the standard of living, reduction in poverty, a decrease in inequality figures, improvement in literacy rate, improvement in health etc.
It is a <b>narrower concept</b> . It is concerned with increase in the economy's output.	It is a <b>broader concept</b> . It deals with growth of human capital indexes, and structural changes that improve the general population's quality of life etc.
It is a <b>One-dimensional</b> phenomenon as it only focuses on the income of the people in the country.	It is a <b>multi-dimensional</b> phenomenon because it focuses on the income of the people and on the living standards etc of the people.
It is measured on the basis of GDP, GNP, NDP, NNP etc.	It is measured on the basis of Human development Index (HDI), gender related index, inequality index etc.



- Measurement of productive activity:** The GDP figure should include all productive activities of an economy, including voluntary and unpaid household work, regardless of economic transactions.

#### Is GDP a true and accurate measurement of growth?

- **Misleading growth:** GDP does not accurately reflect a country's overall standard of living or well-being, as key goods like peace, environmental protection, and family bonding are not measured through transactions.
- **Inclusion of social harm:** GDP can even consider social harm if it leads to positive economic activity. For instance, the measure considers a train crash as beneficial as an uninterrupted service that generates sales, despite the expenses of track repairs, medical bills, and funeral costs.
- **Non-inclusion of social and environmental aspects:** The system does not allow for the evaluation of social aspects like health, education quality, leisure time, or natural capital accounting.

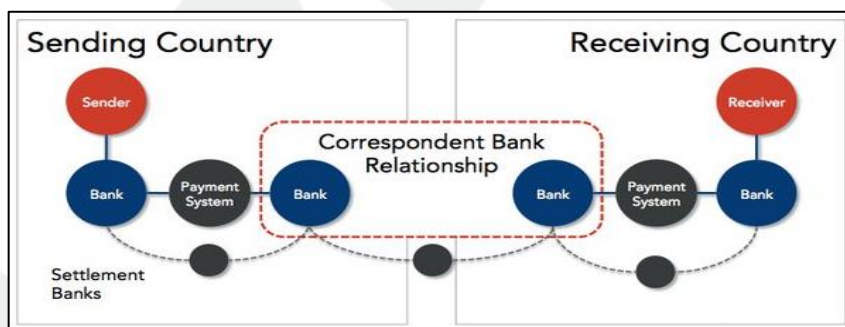
## 3.2 CROSS BORDER PAYMENTS

### Context

In September 2023, the fourth and 2023 G20 TechSprint aimed to promote innovative solutions for enhancing cross-border payments.

### What is Cross border payment?

- About:** This refers to a transaction between financial institutions, businesses, and individuals, where the sender and recipient are located in different countries.
- Market Value:** The cross-border payments market is projected to reach a value of \$290 trillion by 2030, with an estimated \$190 trillion in value in 2023.



### What is the significance of cross-border payments?

- Financial inclusion:** It can play a pivotal role in bridging the gap and enabling underserved communities to participate in the global economy.
- Access to global markets:** It allows businesses to expand into international markets and reach new customers, suppliers, and partners.
- Diversification:** It enables businesses to diversify their customer base, supplier base, and investment portfolio.
- Globalization:** Cross-border payments are a fundamental element of the globalization process.

#### G20 TechSprint

- **About:** It is a global technology competition aimed at fostering collaboration among financial institutions, technology providers, and other stakeholders to create innovative cross-border payment solutions.
- **Launched by:** It is a collaboration between the BIS Innovation Hub and the Reserve Bank of India.
  - India proposed to expand its Bharat Bill Payment System (BBPS) presence for cross-border bill payments in the UK.
- **Focus Area:** It will discuss three cross-border payment problem statements formulated by the RBI and the BIS Innovation Hub:
  - Anti-Money Laundering/Countering the Financing of Terrorism (AML/CFT).
  - Sanctions technology solutions to reduce illicit finance risk, forex (FX), and liquidity technology solutions to enable settlement in emerging market and developing economy (EMDE) currencies.
  - Technology solutions for multilateral cross-border central banking digital currency (CBDC) platforms.





### Significance of cross-border payments for Indian economy

- 1. Growth in Remittances:** Since 2016, India's cross-border remittances have been experiencing an 8% compound annual growth rate (CAGR) growth. [CAGR: a statistical measure that quantifies the growth of an investment or business over a specific period]
  - Remittances are money transfers made by migrants to their families and friends in their home countries.
- 2. Facilitating tourism:** In 2021, India's travel and tourism industry contributed approximately 178 billion U.S. dollars to the country's GDP.
- 3. Foreign investment:** In the fiscal year 2023, India experienced a total FDI inflow of US\$70.97 billion.

### What are the Issues/ Concerns/ Challenges related to cross-border payments?

- 1. Multiple regulations:** Different government regulations in originating and receiving countries.
- 2. Lack of Standardization of financial data:** Such as Weak financial institutions, inadequate regulation and supervision, and lack of transparency.
- 3. Issue with data processing:** Legacy technology platforms that rely on batch processing, lack real-time monitoring, and have low data processing capacity.
- 4. Security risks:** Such as Money laundering, terror financing and cyber fraud.
- 5. High cost and delay in settlement:** The process involves multiple layers, limited operating hours, and long transaction chains across different time zones due to various checks and controls.

### What are the steps taken in India for strengthening cross-border payments?

- 1. RBI Payments Vision 2025:** The focus is on enhancing cross-border payment efficiency through bilateral and multilateral arrangements.



- 2. NIPL (NPCI International Payments Limited):** BHIM UPI QR has been successfully implemented in Singapore, UAE, Mauritius, Nepal, and Bhutan through various initiatives taken under NIPL across various nations.
- 3. Expansion of UPI:** The Reserve Bank of India (RBI) has granted foreign nationals and NRIs visiting India the ability to make payments using the Unified Payments Interface (UPI).
- 4. India-UAE MoU:** The Reserve Bank of India (RBI) and the UAE's Central Bank have signed an MoU to conduct cross-border payment using central bank digital currency (CBDC).

- ★ CBDC is the legal tender issued by a central bank in a digital form.
- ★ It is the same as a fiat currency and is exchangeable one-to-one with the fiat currency. Only its form is different.

### Way forward

- 1. Strengthening infrastructure:** The goal is to enhance the efficiency and effectiveness of existing payment systems by aligning processes and operating hours across various systems.
  - Explore the potential of new payment infrastructures and arrangements, such as central bank digital currencies (CBDCs).
- 2. Global standard:** The adoption of a harmonized version of ISO 20022, an open global standard for financial information, will be implemented for message format.



3. **Collaboration and Cooperation:** Collaborate with fintech companies specializing in cross-border payments to utilize their expertise and innovative solutions.
4. **Rule and Regulations:** The task involves ensuring adherence to both international and local regulations, such as anti-money laundering (AML) and know-your-customer (KYC) standards.
5. **Rigorous and effective risk assessments:** It is to reduce the burden associated with compliance checks and facilitate market entry.

#### Various types of cross-border payment

- **International Wire Transfers:** The sender provides their bank with instructions to send money to a recipient in another country, such as using SWIFT (Society for Worldwide Interbank Financial Telecommunication) codes for international transfers.
  - A SWIFT code, also known as a SWIFT number, is a global system used to identify banks and financial institutions.
- **Digital Wallets:** This product is ideal for small transactions and can be used with payment methods like PayPal, Google Pay, or Apple Pay.
- **International money orders:** This is a payment method that can be sent via mail or electronically transmitted through a third-party provider.
- **Credit card transactions:** Businesses can accept payments from customers in various currencies through the use of accepted credit cards.
- **Cryptocurrencies:** Cryptocurrencies like Bitcoin and Ethereum are decentralized digital currencies that enable cross-border payments.

### 3.3 CORPORATE GOVERNANCE

#### Context

In September 2023, the G20 Leaders' Summit in New Delhi endorsed the revised G20/OECD Principles of Corporate Governance.

#### More in News

1. **G20/OECD Principles of Corporate Governance:** These are the global standards for corporate governance which are organized into six chapters.
2. **Review:** The Principles underwent a thorough review in 2021-2023 to adapt to the latest developments in corporate governance and capital markets.
3. **Adoption:** The OECD Council adopted the revised Principles at the Ministerial Level in June 2023.

- **Organization for Economic Cooperation and Development (OECD):** The forum is a unique platform where 37 market-based democracies collaborate to develop policy standards for sustainable economic growth.
- **G20:** The forum is the leading global forum for international economic cooperation, crucial in shaping and strengthening global governance on major international economic issues.

#### Revised G20/OECD Principles of Corporate Governance

Chapter I	<ul style="list-style-type: none"> <li>• <b>Corporate governance framework:</b> The framework for effective corporate governance should align with legal and regulatory requirements, while also addressing the risks associated with digital technologies.</li> </ul>
Chapter II	<ul style="list-style-type: none"> <li>• <b>Equitable treatment:</b> Addressing conflicts of interest in related transactions is crucial for ensuring the rights and equitable treatment of shareholders and key ownership functions.</li> </ul>
Chapter III	<ul style="list-style-type: none"> <li>• <b>Addressing market manipulation:</b> The prohibition of insider trading and market manipulation is being enforced by institutional investors, stock markets, and other intermediaries.</li> </ul>
Chapter IV	<ul style="list-style-type: none"> <li>• <b>Disclosure and transparency:</b> The policy emphasizes transparency and disclosure, including capital structures, group structures, and voting rights, and requires an annual external audit by an independent agency.</li> </ul>



<p>Chapter V</p>	<ul style="list-style-type: none"> <li>• <b>Responsibilities of the board:</b> The board's duties include ensuring fair treatment of shareholders, conducting a transparent and formal board nomination and election process, and other related responsibilities.</li> </ul>
<p>Chapter VI</p>	<ul style="list-style-type: none"> <li>• <b>Sustainability and resilience:</b> Corporate governance policies promoting sustainability are crucial for a company's long-term success, and sustainability-related disclosure frameworks should align with internationally recognized standards.</li> </ul>

**What is corporate governance?**

1. **About:** Corporate governance refers to the system that governs and directs companies.
2. **Aspects:** Balancing the interests of various stakeholders, including shareholders, management, customers, suppliers, financiers, government, and the community, is a crucial aspect of a company's operations.

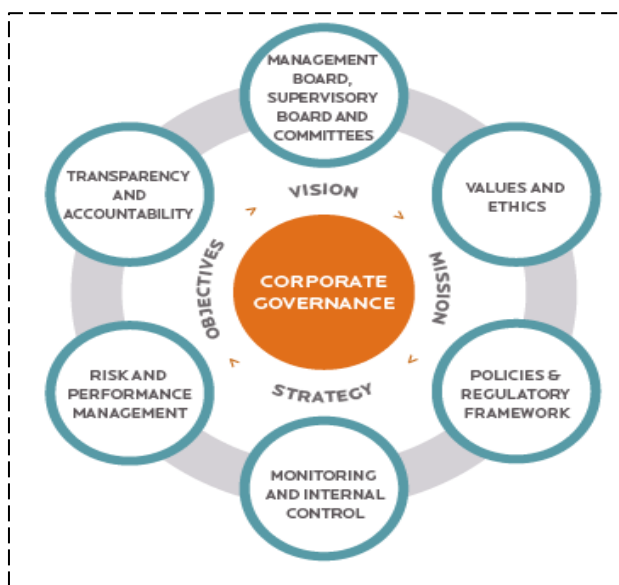
## 7 principles of corporate governance

- **Integrity:** Perform duties honestly and in accordance with moral principles
- **Transparency:** Make goals and methods of achieving them visible to all affected by the business
- **Reliance:** Seek guidance from management, counsel and other trusted advisors
- **Legal compliance:** Follow rules and regulations to remain within the law and demonstrate social responsibility
- **Equity:** Treat all stakeholders fairly and equitably
- **Independence:** Minimize conflicts and conflicts of interest
- **Security:** Keep nonpublic information secure and confidential



**What is Need for a strong corporate governance framework?**

1. **Improves Financial Performance:** The implementation of robust governance mechanisms enhances financial performance by enhancing operational efficiency, reducing risks, and enabling better-informed decision-making.
2. **Build trust and confidence:** The goal is to foster trust and confidence among both individual and institutional investors, thereby increasing the amount of capital available for companies.
3. **Access to finance:** Enhances capital market financing access and fosters innovation, productivity, and entrepreneurship.
4. **Economic significance:** Corporate governance failures, especially those involving large companies or financial institutions, can have significant economic impacts.
5. **Societal significance:** The company aims to create a positive social impact by aligning its business strategies with the needs of society.
6. **Improve productivity and efficiency:** The goal is to foster a positive corporate culture by enhancing productivity and fostering better teamwork.





### What is the framework of Corporate Governance in India?

1. **Securities and Exchange Board of India (SEBI):** This regulatory authority oversees and regulates the corporate governance of listed companies.
2. **Ministry of Corporate Affairs:** The purpose is to regulate the functioning of the corporate sector in accordance with the law.
3. **Companies Act, 2013:** The Act governs board meetings, audit committees, disclosure requirements in financial statements, board constitution, and related party transactions.
4. **Institute of Chartered Accountants of India (ICAI):** The entity is responsible for establishing guidelines and standards, which guide the process of disclosing financial data.
5. **Institute of Company Secretaries of India (ICSI):** The organization is primarily responsible for issuing secretarial standards through Board of Directors Meetings and General meetings.

### What are the challenges for corporate governance in India?

1. **Lack of Separation of ownership and management:** Many companies are family-owned, leading to a lack of separation of ownership and management.
2. **Lack of independent directors:** This can result in conflicts of interest, lack of impartial evaluation, and influence-free decision-making.
3. **Low education and awareness:** There are a lack of education and awareness among investors regarding the significance of corporate governance principles.
4. **Limited scope of governance policies:** For example, SEBI has mandated the top 1000 listed companies to publish annual Business Responsibility and Sustainability reports, linking financial results with environmental, social, and governance frameworks.
5. **Lack of transparency:** The inefficiency of corporate governance practices is hindered by a lack of transparency in company operations and inadequate disclosures.
6. **Fraudulent practices and financial irregularities:** For example, the 2018 Infrastructure Leasing & Financial Services (IL&FS) scam involved fraudulent activities.
7. **Low risk prediction:** Companies are facing challenges in risk prediction and mitigation, with a lack of focus on sustainability parameters.
8. **Lack of participation:** The decision-making process is characterized by limited participation from minority shareholders and other stakeholders.

### What are the suggestions to improve Corporate Governance in India?

1. **Recommendations of Uday Kotak Panel:**
  - The requirement for listed entities to have at least one independent woman director is mandatory.
  - The recommendation is for increased transparency in the appointment of independent directors and for their active participation on the boards.
2. **Diverse boards are better boards:** The term 'diverse' encompasses a wide range of individuals, including those of different genders, ethnicities, skills, and experiences.
3. **Robust risk management policies:** The implementation of robust risk management policies enhances decision-making by providing a deeper understanding of the risk-reward trade-offs faced by all corporations.
4. **Effective governance infrastructure:** Organizational behavior should be based on ethical policies and procedures, ensuring a clear line of responsibility between the board and management.

### How Corporate Governance in India can be Improved?

1. **Diverse Boards are better Boards:** The term 'diverse' encompasses a wide range of individuals, including those of different genders, ethnicities, skills, and experiences.
2. **Robust Risk Management Policies:** The implementation of robust risk management policies enhances decision-making by providing a deeper understanding of the risk-reward trade-offs faced by all corporations.
3. **Effective Governance Infrastructure:** The board, responsible for an organization's actions and decisions, must establish clear policies guiding behavior and delegating responsibilities to management.
4. **Evaluation of the Board's Performance:** Boards should enhance their governance processes by addressing the shortcomings identified in their board evaluations.
5. **Communication:** The board should provide a contact person for shareholders to discuss any issues, facilitating effective communication with them.





## Conclusion

Corporate governance is crucial for company growth, and ethical culture is essential for successful business. Companies are morally obligated to implement ethical codes in their operations.

## 3.4 REGULATION OF CRYPTO ASSETS

### Context

- In September 2023, the G20 nations adopted the New Delhi Leaders' Declaration, which advocates for the effective regulation of crypto assets.
- The G20 leaders' declaration represents a consensus among all members, demonstrating their collective understanding.

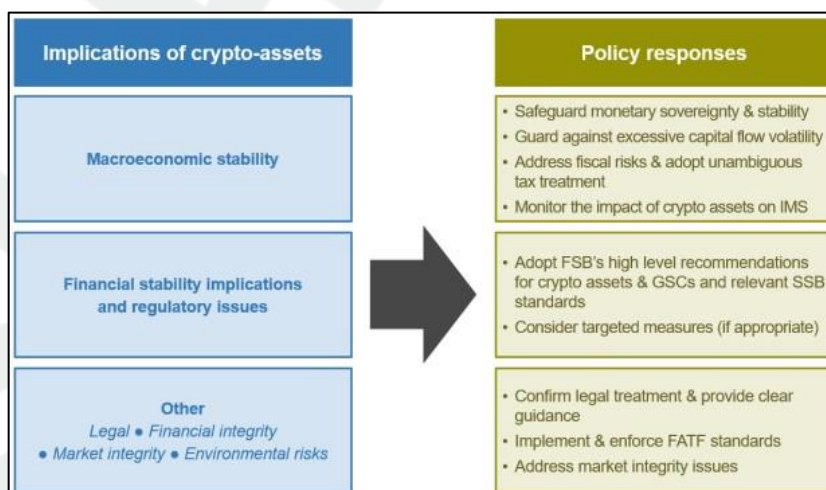
### What are crypto assets?

1. **About:** Crypto assets are digital assets that use public ledgers, cryptography, peer-to-peer networks, and distributed ledger technology (DLT) like blockchain to create, verify, and secure transactions.
2. **Different functions and characteristics:**
  - Use as a medium of exchange
  - A way to store value
  - For other business purposes.
3. **Operation:** Crypto assets typically operate independently of a central bank, central authority, or government.

### Implications of crypto-assets on the Financial Ecosystem:

#### 1. Macroeconomic stability:

- **Monetary policy:** The widespread use of crypto-assets could potentially undermine the effectiveness of monetary policy, as central banks would be unable to adjust foreign currency interest rates.
- **Fiscal Policy:** The widespread use of crypto-assets can heighten fiscal risks due to the financial sector's exposure, unclear tax regimes, and the cross-border nature of these assets.



#### 2. Regulatory issues:

Crypto-assets can pose significant challenges to legal, regulatory, and enforcement frameworks due to their varying regulatory powers and coverage.

- **For Example:** Crypto-asset activities in some jurisdictions may be non-compliance with domestic regulations, posing enforcement and supervisory challenges, while in others, they may fall outside existing regulatory boundaries, creating regulatory gaps.

#### 3. Legal risks:

Crypto-assets' potential for official currency or legal tender status could pose significant legal challenges due to their lack of recognition in certain countries.

- For example: Cryptocurrencies are recognized as legal tender in the Central African Republic (CAR) and El Salvador, while they are not in Algeria and Bolivia.

#### 4. Financial integrity:

Crypto-assets pose financial integrity risks due to their pseudonymous nature, speed, global reach, and weak implementation of anti-money laundering/counter-financing requirements.

- **For example:** The Islamic State of Iraq and Syria (ISIS) has received external donations for refugee camps through virtual assets, which are converted into cash via hawaladars, where they are subsequently sent to the camps.

#### 5. Market integrity:

Non-compliance with or lack of regulation for crypto-asset activities can potentially harm market integrity and the interests of market participants.





6. **Environmental risks:** The design of the supporting distributed ledger network has significant implications for the energy consumption of crypto-assets.
  - **For Example:** Bitcoin mining generates an annual byproduct of 38 kilotons of electronic waste.

#### What are the needs for regulations of crypto assets?

1. **Prevent misuse:** Regulations aim to prevent crypto misuse, safeguarding investor interests and integrating it into the broader financial system for the benefit of all stakeholders.
2. **Stabilizes operations:** Regulations for cryptocurrency transactions will enhance stability and trust, reducing volatility and fostering greater confidence in their use as a means of exchange.
3. **Consumer protection:** Cryptocurrency regulations are crucial in safeguarding consumers from financial crimes and fraud, ensuring they adhere to the necessary standards and regulations.
4. **Addressing unregulated asset class:** Cryptocurrencies, a relatively new and unregulated asset class, have been exposed to scams and other illicit activities.
5. **To create price volatility stability and reliability:** The crypto market's fluctuations are influenced by factors such as supply and demand, investor and user sentiments, government regulations, and media hype.
6. **Policy making:** Ensuring consistency in broader financial and economic policies.
7. **To address important issues:** Such as tax avoidance, money laundering and terrorist financing.

#### What are the Crypto regulations in India?

1. **Legal provision:** The Prevention of Money Laundering Act 2002 mandates mandatory KYC processes, reporting suspicious activities, and maintaining client details for five years in the exchange, transfer, safekeeping, or administration of cryptocurrencies.
2. **RBI's stance:** The Reserve Bank of India (RBI) has repeatedly raised concerns about crypto assets, stating that these assets pose a threat to financial stability.
  - **Regulatory Framework:** In 2022, the Ministry of Finance report suggests the creation of a digital rupee, a state-backed cryptocurrency, and a Digital Currency Regulatory Authority to regulate private cryptocurrencies in India.
  - **Tax regime:** The Union Budget in 2022 officially classified digital assets, including cryptocurrency, as "virtual digital assets" and proposed a flat 30-percent income tax on their transfer.
  - The Centre has announced an additional 1% tax deducted at source (TDS).

#### What are the challenges in Regulating Cryptocurrency?

1. **Blanket Ban:** Blanket bans on crypto-asset activities can be costly and technically challenging, while circumvention through technology solutions can mitigate financial integrity risks and create inefficiencies.
2. **Regulatory consistency:** The task of ensuring consistency in crypto regulations across different countries remains a complex one.
3. **Lack of jurisdictions:** Crypto-assets are classified differently across jurisdictions, leading to ambiguity in risk understanding and confusion for market participants.
4. **Fragmentation:** The lack of coordination among law enforcement agencies has resulted in fragmented monitoring, supervision, and enforcement.
5. **Balancing innovation and risk:** The delicate task of balancing innovation and risk mitigation remains a significant challenge.
6. **Cross-border enforcement:** The enforcement of regulations in a global, decentralized ecosystem and diverse national priorities presents significant challenges.

#### Way Forward

1. **Policy Linkage:** To understand the potential implications of crypto assets and develop appropriate policy responses.
2. **No Blanket ban:** The law prohibits crypto-related activities like trading, making them illegal and making them difficult to monitor.
3. **License and supervision:** The regulation of crypto asset service providers should be similar to that of financial institutions.
4. **Anti-money laundering:** Once licensed and regulated, service providers should implement measures such as customer due diligence, record keeping, and reporting of suspicious activities.
5. **Clarity on taxation:** G20 nations endorse Crypto Asset Reporting Framework (CARF) for cross-border data sharing, enhancing tax compliance by leveraging third-party information from intermediaries like crypto-asset trading platforms.



6. **Robust data framework:** Authorities should have the necessary and appropriate access to the data to fulfill their regulatory, supervisory, and oversight mandates.

Global Regulatory Approaches	Description
Principle based regulation	This regulatory approach outlines expected results and performance rather than prescribing detailed rules.
Risk based regulation	The concept of intervention is based on the level of risk associated with it.
Self- and co-regulation	Self-regulation involves industry representatives collaborating to create voluntary standards, while co-regulation involves a non-governmental organization assisting in enterprise regulation within a specific industry or sector.
Regulation by enforcement	Enforcement actions are being utilized to establish regulatory frameworks and establish rules.
Global Regulation of Crypto Assets	India's stand on Global Regulation
<ul style="list-style-type: none"> <li>• <b>IMF-FSB Synthesis Paper:</b> The G20 summit endorsed the International Monetary Fund (IMF) and the Financial Stability Board (FSB) report on crypto asset regulation, aiming for reporting and licensing mechanisms by 2025.</li> <li>• <b>Markets in Crypto-Assets Regulation (MiCA):</b> The European Union has established the first cross-jurisdictional regulatory and supervisory framework for crypto-assets.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>India led the IMF-FSB Synthesis Paper on Crypto Assets:</b> The paper discussed the potential systemic implications of crypto assets, cross-border challenges, and various regulatory approaches that can be implemented.</li> <li>• <b>Advocacy for inclusive regulation:</b> India has advocated for regulatory measures that promote financial inclusion, particularly for underprivileged groups.</li> <li>• <b>Risk Mitigation:</b> India's leadership has emphasized the need to tackle money laundering and terrorist financing through crypto assets in its crypto regulation.</li> </ul>

### 3.5 MANAGING FOOD INFLATION IN INDIA

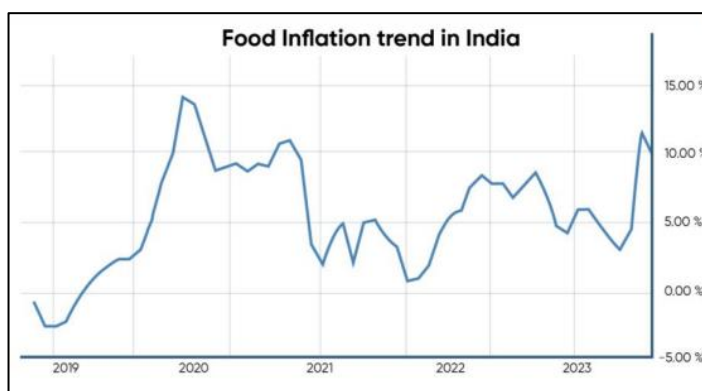
#### Context

In September 2023, the Indian Council for Research on International Economic Relations (ICRIER) estimated that banning cereal exports has cost farmers at least ₹45,000 crore.

#### Food Inflation in India

1. **Recent trend:** In August 2023, retail inflation reached 6.83%, while food inflation reached 9.2%, as per the Year-on-Year Consumer Price Index (CPI).

- The recent inflation is primarily attributed to the rise in food prices, which account for 45.9% of the CPI basket.





2. **Reasons:** Food inflation is primarily driven by the consumption of tomatoes, onions, cereals like wheat and rice, spices, and milk and dairy products.
  - Wheat inflation is a result of domestic factors like heat waves and unseasonal rains, as well as international price transmission issues like the Russia-Ukraine war.

#### What are the measures taken by the government to manage food inflation?

1. **Export restrictions:** The measures include export ban, export duty, and the imposition of Minimum Export Price (MEP). Some recent measures include:
  - The export ban has been imposed on wheat, broken rice, and non-basmati rice.
  - The export duty on parboiled rice is set at 20%, while a 40% duty is imposed on onions.
2. **Stock limits:** The imposition of stocking limits on wheat traders and millers has been implemented.
3. **Buffer Stocks:** The government utilizes the Open Market Sales Scheme (OMSS) to maintain buffer stock and offload it from it.
4. **Food Security scheme:** The Pradhan Mantri Garib Kalyan Ann Yojana aims to provide free food grains to over 80 crore beneficiaries.
5. **Direct support to farmers:** The support is provided through subsidies, income support, and procurement at the Minimum Support Price (MSP).
6. **Supply-side measures:** The focus is on enhancing agricultural productivity through marketing, strategic reserves, diversification, and value addition.

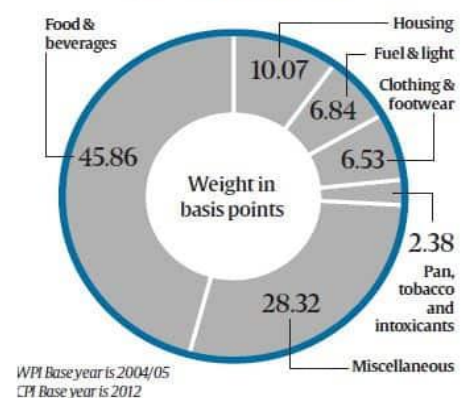
#### What are the concerns with the current food inflation management system?

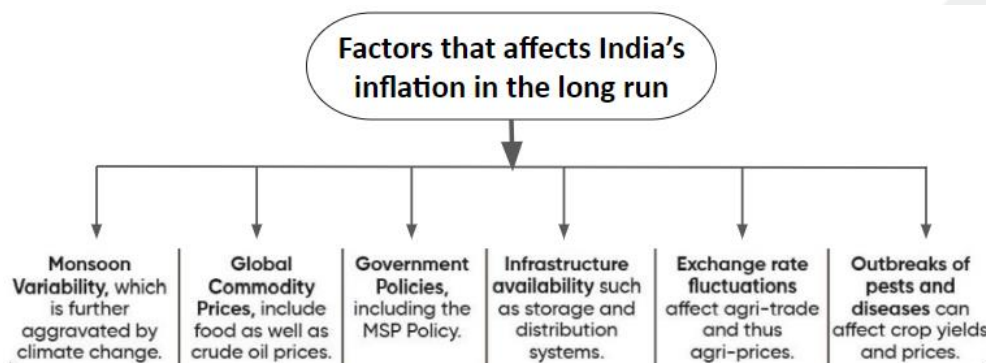
1. **Indirect tax burden on farmers:** ICRIER and OECD's research indicates that Indian farmers annually bear a substantial indirect tax burden of Rs. 2.65 lakh crores between 2000-01 and 2016-17.
2. **Dumping Effect:** The Indian government has accused the combination of an export ban and selling wheat in the open market at prices below the guaranteed MSP to farmers of "dumping".
  - Dumping occurs when the price of a product in the importing country is lower than the price in the exporting country.
3. **Loss of Farmers' Income:** Measures like export bans, OMSS, and stock limits aim to curb food inflation, but they result in a collective loss of farmers' income.
4. **Policy Bias:** The implementation of market-distorting policies in India suggests a bias in favor of consumers over farmers, affecting the food price policy.
5. **Global events:** India's sudden policy shift on rice exports, affecting global prices and endangering global food security, is threatening India's reputation as a reliable exporter.

#### Consumer Price Index (CPI)

- **About:** CPI inflation, also known as retail inflation, refers to the increase in the prices of goods and services that consumers purchase for personal use over time.
- **Purpose:** The measure computes the alteration in the cost of a typical basket of goods and services, including food, clothing, housing, transportation, and medical care.
- **Base Year:** 2011-12
- **4 Types:**
  - **CPI for Industrial Workers (IW):** compiled by the Labour Bureau in the Ministry of Labour and Employment.
  - **CPI for Agricultural Labourer (AL):** compiled by the Labour Bureau in the Ministry of Labour and Employment.
  - **CPI for Rural Labourer (RL):** compiled by the Labour Bureau in the Ministry of Labour and Employment.
  - **CPI for Urban Non-Manual Employees (UNME):** compiled by the National Statistical Office (NSO) in the Ministry of Statistics and Programme Implementation.

#### CONSUMER PRICE INDEX





#### Way forward

1. **Calibrated trade policy:** Trade policy can be adjusted to manage inflation by reducing import duties promptly, instead of implementing a protectionist approach.
2. **Income support to farmers:** The government plans to increase the annual income transfer to farmers under PM-Kisan from ₹6,000 to ₹10,000 to mitigate potential income losses.
3. **Increasing irrigation:** The expansion of micro irrigation infrastructure, including soil moisture sensors and drip irrigations, can significantly enhance irrigation coverage.
4. **Development of food processing:** Processed food can serve as a viable alternative to fresh produce during price pressure.
5. **Buffer Stocks:** Government should build buffer stocks for volatile vegetable staples like TOP (Tomato, Onion, Potato) during harvest season for stable prices during glut periods, and release these stocks systematically during lean periods or festive seasons.
6. **Research and Development (R&D):** The current investment in R&D, currently at 0.48% of agriculture GDP, needs to increase to boost productivity through innovative farming practices and drought-resistant seed varieties.

Consumer Price Index	Wholesale Price Index
<ul style="list-style-type: none"> <li>▪ It measures the change in the retail prices of goods and services</li> <li>▪ CPI releases on a monthly basis.</li> <li>▪ CPI includes both goods and services.</li> <li>▪ It includes about eight categories of products and services.</li> <li>▪ Base year is calendar year.</li> <li>▪ It calculates the final stage of inflation.</li> <li>▪ CPI is of importance to the general public</li> </ul>	<ul style="list-style-type: none"> <li>▪ It measures change in price of goods charged by whole seller.</li> <li>▪ WPI releases on a weekly basis</li> <li>▪ WPI includes only goods.</li> <li>▪ It includes primary articles, fuel &amp; power and manufactured goods.</li> <li>▪ Base year here is Financial Year.</li> <li>▪ It measures inflation in the first stage</li> <li>▪ WPI is of importance to those who keep track of wholesale prices.</li> </ul>





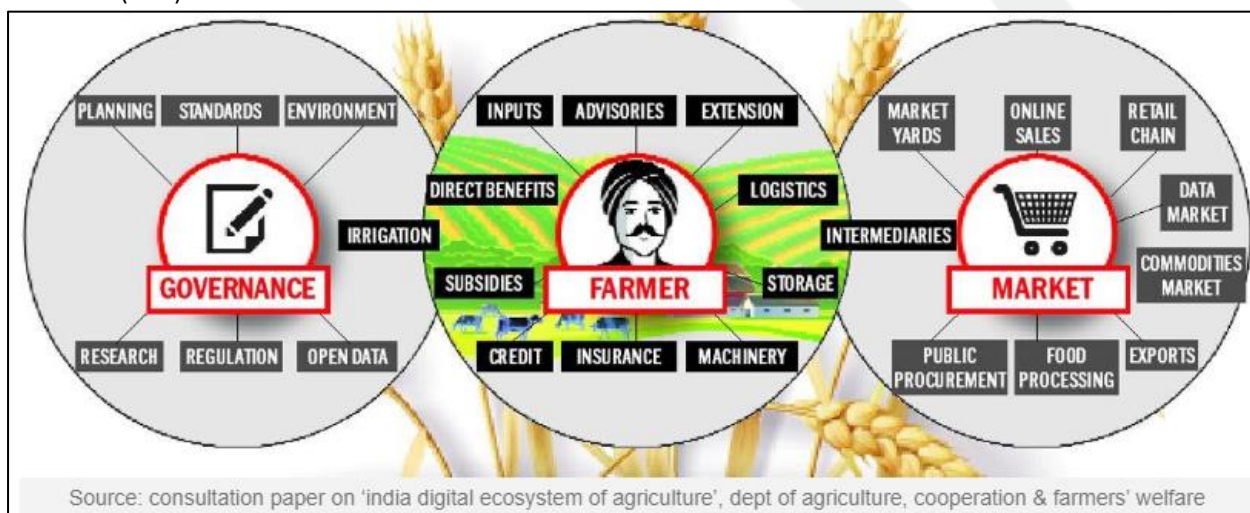
### 3.6 DIGITISATION OF AGRICULTURE

#### Context

In September 2023, the G20 Delhi declaration has committed to foster responsible, sustainable, and inclusive digital technology use by farmers and an ecosystem of Agri-Tech start-ups and MSMEs.

#### What is the Digitization of Agriculture?

- About:** Digitization of Agriculture refers to the integration of advanced digital technologies such as AI, robotics, unmanned aviation systems, sensors, and communication networks into farm production systems.
- Status:** India has a 40% contribution to farm mechanization compared to the US (95%), Brazil (75%) and China (57%).



#### What is the significance of Digitization of Agriculture?

- Improve Input Supply:** This aids in the timely optimization of input resources such as fertilizers, pesticides, and water. Ex: Use of AI with agricultural data.
- Improve Productivity:** The reduction of manpower and labor hours in farming leads to increased operational efficiency and decreased production costs. Ex: Sub Mission on Agricultural Mechanization (SMAM).
- Helpful in Trading:** The optimal price for a product can be achieved by eliminating middlemen, thereby increasing profitability. Ex: e-NAM.
- Enhance Warehousing:** This aids in scientific decision-making in farming activities, thereby reducing the burden of crop loss, low yield, and pest attacks. Ex: Electronic Negotiable Warehouse Receipt (e-NWR) - An Effective Tool for Promoting Pledge Financing (Getting credit by pledging crops as collateral)
- Improved Governance:** Enhance agriculture governance by utilizing data collected from various regions for the benefit of farmers and citizens. Ex: National e-Governance Plan in Agriculture (NeGP-A), India Digital Ecosystem of Agriculture (IDEA) framework.
- Social benefit:** Bridge the gender gap by promoting women-centric innovations, allowing them to participate equally in agricultural activities with men. Ex: PM-KISAN Mobile App - The scheme has included over 3 crore women farmers.

#### What are the challenges/ Issue/ Concerns in Digitization of Agriculture in India?

- Digital illiteracy:** Farmers are hesitant to adopt new agricultural technologies due to concerns over digital fraud cases on mobile devices.
- Lack of awareness:** The government's digital technology schemes and subsidies are not widely understood and utilized.
- High Capital requirement:** The high initial capital requirement poses a significant challenge for small and marginal farmers to acquire them.
- Fragmented landholdings** is a major concern for digitisation as it makes the scalability of a technology difficult.
- As per the latest Agriculture Census, the average size of operational holdings has decreased from 2.28 hectares in 1970-71 to 1.08 hectares in 2015-16.





6. **Fear of unemployment:** The fear of unemployment arises due to the potential reduction in the manpower needed for automation processes.
7. **Nascent stage of Agritech startups:** Currently, India has only 1% agritech startup penetration, largely due to challenges in securing funding and establishing a reliable customer base.
8. **Lack of infrastructure:** Rural areas are experiencing a lack of infrastructure, including access to electricity, internet, and machineries service centers.
9. **Limitations of available products:** The products have limitations such as a lack of regional language content, a user-friendly interface, and insufficient farm and farmer-level datasets.

#### What are the initiatives taken for digitisation of agriculture?

1. **Unified Portal for Agricultural Statistics (UPAg):** The platform is a sophisticated agricultural data management tool that aids in crop estimation and integrates with other systems for generating Agriculture Statistics.
2. **Kisan Rin Portal (KRP):** The system provides a comprehensive view of farmer data, loan disbursement details, interest subvention claims, and facilitates seamless integration with banks for efficient agriculture credit.
3. **Weather Information Network Data Systems (WINDS) manual:** The system uses advanced weather data analytics to provide valuable insights to stakeholders, enabling farmers, policymakers, and other agricultural entities to make informed decisions.
4. **YES-TECH:** The system is a technology-driven yield estimation tool that provides accurate assessments at the Gram Panchayat level, offering best practices and integration insights.
5. **National e-Governance Plan in Agriculture (NeGP-A):** The Ministry of Agriculture & Farmers Welfare sponsors this Centrally Sponsored Scheme aimed at accelerating India's agricultural development through the use of modern technologies.
6. **Digital Agriculture Mission (DAM) Initiative:** In September 2021, it was launched to assist agri-tech start-ups by utilizing advancements in cloud computing, earth observation, remote sensing, data, and AI/ML models.
7. **AgriStack:** The Ministry of Agriculture and Farmers Welfare plans to develop 'AgriStack', a collection of technology-based agricultural interventions.
8. **Unified Farmer Service Platform (UFSP):** It is a comprehensive system that integrates Core Infrastructure, Data, Applications, and Tools to facilitate seamless interoperability of public and private IT systems in the agriculture ecosystem.
9. **Sub-Mission on Agricultural Mechanization (SMAM) scheme:** The SMAM scheme, launched in 2014-15, aims to expand farm mechanization to small and marginal farmers, particularly in regions with low farm power availability.

## WHAT IS THE AGRISTACK?

The Report of the Committee on Doubling Farmer's Income, NITI Aayog's Discussion Paper on National Strategy for Artificial Intelligence, and the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020 all mention the use of electronic database for farmers meant to collect data about agriculture and use this to provide services to farmers.

### 1 WHAT DETAILS DOES IT COLLECT?

The data to be collected by the AgriStack includes: personal details, profile of the land held, production details, and financial details.



### 2 WHAT ARE THE PROPOSED BENEFITS?

1. Improved access to formal credit
2. Better quality of input
3. Smooth mechanism for marketing and price discovery



### 3 POTENTIAL ISSUES

1. Lack of consultations with farmer organisations
2. Algorithm based decision making will impact farmers' rights without transparency or accountability.
3. Incentives to harvest and process farm data for financial gain rather than benefit of farmers



### 4 HOW WILL THE LOSS OF PRIVACY IMPACT FARMERS?

1. Financial lending models relying on technology towards farmers may offer usurious rates for those in dire need.
2. There exist risks of exclusion which has been well documented by studies on Aadhaar linked welfare delivery systems
3. Algorithm based decision making may further reduce the agency of farmers



### 5 RECOMMENDATIONS

1. Understanding issues emerging from the leadership of farmer groups to include farmers in the decision making process
2. Necessity of long term study and advocacy to engage farmers effectively
3. Study the impact of a data protection law to ensure digital security and privacy





### Way forward

1. **Educate and Finance:** To enhance farmers' access to innovative products by providing education and financial support.
2. **Technological Advancement:** The focus is on producing technologies at an affordable price, allowing farmers to acquire them.
3. **Portable Hardware models:** The focus should be on small, plug-and-play hardware that can be shared among a group of farmers.
4. **Addressing fundamental issues:** Bridge the gap between academic institutes and field organizations to better comprehend and address the issues faced by farmers.
5. **Supporting Start-ups:** There is a need to provide improved financing options and incubation centers for Agritech startups to ensure their stability and sustainability.

### Conclusion

Digital technology in agriculture aims to promote innovation and sustainable practices, but its success requires holistic changes with varying benefits.

## 3.7 NATIONAL LOGISTICS POLICY (NLP)

### Context

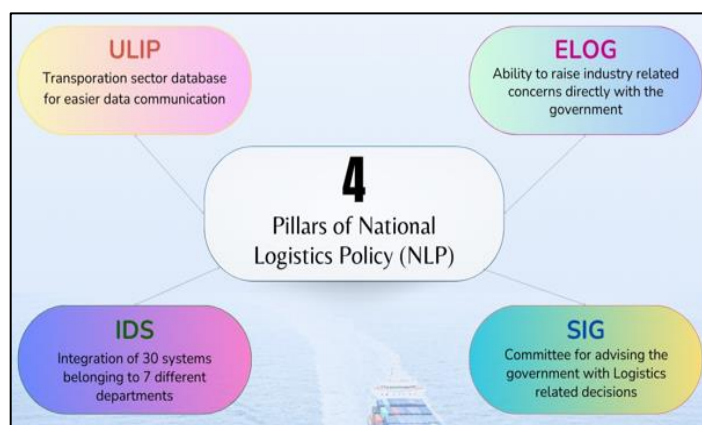
India celebrated the first-year anniversary of the National Logistics Policy (NLP) in September 2023.

### What is Logistics?

1. **Logistics:** The process of moving raw materials and finished goods from one point to another which is a crucial element of the overall supply chain.
  - This process encompasses various aspects of transportation and warehousing, including receiving, inventory management, demand planning, picking, packing, shipping, transportation management, and order fulfillment.
2. **Forward logistics:** This refers to the process of delivering goods from the manufacturer to the customers.
3. **Reverse logistics:** It involves the process of reintroducing products and materials back into the supply chain after delivery.
4. **Current Value:** The Indian Logistic Sector's current value in 2022 stands at \$259.5 billion.
5. **GDP:** India's logistic sector costs amount to 13-14% of the country's GDP.
6. **World Bank's Logistic Performance Index (LPI) 2023:** India has significantly improved its LPI ranking from 44th in 2018 to 38th in 2023.

### What is the National Logistics Policy (NLP)?

1. **About:** In September 2022, NLP was introduced to enhance the efficient movement of goods across India and enhance its competitiveness in both domestic and global markets.
2. **Origin:** The Finance Minister announced the National Logistics Policy (NLP) in the 2022-23 Union Budget.
3. **Nodal Ministry:** Union Ministry of Commerce and Industry.
4. **4 critical features:** The Comprehensive Logistics Action Plan (CLAP) will be utilized to implement four key features of the policy.
  - **Integration of Digital System (IDS):** The IDS integrate 30 systems from different departments: road transport, railways, customs, aviation, and commerce.
  - **Unified Logistics Interface Platform (ULIP):** The portal will consolidate all digital transportation services, simplifying exporters' processes and streamlining the transportation sector.





- **Ease of Logistics (ELOG):** E-Logs, a new digital platform, enables the industry to promptly address operational issues with government agencies.
- **System Improvement Group (SIG):** Regularly monitor all logistics-related projects and address any obstacles they may present.

#### 5. Policy targets:

- By 2030, the goal is to decrease logistics costs from 14-18% of GDP to 8% using global best practices.
- The goal is to enhance the country's Logistics Performance Index (LPI) ranking to be among the top 25 countries by 2030.
- The goal is to develop data-driven decision support systems (DSS) that will facilitate an efficient logistics ecosystem.



#### What is the Progress under NLP so far?

1. **Digitalization:** Over 614 industry players have registered on ULIP, and 106 private companies have signed Non-disclosure Agreements (NDAs).
2. **Export Import (EXIM) Logistics:** Ministry of Road Transport and Highways and Ministry of Railways have sanctioned 60 and 47 (respectively) projects aimed at enhancing last mile connectivity to ports.
3. **State Engagement:** 22 states have already disclosed their logistics policies.
4. **Issues and Grievance redressal:** Around 29 business associations have been urged to enhance good governance and stakeholder outreach in the logistics sector.

#### What are the Issues/ Concerns/ challenges in NLP?

1. **Segregated and decluttered sector:** The logistics sector in India is fragmented, with a lack of integrated digital logistics systems. Ex: Unorganized players control 90% of the market.
2. **Irregularity:** The absence of logistics standardization leads to interoperability issues, increased handling risks, and delays.
3. **Lack of skilled workforce:** The logistics sector, a labor-intensive industry, employs nearly 22 million people, with only 4.7% of these being formally skilled.
4. **Lack of coordination:** The lack of coordination between states in logistics is causing delays in shipments and increased costs.
5. **Digital Divide:** The lack of digital technology acceptance among transporters is attributed to issues of digital literacy and anti-competitive practices by transport unions.
6. **Lack of connectivity:** There are currently limited alternatives for first and last mile connectivity.

#### Role of States in Logistic Policy implementation

- To establish a dedicated agency for logistics development and enhance departmental coordination for single window clearances.
- To identify local logistics infrastructure requirements for the establishment of logistics zones, warehouses, and expressways to achieve last mile connectivity.
- To design and construct high-quality storage facilities that are tailored to the local landscape and industrial needs.
- To stimulate industries through subsidies such as Capital Interest Subsidy and Stamp duty subsidy.
- To enhance the adoption of logistic policy initiatives like PM Gatishakti by integrating quality data from various state master plans.
- To facilitate area-based development, identify gaps, and plan projects at the grass root level.

#### Way forward

1. **Regulatory compliance monitoring:** There is a need for the implementation of a roadmap and regular monitoring, focusing on gap assessment across sectors and the creation of a feasible solution.
2. **Enhancing India's Export Import (EXIM) connectivity:** by addressing infrastructure and procedural gaps, and establishing an efficient and reliable logistics network.
3. **Improving regulatory interface:** to facilitate seamless inter-sector collaboration, promote standardization, formalization, and interoperability.





4. **Sectoral Plans for Efficient Logistics (SPEL):** Develop SPEL in line with PM GatiShakti, focusing on interoperability, resiliency, and sustainability for each sector.
5. **Strengthening institutional framework:** to enhance state engagement by facilitating the creation of state and city-level logistics plans and establishing an institutional framework for their implementation.

#### **Other government Initiatives for India's logistics Sector**

1. **Multi Modal Logistics Park (MMLP):** The implementation of modern freight transportation systems, including aggregation and distribution hubs, road, air, railways, and waterways connectivity, customs clearance, warehouse management systems, and mechanized warehousing spaces.
2. **PM GatiShakti National Master Plan:** The project aims to establish roads and railway lines, facilitating efficient goods movement, providing real-time visibility, reducing costs, and improving business efficiency.
3. **Industrial corridors:** The aim is to enhance manufacturing clusters by linking them to ports and consumption centers through various transportation methods like roads, railways, and inland waterways.
4. **Sagarmala Project:** The Sagarmala Project aims to revolutionize India's logistics sector by harnessing the full potential of its coastline and waterways.
5. **National Logistics Efficiency and Advancement Predictability and Safety Act (NLEAPS):** The goal is to streamline logistics services, encourage digitization, and decrease logistics costs from 14% of GDP to less than 10%.
6. **Logistics division in the Department of Commerce:** The goal is to enhance current procedures by identifying and addressing bottlenecks and implementing technology-based interventions.
7. **Logistics Data Bank (LDB) Project:** The system uses Radio Frequency Identification (RFID) tags to monitor the movement of containers from rail or road to the container depot.
8. **FDI Investment:** 100% FDI through automatic route in the storage and warehousing sector.

## 3.8 INLAND WATERWAYS

### Context

In September 2023, the Standing Committee on Transport, Tourism and Culture submitted a report on the development and expansion of existing and new national inland waterways.

### What are the key observations and recommendations of the Committee?

#### 1. Operationalization of national waterways:

- **Observations:** The Committee observed that the following key factors discourage companies from shifting to inland waterways:
  - slow pace of development of waterways,
  - poor hinterland connectivity, and
  - high vessel and equipment costs.
- **Recommendations:** The Committee has recommended against the development of 63 national waterways due to financial and staffing constraints, as it is unviable. The Committee recommended the following key measures to facilitate a modal shift:
  - financial incentives to shippers, and
  - development of loading and unloading facilities at terminals

#### **What is Inland Water Transport?**

- **Inland Water Transport (IWT):** This mode of transportation is known for its fuel efficiency, environmental friendliness, and cost-effectiveness.
  - India boasts approximately 14,500 km of navigable waterways, including rivers, canals, backwaters, and creeks.
- **Constitutional and Legal provisions:** The Central Government only has jurisdiction over waterways that have been designated as National waterways; all other waterways continue to be under the control of the respective State Government.

#### 2. Intermodal connectivity for cargo movement:

- **Observations:** Connectivity of waterways with major ports, rails and roads would lessen the burden on these modes and reduce the logistics costs.
- **Recommendations:** In the case of newly notified waterways, connectivity with rail, road, and ports should be dealt with in the project planning stage itself.

#### 3. Low modal share of waterways:



- **Observations:** The modal share of waterways in India’s freight movement is about 2%, whereas the corresponding figure is 4% for USA, 14% for China, 48% for Vietnam, and 49% for Netherlands.
  - **Recommendations:** The Committee recommended the Ministry to come up with an action plan to harness the potential of waterways as a sustainable transit option and tourism product.
- 4. Impact on the environment:**
- **Observations:** While inland waterways have a low environmental impact during operations, their development alters the ecology of the river. For instance, dredging and construction on the national waterway-I disrupted the activities of Gangetic Dolphin.
  - **Recommendations:** Inland Waterways Authority of India (IWAI) should conduct environmental studies before the development of national waterways.
- 5. Tourism around waterways:**
- **Observations:** With a stretch of about 14,500 km of inland waterways, there exists potential for their development into tourist destinations.
  - **Recommendations:** The Committee recommends a mechanism for developing tourist destinations across waterways, collaborating with the Ministry of Tourism and state governments, focusing on regions like the North Eastern Region
    - The report recommends launching river cruise operations like Ganga Vilas to boost tourism and integrate waterways into public transport systems like Kochi Water Metro.
- 6. Increase in accidents:**
- **Observations:** The Committee noted an increase in accidents due to boat capsizing in the last two years. The reasons for such accidents are:
    - overloading of passengers,
    - poor quality of vessels, and
    - imbalance due to lack of proper weight distribution.
  - **Recommendations:** IWAI set up observational network facilities at regional, state, and local levels for safe navigation and proper implementation of warning systems.
- 7. Digital initiatives:**
- **Observations:** The Committee took note of the digital initiatives such as river information services to support safe navigation and traffic management.
  - **Recommendations:** IWAI should develop a similar mobile application to support small operators who may be unable to afford more sophisticated systems.

**Inland Waterways Authority of India**

- **About:** The IWAI Act-1985 establishes the statutory authority responsible for managing India's waterways, with its headquarters in Noida, Uttar Pradesh.
- **Origin:** The Inland Waterways Authority of India was established by the Indian Government in 1986 to develop and regulate inland waterways for shipping and navigation.
- **Nodal Ministry:** Ministry of Ports, Shipping and Waterways.
- **Objectives and Functions:** The authority focuses on building necessary infrastructure in waterways, assessing the economic feasibility of new projects, and managing administration.







### What are the Advantages/ Importance of Inland Water Transport?

#### Advantages of water transport

Low cost

Less fuel consumption

Less time-consuming

Large cargo capacity

Environment friendly

Safe mode of transport

- 1. Cost savings:** Waterways development in India can significantly reduce logistics costs, accounting for 13-14% of GDP, compared to the global average of 8%.
- 2. Environment friendly:** The vehicle offers the lowest fuel consumption per tonne-km, with a 50% CO2 emission rate, making it a safe mode for hazardous and over-dimensional cargo.
- 3. Strategic importance:** The North-Eastern Region faces connectivity challenges with mainland India due to poor road conditions, but the IWT system provides natural navigation channels.
- 4. Supplementary mode:** The reduction of road and rail pressure leads to decreased congestion and accidents on the road.
- 5. Tourism and Recreation:** Inland waterways serve as a hub for tourism and recreation, attracting visitors and generating income for local communities through activities like boating, fishing, and sightseeing.

### What are the Issues Concerns/ Challenges associated with the development of IWT?

- 1. No Navigability throughout the Year:** Around 20 out of 111 national waterways have been reported to be unviable due to seasonality and lack of navigability throughout the year.
- 2. Intensive Capital and Maintenance Dredging:** The identified waterways require significant capital and maintenance dredging, which may be opposed by the local community due to environmental concerns and displacement fears.
- 3. Other Uses of water:** Water has multiple essential uses, including living, irrigation, and power generation, and local governments must not overlook these competing needs.
- 4. Exclusive Jurisdiction of the Central Government:** The Central Government's exclusive jurisdiction only pertains to shipping and navigation on inland waterways declared as 'national waterways' by a Parliamentary act.
  - The use and sailing of vessels in other waterways fall under the concurrent list or the jurisdiction of the respective state governments.

### What are the Steps taken for Inland Water Transport?

- 1. Development of National Waterways (NWs):** The National Waterways Act, 2016, has declared 111 waterways across 24 states as NWs for the development of Inland Water Transport (IWT).
- 2. Jal Marg Vikas Project (JMVP):** The World Bank is providing technical assistance and investment support for the Jal Marg Vikas Project (JMVP), aimed at enhancing navigation capacity on NW-1.
- 3. Ro-Ro (Roll-on-Roll-off) and Ro-Pax (Roll-on/Roll-off with passenger):** Ro-Ro and Ro-Pax ferry services have been introduced in various national waterways, including between Neamati and Kamalabari, Guwahati and North Guwahati.
- 4. Revision of Levy & Collection of Fees:** The proposal to initially waive waterway user charges for three years is being considered for revision of levies and fee collection.
- 5. Digital solutions for ease of doing business:**
  - **CAR-D portal:** It is a web-based tool that collects, compiles, analyzes, and disseminates all cargo and cruise movement data of National Waterways to stakeholders.
  - **PANI (Portal for Asset & Navigation Information):** The platform combines river navigation and infrastructure information on a single platform.
- 6. Enhanced regional trade using IWT mode:**
  - The Indo Bangladesh Protocol on Inland Water Transit and Trade will see the addition of new ports of call and routes.
  - Bhutanese stone exporters have opted for Inland waterways as an alternative mode of transportation.
  - **IWT under Maritime India Vision 2030:** The Vision focuses on the enhancement and development of infrastructure at 23 priority NWs, as well as the development of terminal infrastructure for Ro-Ro & Ferry Services.



7. **IWT under Blue Economy Vision 2047:** The vision aims to improve regional connectivity through the Regional Waterway Grid (RWG) with Bangladesh, Nepal, Myanmar, and Bhutan.
8. **Promoting river cruise:** The world's longest river cruise, 'MV Ganga Vilas', has been officially launched.

#### Way forward

1. **Financial incentives:** Offer financial incentives and subsidies to encourage industries to transition their cargo transportation to inland waterways.
2. **Public-Private Partnership:** The private sector's active involvement in the inland waterways sector is crucial for increased efficiency, competitiveness, and investment in infrastructure development.
3. **Waterway Connectivity:** IWAI can ensure that the Detailed Project Report (DPR) comprehensively addresses the connectivity to rail, road, and ports.
4. **Environmental Considerations:** Research and development studies should be conducted to evaluate the effects of increased inland water transport activities on aqua-marine life.
5. **International Collaboration:** To collaborate with neighboring nations to develop transboundary waterways, thereby enhancing regional trade and connectivity.
6. **Promote river cruise:** The government should establish programs to incentivize river cruise operators to fully realize their potential like MV Ganga Vilas.

### 3.9 PM VISHWAKARMA SCHEME

#### Context

In September 2023, the Prime Minister initiated the 'PM Vishwakarma' Scheme for traditional artisans and craftspeople during Vishwakarma Jayanti.

#### What is PM Vishwakarma scheme?

1. **About:** It envisages to provide end-to-end holistic support to the traditional artisans and craftspeople in scaling up of their conventional products and services.
2. **Nodal Ministry:** Ministry of Micro, Small & Medium Enterprise (MoMSME).
3. **Objective:**
  - To acknowledge and acknowledge the contributions of artisans and craftspeople as Vishwakarmas.
  - To encourage digital empowerment of Vishwakarmas by providing incentives for digital transactions.
  - To offer a platform for brand promotion and market linkages, enabling businesses to access new growth opportunities.
4. **Type:** Central Sector Scheme i.e. 100% funded by the Union government and implemented by the Central Government machinery.
5. **Duration:** FY 2023-24 to FY 2027-28.
6. **Administration:** Jointly by MoMSME, the Ministry of Skill Development and Entrepreneurship (MSDE), and the Department of Financial Services (DFS) under the Ministry of Finance.
7. **Registration:** The PM Vishwakarma Portal, a biometric-based system, is available for free through Common Services Centres (a centralized collaborative framework for delivery of services to citizens).
8. **Recognition:** The PM Vishwakarma certificate and ID card will be used to recognize artisans and craftspeople.

#### Vishwakarma Jayanti or Vishwakarma Puja

- **About:** This is a significant Hindu festival that is celebrated for the worship of Lord Vishwakarma.
- **Important day:** The event occurs on the final day of Bhadra, also known as kanya Sankranti or Bhadra Sankranti.
- **States:** The festival is primarily observed in eastern India, specifically in West Bengal, Assam, Odisha, Tripura, Bihar, and Jharkhand, and also in Nepal.
- **Significance:** This festival is observed when factory and industrial workers worship their tools and pray to Lord Vishwakarma to ensure their livelihood security.
- **Mythological Significance:** Lord Vishwakarma, considered the creator of the world, is credited with the creation of Sthapatya Veda, a science focusing on architecture and mechanics.
  - Sthapatya veda is an ancient knowledge system that emphasizes the connection between people and their living and working environments.



9. **Approach:** The Guru-Shishya parampara, a family-based practice of traditional skills, is being strengthened and nurtured in both rural and urban areas, with a focus on saturating districts in a phased manner.
10. **Eligibility criteria:** An artisan or craftsman, aged 18 or older, engages in a family-based traditional trade using hands and tools.
- Beneficiaries must not have accessed loans under similar Central or State Government credit-based schemes for self-employment or business development within the past five years.
    - The PM Mudra Scheme or PM-SVANidhi beneficiaries can only apply for credit after repayment.
  - Government employees and their families are not eligible.
11. **Definition of a family:** A family is a group consisting of a husband, wife, and unmarried children.
12. **Required documents or information:** Aadhaar, mobile number, bank details, ration card.
13. **Lending institutions:** Scheduled Commercial Banks, Regional Rural Banks, Small Finance Banks, Cooperative Banks, NBFCs and Micro Finance Institutions.

#### What are the Benefits of Scheme?

1. **Marketing Support:** The National Committee for Marketing (NCM) will offer services including Quality Certification, Branding & Promotion, E-commerce linkage, Trade Fairs advertising, publicity, and other marketing activities.
2. **Collateral free Enterprise Development Loans:** The first tranche offers an 18-month repayment period of Rs 1 lakh, while the second tranche offers a 30-month repayment period of Rs 2 lakh.
  - **Concessional Rate of Interest:** The beneficiary will be charged 5% with an interest subsidy cap of 8%, which MoMSME will pay.
    - The Government of India is required to cover the credit guarantee fees.
3. **Skill Upgradation:** The training program offers basic training for 5-7 days and advanced training for 15 days or more, with a daily stipend of Rs. 500.
4. **Creating a holistic support ecosystem:** The development of a supportive ecosystem for the industry can be achieved through provisions like incentives for digital transactions and marketing support.
5. **Incentive for Digital Transaction:** The monthly fee for transactions is Re 1 per transaction, with a maximum of 100 transactions.
6. **Preserving Traditions:** The scheme embodies the concept of preserving heritage while embracing advancement.
7. **Promote Gender justice and social justice:** During the Seventh Plan period, the country had over 68.8 lakh crafts persons according to the census of crafts.
  - The majority of the pool, comprising over 72%, is women (56.13%) and socially and economically disadvantaged sections like SC, ST, and OBC.

**PM Vishwakarma**

Eighteen traditional trades will be covered in the first instance under PM Vishwakarma

- Carpenter (Suthar)
- Boat Maker
- Armourer
- Blacksmith (Lohar)
- Hammer and Tool Kit Maker
- Locksmith
- Goldsmith (Sonar)
- Potter (Kumhaar)
- Sculptor (Moortikar, stone carver), Stone breaker
- Cobbler(Charmkar)/ Shoemsmith/Footwear artisan
- Mason (Rajmistri)
- Basket/Mat/ Broom Maker/Cair Weaver
- Doll & amp; Toy Maker (Traditional)
- Barber (Naai)
- Garland maker (Malakaar)
- Washerman (Dhobi)
- Tailor (Darzi)
- Fishing Net Maker

**Cabinet Decision**  
16 August 2023

2/2

**Eligible Trades**

<b>Wood Based</b> Carpenter (Suthar) Boat Maker	<b>Gold/Silver Based</b> Goldsmith (Sonar)	<b>Architecture/ Construction</b> Mason (Rajmistri)
<b>Iron/Metal Based*/ Stone Based</b> Armourer Blacksmith (Lohar) Hammer and Tool Kit Maker Locksmith Sculptor (Moortikar, stone carver), Stone Breaker	<b>Clay Based</b> Potter (Kumhaar)	<b>Others</b> Basket/ Mat/ Broom Maker/ Cair Weaver Doll & Toy Maker (Traditional) Barber (Naai) Garland Maker (Malakaar) Washerman (Dhobi) Tailor (Darzi) Fishing Net Maker
	<b>Leather Based</b> Cobbler (Charmkar)/ Shoemsmith/ Footwear Artisan	

Note: (\*) Also includes manufacture of Bronze, Brass, Copper, Dias, Utensils, Figurines, etc.



### What are the Issues/ Concerns/ Challenges?

1. **Outdated data:** The final census of crafts was conducted during the Seventh Plan period, which ended in 2012.
2. **Caste-Based Occupations:** The scheme is criticized for potentially reinforcing caste-based occupations, potentially limiting community members' opportunities to pursue more lucrative careers.
3. **Non-Recognition of Guru (Master) as Trainer:** Under Guru-Shishya parampara, the Master imparted valuable training to new employees, which was not recognized as formal training under the scheme.
4. **Issue with Wages:** The gradual erosion of artisan communities is being exacerbated by low wages.
5. **Lack of economic viability:** Poor market coverage and quality concerns lead to lower product prices, resulting in a lack of economic viability for their output.

### Way forward

1. **Standards and certification:** To address the numerous non-tariff barriers that hinder the global market access to traditional crafts, thereby enhancing the value of their work.
2. **New Markets:** The integration of traditional artisans with modern techniques can potentially generate new domestic and international markets, similar to the success of the handloom sector.
3. **Social Security:** Addressing the root causes of poverty and inequality among artisan communities, including limited access to education and employment opportunities.

### Other government Initiatives for the Artisans

1. **National Handicraft Development Programme (NHDP):** It provides support to the handicraft clusters and artisans.
2. **Comprehensive Handicrafts Cluster Development Scheme (CHCDS):** It aims to mobilize the artisans into Self-Help Groups, thrift and credit, training of SHGs for community business enterprise.
3. **PEHCHAN scheme by the Ministry of Textiles:** to provide a new identity to handicraft artisans so that the benefits of various schemes are provided to the deserving artisans.
4. **Ambedkar Hastshilp Vikas Yojana:** This scheme offers artisans training and exposure to larger marketplaces for improved sales.
5. **Mega Cluster Scheme:** To improve the infrastructural and production chain in Handicrafts clusters, which have been unorganized and not keeping up with modernization and development.
6. **Export Promotion Council for Handicrafts:** It is a non-profit organization that promotes, supports, protects, maintains and increases the export of handicrafts.
7. **One District One Product:** To help districts reach their full potential, promote economic and socio-cultural growth, and create employment opportunities in rural areas.
8. **Atmanirbhar Hastshilpkar Scheme:** The scheme seeks to offer term loans to the regional artisans for the establishment, modernization, and other sector-related activities.
9. **Other Schemes:** Upgrading the Skills and Training in Traditional Arts/Crafts for Development (USTTAD); Scheme of Fund for Regeneration of Traditional Industries (SFURTI), etc.





### 3.10 NEWS IN SHORTS

#### 3.10.1 4TH G20 SUSTAINABLE FINANCE WORKING GROUP (SFWG) MEETING

- Context:** The G20 Sustainable Finance Working Group (SFWG) held its fourth and final meeting in Varanasi, Uttar Pradesh, under India's G20 presidency.
- Background of the SFWG**
  - The Green Finance Study Group was established in 2016 during China's G20 presidency.
  - In 2018, the group was renamed Sustainable Finance Study Group (SFSG) under the Argentinian Presidency, expanding its scope.
  - In 2021, G20 Finance Ministers and Central Bank Governors agreed to transform it into the G20 Sustainable Finance Working Group (SFWG).
- Objectives:** To promote sustainable finance for global growth, stability, and the transition towards greener, more resilient, and inclusive societies and economies.
- Challenges Identified by SFWG:**
  - Mobilization of adequate resources for climate finance**
    - The absence of clear and predictable public climate policy and regulatory frameworks is a significant issue.
    - Capital flows to climate investments are frequently limited due to the absence of investment-ready or bankable projects.
  - Rapid Development and Deployment of Green and low-carbon technologies**
    - Climate technology accelerators and incubators face challenges in terms of limited data and scalability.
    - The domestic policy and regulatory environments are experiencing uneven and uncertain conditions.
- Recommendations given by the SFWG:**
  - Mobilization of adequate resources for climate finance**
    - The policy and regulatory frameworks should be designed to facilitate the financing of climate-related bankable projects.
    - Encourages philanthropic foundations to collaborate with various international organizations, including Multilateral Development Banks (MDBs) and Development finance institutions (DFIs).
    - Implement proactive risk management strategies in climate projects to minimize investor risks.
  - Rapid Development and Deployment of Green and low-carbon technologies**
    - Governments should provide clarity on their long-term policy roadmap towards carbon neutrality and climate adaptation.
      - Encourage corporate investments in research and development (R&D) for climate innovation and climate technology startups.

#### 3.10.2 OFF-BUDGET BORROWINGS (OBBS)

- Context:** Centre for Social and Economic Progress (CSEP) released a report on 'Off-Budget Borrowings (OBB)' by Indian Governments.
- OBBs:** OBB refers to borrowings not included in the budget, despite repayment, and is not included in fiscal indicators despite their fiscal implications.
  - OBBs are managed by a public institution, not by the government directly.
    - For example, FCI has discontinued the practice of providing loans for paying food subsidy bills from FY 2020-21.
- Reasons for resorting to OBB**
  - The FRBM Act, 2003 allows individuals to bypass fiscal deficit targets.
  - Against exceeding the borrowing limits outlined in Article 293 (3) of the Constitution.
    - The article mandates states to obtain the Centre's consent before raising any outstanding loans or loans where the Centre is the guarantor.
  - To prevent delays in central grants or decrease other revenue sources.
- Ways of OBB:** National Savings Schemes Government Fully Serviced Bond, Domestic /Foreign Market borrowings, etc.



### 3.10.3 RBI'S FINANCIAL INCLUSION INDEX RISES

- Context:** The RBI's FI-Index, a measure of financial inclusion, reached 60.1 in March 2023, indicating significant growth across all parameters.
  - The FI increased from 56.4% in March 2022 to 60.1% in March 2023, compared to 43.4% during its pilot in March 2017.
- About RBI's FI-Index:** The index measures the extent of financial inclusion across the country, encompassing banking, investments, insurance, postal, and pension sectors.
- The range of financial inclusion is 0 (complete financial exclusion) to 100 (complete financial inclusion) and has been constructed without a 'base year'.
- The study tracks 97 indicators and categorizes them into three sub-indices:
  - Access (35% weightage),
  - Usage (45%) and
  - Equality (20%).
- Financial Inclusion:** FI is the process of guaranteeing that all individuals and marginalized groups have access to affordable and suitable financial services.
  - Significance of FI:** Promoting economic and sustainable growth, reducing poverty and inequality, empowering marginalized groups, and fostering innovation and small businesses are key benefits.
  - Challenges in ensuring FI:** Rural areas lack infrastructure, leading to financial illiteracy, procedural complications, and hidden charges that force marginalized individuals out of the formal system.

#### Initiatives taken by the government to improve financial inclusion

- Banking initiatives**
  - Regional Rural Banks (RRBs)
  - Priority Sector Lending
  - Business correspondents
  - No-frills accounts
  - KYC relaxation
  - Jan Dhan, Aadhaar and Mobile (JAM)
  - Establishment of payment banks and small finance banks.
  - Establishment of MUDRA bank
  - Self-Help Group (SHG) – Bank Linkage Programme (SBLP)
  - National Centre for Financial Education
- Social security Initiatives**
  - PM Suraksha Bima Yojana (PMSBY)
  - Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)
  - Atal Pension Yojana
  - Pradhan Mantri Jan Dhan Yojana

### 3.10.4 HOUSEHOLD FINANCIAL SAVINGS

- Context:** According to RBI data, India's household savings have touched decadal lows of 5.1% in FY23.
- Household savings:** These are calculated by dividing the total financial assets by the aggregate financial liabilities.
  - Liabilities:** This includes loans from banks and NBFCs, among others.
  - Assets:** This include deposits with banks, life insurance, provident funds, currency, and other investments.
- Significance of household savings:** Crucial for financing the fiscal deficit, providing investment capital, and reducing foreign capital dependence for growth.

### 3.10.5 MONETARY POLICY TRANSMISSION (MPT)

- Context:** A report by SBI indicates that monetary policy in Indian financial markets is characterized by asymmetric transmission.
  - MPT is **considered asymmetric transmission** if the economy does not show a positive correlation with changes in monetary policy.
  - For instance,** A 1% repo rate increase has led to a 2 to 3 basis point increase in the 10-year AAA corporate bond spread.
- Reasons for Asymmetry in Transmission**
  - The average cost of deposits is high due to competition from other financial institutions.
  - High level of non-performing assets.
  - The acquisition and servicing of customers are becoming more expensive.
  - The issue involves non-interest operating expenses and procedural issues in recovering dues.
  - The government has made significant borrowings.



- 3. Monetary policy transmission (MPT):** The process involves the central bank's policy actions being transmitted to achieve inflation and growth objectives.
- Monetary policy changes influence the economy's interest rates, which in turn impact economic activity and inflation.
  - The transmission of a rate change should be instantaneous.
  - The credibility of the Central Bank is enhanced by instant transmission.
  - In 2016, the Reserve Bank of India (RBI) introduced the marginal cost of funds-based lending rate (MCLR) system to enhance transmission.

### 3.10.6 BASEL-III CAPITAL FRAMEWORK

- Context:** The Reserve Bank of India (RBI) has introduced the Basel-III capital framework for All India Financial Institutions (AIFIs).
- Legal Provisions:** The RBI has imposed a capital adequacy ratio (CAR) requirement on AIFIs under Section 45L of the RBI, 1934, to be maintained by April 2024.
- Reason:** AIFIs are recognized as crucial institutions for facilitating credit flow to their respective economic sectors.
- Capital Adequacy Ratio (CAR):** The ratio compares a bank's available capital to its risk-weighted assets, indicating its ability to cover losses and maintain financial stability in challenging situations.
- Capital to Risk-weighted Assets (CRAR):** CRAR is a ratio that compares the value of a bank's capital (or net worth) against the value of its various assets weighted according to risk.
- Mandate applicable to AIFIs**
  - EXIM Bank (Export- Import Bank of India)
  - NABARD (National Bank for Agriculture and Rural Development)
  - NaBFID (National Bank for Financing Infrastructure and Development)
  - NHB (National Housing Bank)
  - SIDBI (Small Industries Development Bank of India)

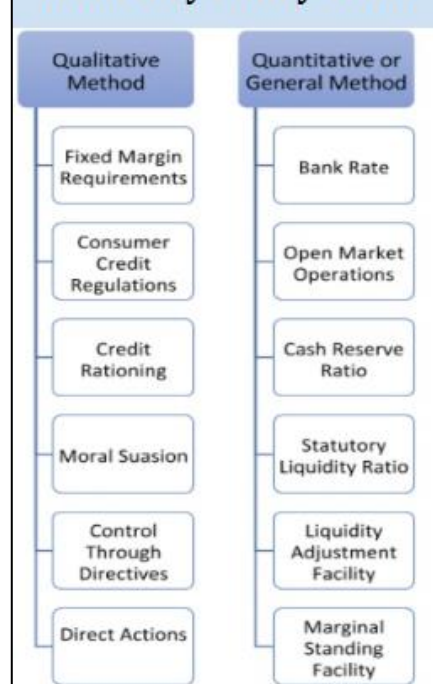
#### BASEL-III Norms

- **About:** Financial regulators adopted Basel-III norms to enhance the banking sector's capacity to handle financial and economic stress shocks.
- **Origin:** The Basel Committee on Banking Supervision developed it following the 2007-08 financial crisis.
- **Significance:** The regulation requires banks to maintain a Capital to Risk-weighted Assets (CRAR) of at least 8%.
  - The RBI has set a minimum CAR of 9% for banks.

### 3.10.7 LIQUIDITY DEFICIT IN THE BANKING SYSTEM

- Context:** The banking system's liquidity deficit reached its highest level since 2019, reaching ₹1.46 trillion.
- What is Liquidity?** It is the amount of cash and assets available to banks for short-term business and financial obligations, typically consisting of Central bank reserves and government bonds.
- Nodal Agency:** The Reserve Bank of India (RBI) manages liquidity in the banking system through the Liquidity Adjustment Facility (LAF).
- LAF:** The system is managed through Repo auctions for liquidity absorption and Reverse Repo auctions for liquidity injection.
- Liquidity deficit (LD):** Liquidity deficit (LD) is a financial issue where banks lack sufficient funds to meet customer credit demands.
- Reasons Behind LD**
  - The RBI has mandated banks to allocate an additional 10% net demand and time liabilities to absorb surplus liquidity.
  - Businesses are making advance tax and GST payments, leading to a shift of liquidity away from the banking sector.
  - The RBI is selling dollars and there is an increase in credit demand due to the festive season.

#### Monetary Policy Tools





### 7. Implication of LD:

- The increase in consumer interest rates.
- The rate of Treasury bills repurchases and overnight call money rates has increased.
- The availability of credit for developmental activities is decreasing.

### 3.10.8 INDIAN POST PAYMENT BANK (IPPB)

- Context:** The IPPB has recently completed 5 years.
- Origin:** In 2018, the IPPB was established under the Department of Posts and Ministry of Communication with 100% Indian government equity.
- IPPB:** The bank is licensed by the Reserve Bank of India (RBI) under the Banking Regulation Act, 1949, to operate as a payments bank in India.
  - The bank provides a variety of products including savings, current accounts, remittances, money transfer, and the Aadhar Enabled Payment System.
  - It provides three accounts: Safal (regular account), Sugam (Basic Savings Bank Deposit Account (BSBDA)), and Saral (BSBDA-Small).
- Vision:** The goal is to establish a bank that is easily accessible, affordable, and trustworthy for the common man in India.
- Mandate:** To promote financial inclusion by eliminating barriers and lowering the costs of accessing banking services.
- Achievements of IPPB**
  - Over 6 crore accounts have been opened across the country, with 96 lakhs in aspirational districts.
  - 1.90 lakh postmen and Gramin Dak Sevaks have been equipped with smart phones and biometric devices.
  - The Post Offices network PAN India has expanded to 1.55 lakh banking access points.
- Challenges:** Private companies, low financial literacy, and poor infrastructure in rural areas are major challenges faced by businesses.

## FINANCIAL INCLUSION GETS A LEG UP

### SMALL BANKS

- **Initial capital requirement:** ₹100 crore
- **Eligibility:** Entities and individuals must have 10 years of experience in finance and banking
- Existing microfinance companies, NBFCs can convert into small banks
- Large PSUs, industrial houses and NBFCs floated by them cannot apply
- **Promoter contribution:** Initially must be 40%; to be brought down to 26% over 12 years
- **Foreign holding:** Up to 74% of paid-up capital, on a par with private banks
- **Capital requirement:** Minimum capital adequacy ratio 15% with minimum Tier-I capital of 7.5%
- **Lending business:** Restricted to small businesses, marginal farmers. Priority sector lending target 75%. 50% of loanbook must be of those up to ₹25 lakh
- **Maximum exposure:** For single borrower, limited to 10%; group exposure, limited to 15%

### PAYMENTS BANKS

- **Initial capital requirement:** ₹100 crore
- **Eligibility:** Existing pre-paid payment instrument issuers, individuals, professionals, NBFCs, corporate business correspondents, telecom companies, super-market chains, real estate sector cooperatives that are owned and controlled by residents and public sector entities may apply
- **Promoter contribution:** Initially must be 40% for the first 5 years.
- **Foreign holding:** Up to 74% of paid-up capital, on a par with private banks
- **Capital requirement:** Must maintain CRR, minimum 75% of demand deposits in government bonds of up to one year and maximum 25% in current and fixed deposits with other scheduled commercial banks for operational purposes and liquidity management
- **Lending business:** Cannot lend
- **Deposit per customer:** Capped at ₹1,00,000

### WHAT PAYMENTS BANKS CAN DO

- Issue ATM/debit cards
- Offer payments, remittance services and distribute financial products like MF and insurance

### WHAT PAYMENTS BANKS CANNOT DO

- Issue credit cards

### WHAT SMALL BANKS MUST DO


- Must extend 75% of its Adjusted Net Bank Credit (ANBC) to sectors eligible for classification as priority sector lending by RBI
- At least 50% of loan portfolio should constitute loans and advances of up to ₹25 lakh

### 3.10.9 GRESHAM'S LAW


- Context:** The law, named after English financier Thomas Gresham, was implemented during Sri Lanka's economic crisis last year, regulating the exchange rate between the Sri Lankan rupee and the U.S. dollar.
- About Gresham's Law:** It asserts that in a fixed exchange rate system, "bad money drives out good."
- Reasons:** Undervalued currency is eliminated from circulation, while overvalued currency remains in circulation but lacks sufficient buyers.

## Gresham's Law

"Bad money drives out good."




**Good Cars**  
- worth \$15,000



**Lemons**  
- worth \$10,000

Which one should I buy? I can't tell which is good or bad.



Buyers afraid of buying a lemon drive down the average price for all used cars to \$12,000.

Many sellers of Good Cars leave the market and sell only to friends and relatives.

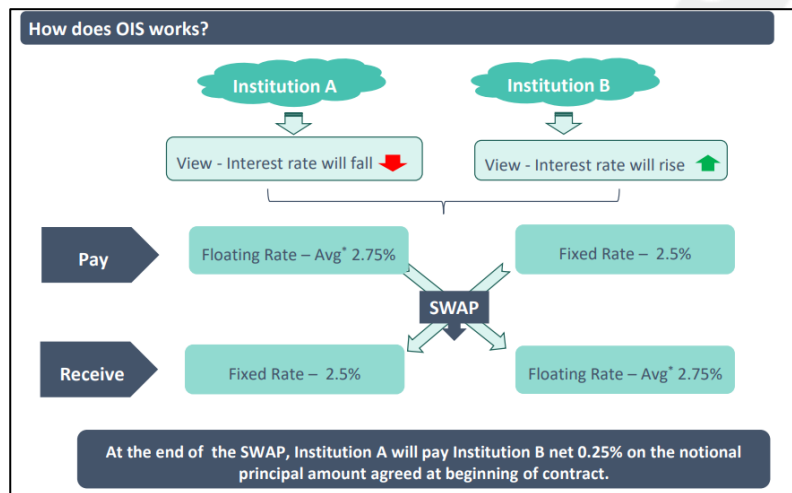




4. **Applicability:** This applies not only to paper currencies but also to commodity currencies and other goods.

### 3.10.10 OVERNIGHT INDEX SWAP (OIS)

- Context:** Indian OIS rates have reached their highest levels in the past decade.
- Overnight Index Swap:** An OIS is a contract where two parties agree to exchange a fixed interest rate payment for a floating interest rate payment.
  - OIS is a monetary policy expectation measure.
  - The floating rate is typically the overnight interbank rate, with the Mumbai Interbank Outright Rate (MIBOR) serving as the reference rate for Indian OIS contracts.



3. **Benefits of OIS:** Financial institutions are focusing on hedging interest rate risks, reducing credit risk, and effectively managing debt portfolios to mitigate potential risks.

### 3.10.11 DEBT MARKET

- Context:** Securities and Exchange Board of India has relaxed regulations for large corporates (LCs) that engage in the debt market.
- Significance:** The move will assist insurers, pension funds, and provident funds in complying with a specific percentage of their incremental receipts in corporate bonds.
- Measures proposed by SEBI include:**
  - The LCs are defined with a higher monetary threshold.
  - The penalty for limited liability companies (LCs) that cannot raise a certain percentage of borrowing from the debt market will be removed.

DEBT MARKET							
<p><b>DEBT MARKET</b> is a market place, where buying and selling of debt market financial instruments take place. These are fixed-income securities, giving fixed returns to the investors.</p>							
<p><b>WHO ISSUES</b></p> <ul style="list-style-type: none"> <li>Corporate or Companies</li> <li>Municipal Corporations</li> <li>State or Central Government</li> <li>Local Panchayats &amp; Local Bodies</li> <li>Banks and Financial Institutions</li> <li>Public Sector Undertakings</li> </ul>	<p><b>TYPES</b></p> <table border="1"> <tr> <th>Bonds</th> <th>Govt. Securities</th> <th>Debentures</th> </tr> <tr> <td></td> <td></td> <td> <ul style="list-style-type: none"> <li>Registered or Bearer Debentures,</li> <li>Secured and Unsecured Debentures,</li> <li>Redeemable and Non-Redeemable Debentures</li> <li>Convertible and Non-Convertible Debentures</li> <li>First and Second Debentures</li> </ul> </td> </tr> </table>	Bonds	Govt. Securities	Debentures			<ul style="list-style-type: none"> <li>Registered or Bearer Debentures,</li> <li>Secured and Unsecured Debentures,</li> <li>Redeemable and Non-Redeemable Debentures</li> <li>Convertible and Non-Convertible Debentures</li> <li>First and Second Debentures</li> </ul>
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<p><b>RISKS</b></p> <ul style="list-style-type: none"> <li>Credit Risk or Default Risk</li> <li>Interest Rate Risk</li> <li>Settlement Risk and Liquidity Risk</li> </ul>							
<p><b>ADVANTAGES</b></p> <ul style="list-style-type: none"> <li>Capitalizes and Mobilizes fund in economy</li> <li>Gives platform to govt, companies etc.</li> <li>Best when equity finance is costlier</li> <li>Fixed return with less risk</li> <li>Saves government bodies from cash crunch</li> <li>Such debt is also backed by assets</li> <li>Helps companies to boost expansion plans</li> <li>Helps govt to boost infrastructural projects</li> </ul>							
<p><b>DISADVANTAGE</b></p> <ul style="list-style-type: none"> <li>Fixed return ignores inflation rate.</li> <li>Premature redemption gives market price</li> <li>Interest Rate increase not considered.</li> <li>Difficulty in getting credit rating for issuer.</li> </ul>							

### 3.10.12 PLI SCHEME FOR AUTOMOBILE AND AUTO COMPONENTS (PLI-AUTO)

- Context:** The Production Linked Incentive (PLI) scheme for automobile and auto components has been extended to 2027-28, with the government shifting to quarterly incentives instead of an annual plan.
- About (PLI-AUTO):**
  - Nodal Ministry:** Ministry of heavy industries (MHI)
  - Objectives:** The goal is to manage the supply chain of Advanced Automotive Technology (AAT) products, including vehicles and components.
  - Base Year (BY):** The year 2019-20 will be used as the base year for calculating eligible sales for incentives.
  - Conditions for incentive:** The minimum domestic value addition requirement is 50%.
  - Effect on eligibility under FAME-II:** This scheme offers additional incentives to electric vehicle (EV) manufacturers in addition to the incentives provided under the FAME-II scheme.
  - Project Management Agency:** IFCI Limited is a non-banking finance company operating in the public sector.

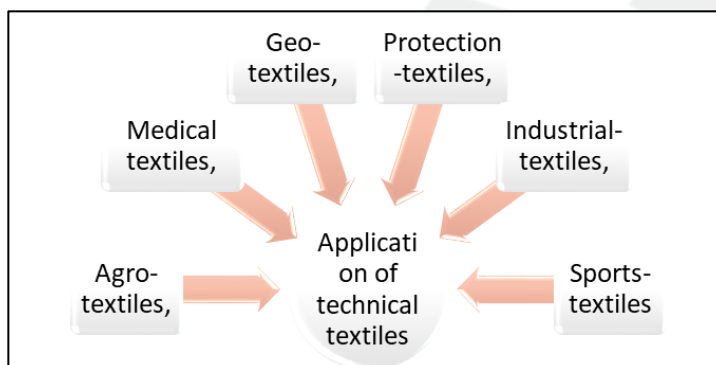
**Note:** The PLI scheme aims to provide up to 18% financial incentives to boost domestic manufacturing of advanced automotive technology products.



- **Achievements:**
  - The scheme has been applied to 95 companies.
    - The investment until June 30, 2023, is ₹10,755 crore out of a total outlay of ₹67,690 crore for the next five years.
- 3. **Current status:** The government aims to boost the automobile sector's contribution to India's GDP from 7.1% to 12% and increase employment generation from 37 million to 50 million.

### 3.10.13 TECHNICAL TEXTILES (TTS)

1. **Context:** The Ministry of Textiles has approved the Startup Guidelines for Research and Entrepreneurship across Aspiring Innovators in Technical Textiles (GREAT).



#### 2. Key highlights

- **Objective:** The project focuses on the creation of a startup ecosystem in Technical Textiles (TTs).
  - **Focus:** The market includes niche sub-segments like Biodegradable and Sustainable textiles, High-performance & Specialty fibers, and Smart textiles.
  - **Financial Aid:** Grant-in-aid programs are being provided to individuals and companies to help them convert prototypes into technologies and products, and then commercialize them.
    - Startups are eligible for a grant-in-aid of up to ₹50 lakhs for a period of 18 months.
    - Incubators will receive an additional 10% of the total grant-in-aid.
  - **Support to premier institutes:** IIT Delhi and NIFT Mumbai have received approval for upgrading laboratory infrastructure and introducing new degree programs in TTs.
3. **Technical Textiles:** TTs are textile materials designed for their technical performance and functional properties, rather than their aesthetic and decorative features.
    - TTs are categorized into 12 distinct fields, such as Agrotech, Oekotech, Buildtech, Meditech, and Geotech.

**CABINET DECISIONS**  
26 February 2020

**Making India a Global Leader in Textile Industry**

Creation of National Technical Textiles Mission

Mission to be implemented during FY 2020-21 to 2023-24 with an outlay of **₹1480 crore**

Mission to have 4 components:  
**R&D, Market Development, Export Promotion, Education & Skill Development**

**Focus on usage of technical textiles** in various flagship schemes of the government

Will bring an overall improvement in **cost economy & promote Make in India**

### 3.10.14 REPORT ON EMERGING TECHNOLOGY HUBS OF INDIA

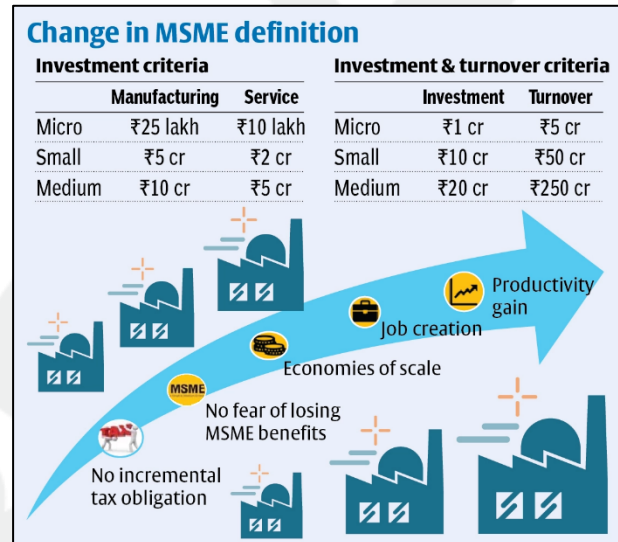
1. **Context:** As per Deloitte and Nasscom Report, India's IT industry is moving to new cities from 7 major hubs including metropolitan hubs.
2. **Key findings:**
  - The technology industry is undergoing decentralization to 26 cities, with representation from tier-2 and tier-3 towns like Chandigarh, Kanpur, and Ahmedabad.
  - The majority of 5.4 million technology industry workers are concentrated in seven major cities: Delhi, Mumbai, Kolkata, Chennai, Bengaluru, Hyderabad, and Pune.
  - 60% of graduates hail from smaller cities in key fields, while 30% relocate to tier-1 cities for employment post-graduation.
3. **Why are IT companies moving operations to emerging hubs?**
  - The real-estate cost in major hubs is expected to increase by 60-80%.



- Currently, 11-15% of tech talent is concentrated in tier 2 and tier 3 cities, offering better access to a skilled talent pool at lower costs.
- The rapid development of infrastructure, skill diversity, startup presence, and governmental initiatives like smart cities, tech parks, and incubation centers are driving innovation.
- The number of start-ups and incubators in emerging hubs is increasing, with 39% of tech start-ups established in 2022 coming from these regions.

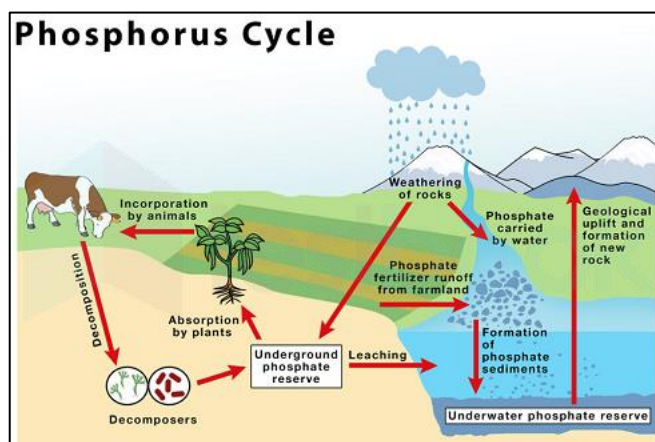
### 3.10.15 E-COMMERCE FOR THE GROWTH OF MSMEs

- Context:** Recently released ICRIER's annual survey on MSMEs highlights the impact of ecommerce on the growth of Micro, Small, and Medium Enterprises (MSMEs).
- ICRIER:** ICRIER, established in 1981, is a leading Indian economic think tank that provides policy advice to effectively manage external economic shocks.
- MSMEs in India**
  - The Udyam portal has registered approximately 19.3 million MSMEs, employing approximately 131.04 million individuals.
  - The Udyam portal offers MSMEs a permanent registration and basic identification number.
  - 27% of MSMEs are engaged in manufacturing, while 73% are in services.
- Challenges in integrating with E-Commerce sites:** The lack of knowledge and digital illiteracy, the absence of digital infrastructure, and the lack of access to skilled labor are significant issues.
- Significance of E-Commerce integration:** Successful integration with e-commerce platforms leads to increased sales, higher turnovers and profitability, and a higher percentage of permanent employees in integrated firms.



### 3.10.16 PHOSPHORUS DEFICIENCY IN INDIA

- Context:** The global phosphorus issue is gaining attention due to limited reserves, contamination, and market disruptions, prompting a need for sustainable solutions.
- Phosphorus:** This macronutrient is crucial for plant growth, facilitating photosynthesis, energy transfer, nutrient movement, strong root development, and genetic characteristics transfer.
- Why is phosphorus a non-renewable resource?** The planet's phosphate supply is restricted due to the scarcity of raw materials used in phosphoric acid synthesis.
- Status of India:** India is the world's largest importer of phosphorus, primarily from West Africa's cadmium-laden deposits.
  - Phosphate rocks are primarily produced in Rajasthan and Madhya Pradesh, two of India's most populous states.
  - Deposits are found in central peninsular India, Lalitpur (Uttar Pradesh), Mussoorie syncline, and Cuddapah basin (Andhra Pradesh).
- Concerns with Phosphorus availability:** Phosphorus often coexists with expensive heavy metal Cadmium, and countries like Morocco, Western Sahara, China, and Algeria control most phosphorus reserves, posing a major geopolitical concern.







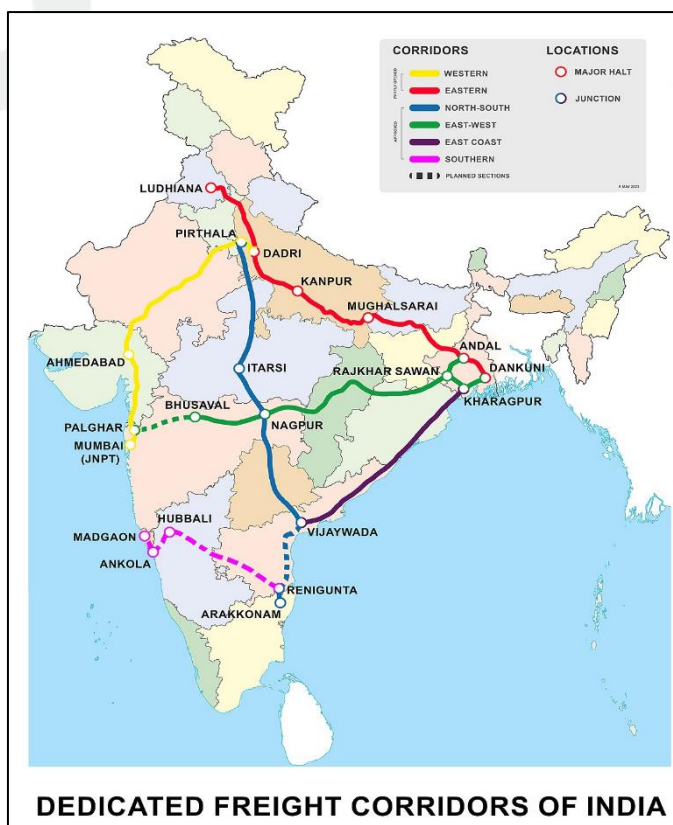
7. **Harmful effects of phosphorus:** Phosphorus loss due to agricultural run-off and sewage leads to toxic algal blooms, while cadmium-laden fertilizers are applied to soil, absorbed by crops, and consumed, accelerating heart disease.
8. **Ways to reduce phosphorus paucity**
  - Decrease the use of chemical fertilizers in precision agriculture.
  - Implementation of low input agro-ecological methods.
  - Mining urban sewage to extract phosphorus.

### 3.10.17 ASIAN PREMIUM

1. **Context:** Saudi Arabia reduced the premium on oil exports to India after India began sourcing oil from Russia at substantial discounts.
  - Saudi Arabia has reduced the premium for oil to \$3.5 per barrel from around \$10 in the previous year.
2. **What is Asian Premium?** The Organization of the Petroleum Exporting Countries has been collecting an extra charge from Asian countries when selling oil compared to Western countries since the 1980s.
3. **Reasons for the existence of Asian premium:**
  - Asian countries, heavily reliant on oil imports, were essentially price-takers.
  - Oil exporters utilized their significant bargaining power to control Asian oil imports while lowering prices for American and European customers.
  - Saudi Arabia and other Gulf states maintain military and political support by supplying a significant amount of oil exports to the U.S. and Europe.
  - The "Asian Premium" is essentially a "North Atlantic Discount".
4. **India's stand:** India has repeatedly urged oil producers to eliminate this premium and has even requested an 'Asian discount' instead.
  - India is diversifying its import sources to secure cheaper oil.

### 3.10.18 DEDICATED COAL CORRIDORS

1. **Context:** The Railway Board has stated that Dedicated Coal Corridors (DCC) are required to meet the power demand.
2. **DCC:** The high-capacity railway corridor is designed exclusively for coal transportation across the country, connected to Dedicated Freight Corridors.
  - The Delhi Coal Corporation (DCC) will exclusively transport coal from Odisha, Jharkhand, and Chhattisgarh to other parts of the country.
3. **Need of DCC:**
  - **Volume:** Coal traffic to thermal power plants is the most significant rail freight traffic, with congested networks causing significant delays in coal transportation.
  - **Cost:** India's coal reserves are primarily located in the eastern region, causing significant logistical costs due to the scattered consumption across the country.
  - **Energy requirements:** India's coal consumption and energy demand are projected to rise to 1,853 million tonnes and 3,000 billion units by 2030, posing significant challenges to its growth.



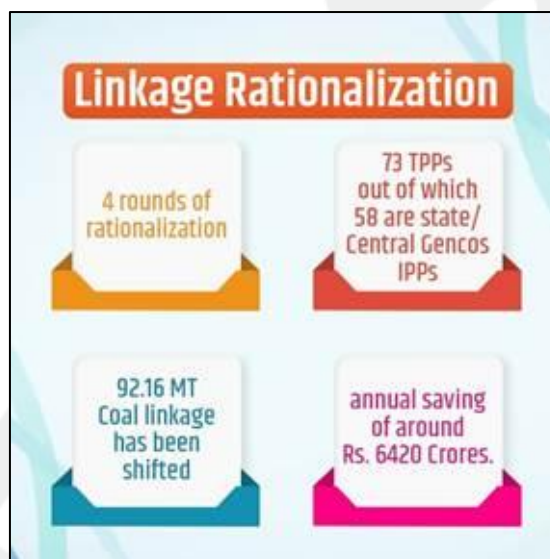




5. **Other issues:** The railway's low handling capacity, inadequate loading and unloading infrastructure, and the non-availability of wagons are contributing factors.
6. **Initiatives for coal transportation:**
  - The Ministry of Coal has released a draft Coal logistic policy for 2022, aiming to optimize coal transportation infrastructure at the origin and destination points.
  - Around 67 First Mile Connectivity (FMC) projects are currently being implemented.

### 3.10.19 RATIONALIZATION OF COAL LINKAGES

1. **Context:** The Ministry of Coal has initiated a policy initiative aimed at rationalizing the coal linkage.
2. **Objectives:** The initiative aims to decrease the distance of coal transportation from coal mines to consumers, thereby lowering transportation costs and enhancing efficiency in coal-based power generation.
  - Coal Power Stations (PSUs) are actively working towards a more sustainable energy ecosystem through this initiative.
3. **Current Status:** Four rounds of linkage rationalization have been conducted, covering 73 Thermal Power Plants thus far.
  - The decision has resulted in a rationalization of 92.16 million tonnes of coal, saving approximately Rs 6420 crores to the government.





## 4. SECURITY

### 4.1 BORDER INFRASTRUCTURE

#### Context

In September 2023, India's Defence Minister inaugurated several projects of the Border Road Organisation to enhance the country's border infrastructure.

#### More in News

1. The projects have been constructed in the border regions of 11 Indian states and union territories.
2. The border infrastructure includes airfields, tunnels, all-weather roads, fencing, and the construction of new railway lines.

#### What are the Important projects constructed under Border Infrastructure Developments?

1. **Devak Bridge:** The 422.9-meter long bridge in Jammu, located near the Indo-Pak international border, is situated on the Bishnah-Kaulpur-Phulpur Road.
2. **Nechiphu Tunnel:** The Nechiphu Tunnel, located on Balipara-Chariduar-Tawang Road in Arunachal Pradesh, will offer all-weather connectivity to the strategic Tawang Region, alongside the ongoing Sela Tunnel.
3. **Bagdogra and Barrackpore Airfields:** The airfields in West Bengal, costing over Rs 500 crore, will enhance the Indian Air Force's readiness and facilitate commercial flight operations in the region.
4. **Nyoma Airfield:** The airfield in Eastern Ladakh, estimated to cost around Rs 200 crore, will enhance the air infrastructure in Ladakh and enhance IAF's Northern border capability.

#### Border Roads Organization (BRO)

- **About:** Established in 1960, the organization is a major player in providing defense infrastructure such as roads, bridges, highways, airports, tunnels, and buildings.
- **Nodal Ministry:** Since 2015, it has been under the control of the Ministry of Defence.
- **Functions:** The BRO is focusing on road construction to enhance connectivity in challenging and inaccessible regions in the country's border areas.
  - The BRO operates in 21 states, one UT, and neighboring countries, maintaining over 32,885 km of roads and 12,200 meters of permanent bridges in the country.
- **Composition:** The organization consists of officers and troops from various branches of the Indian Army, including Corps of Engineers, Electrical and Mechanical Engineers, Army Service Corps, Military Police, and extra regimental personnel.

#### What are the Neighborhood Projects under Border Infrastructure Developments?

1. **Nepal:** The Motihari - Amlekhgunj Pipeline, South Asia's first cross-border petroleum products pipeline, is being built with Indian grant assistance over the Mahakali River.
2. **Bangladesh:** The Maitri Setu High Speed Diesel pipeline, in collaboration with Bangladesh, aims to decrease petrol prices and alleviate road congestion.
3. **Myanmar:** The Sittwe port project and the Kaladan Multi-Modal Transit Transport Project (KMTP) are significant initiatives in the transportation sector.
4. **Bhutan:** The Indian government is granting a grant to develop a dry port in Pasakha, which is located near West Bengal.

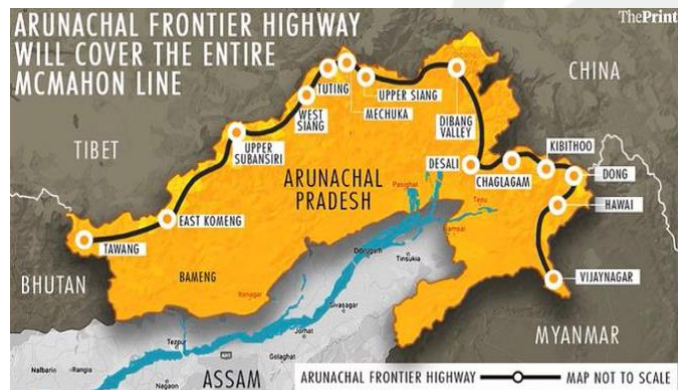
#### What is the Need/ Importance of Border Infrastructure Developments?

1. **To Address Porous borders:** India is grappling with persistent territorial and boundary disputes with China and Pakistan, as well as porous borders along challenging terrain.
  - **For example:** The ongoing standoff along the LAC since April 2020, resulting in clashes with the Chinese People's Liberation Army, has led to numerous skirmishes.
2. **Strengthening infrastructure:** India's borders face inadequate infrastructure despite border wars, with multiple military, para-military, and police forces operating in discord and lack of coordination.



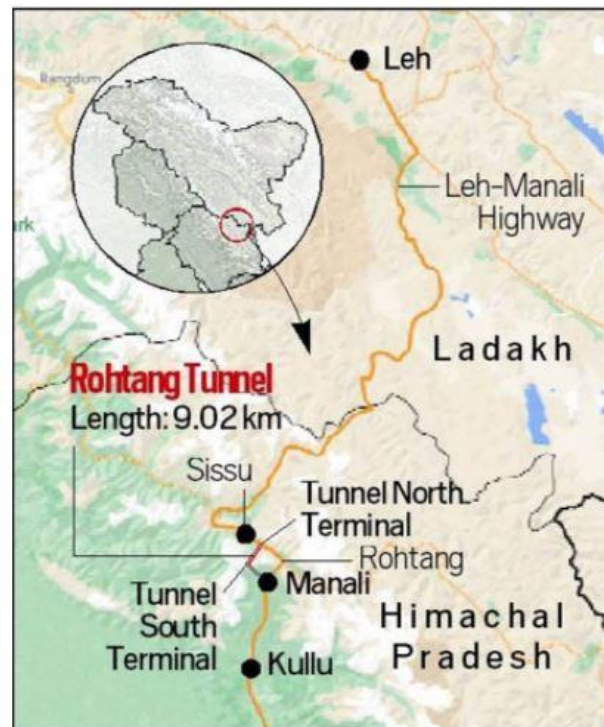


3. **Surveillance:** Smugglers, drug traffickers, and terrorists often take advantage of poor surveillance and infrastructure at borders.
4. **To Adopt Multi-Pronged Approach:** To enhance the connection to the Line of Actual Control (LAC) via roads, bridges, and tunnels.
  - To enhance cross-border connectivity between neighboring countries through various infrastructure such as highways, bridges, inland waterways, railroads, electricity lines, and fuel pipelines.
  - Modernizing and constructing Integrated Check Posts at border crossings to facilitate trade, as well as funding and constructing infrastructure projects in neighboring countries.



#### What is the Issue/ Concerns/ Challenges in creating border infrastructure?

1. **Challenging Geographical Terrain:** India's international border spans across various terrains such as marshy lands, salt pans, deserts, valleys, rivers, and forests.
2. **Political instability:** Political instability in neighboring countries like Pakistan can lead to border-related issues, causing mass migrations and other potential issues.
3. **Lack of cooperation:** The Lack of Coordination between Home Affairs and Defence Ministries has resulted in significant infrastructure delays in the border areas.
4. **Radicalization:** Economic underdevelopment in border areas often leads to the lack of essential infrastructure, making them potential hotspots for radicalization.
  - Ex: The northeastern states are grappling with ethnic conflicts and regional separatist forces, which pose significant challenges to the development of border infrastructure.
5. **Porous borders:** They facilitate criminal activities such as smuggling, human trafficking, drug and weapon trafficking, and infiltration in border regions.
6. **Environmental concerns:** Large infrastructure projects in ecologically sensitive areas may cause biodiversity damage, and highway projects within 100 km of India's "Line of Control" are exempt from environmental clearances.
7. **Lack of funds:** The Home Ministry's parliamentary committee is concerned about the underutilization of funds for border infrastructure and development programs.



#### What are the initiatives taken by the government to Strengthen Border infrastructure?

1. **Border Area Development Programme (BADP):** BADP, initiated during the Seventh Five Year Plan (1985-90), aims to balance development in western border areas by promoting infrastructure and security for remote, inaccessible populations.
2. **Comprehensive Integrated Border Management System (CIBMS):** Advanced surveillance technologies like thermal imagers, infra-red alarms, aerostats, ground sensors, radars, sonar systems, fiber-optic sensors, and a real-time command-and-control system are deployed to secure borders.
  - BOLD-QIT, a Border Electronically Dominated QRT Interception Technique, is being utilized under CIBMS on the Indo-Bangladesh border in Dhubri district of Assam.
3. **Vibrant Villages Programme:** The Vibrant Villages Programme, announced in the 2022-23 Budget, aims to address border villages with limited connectivity and infrastructure, including construction of infrastructure, housing, tourist centers, and livelihood support.





- Border Infrastructure and Management (BIM):** It is a Central Sector Umbrella Scheme which aims to provide better roads, electricity, and communication infrastructure along the border areas.
- Shekatkar Committee's recommendations:** The Committee's recommendations on border infrastructure, including outsourcing road construction, introducing modern construction plants, land acquisition, and obtaining statutory clearances, are being implemented.

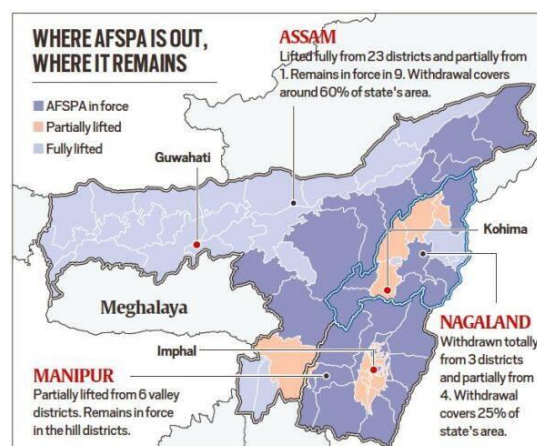
### Way Forward

- Ground level participation:** There is a need to involve local communities in border management, acting as observers and listeners for the forces, to enhance border surveillance.
- Strengthening open borders:** To decrease the distance between inter-border outposts across open borders to decrease trafficking, smuggling, and counterfeit currency cases.
- Strengthening Security forces:** To improve the efficiency of border security forces by upgrading their technology for effective patrolling and monitoring of the border region.
- Utilization of Technology:** Utilize technology like LIDAR, Laser Fencing, flood lightings, CCTVs, and drone surveillance to create a Border Protection Grid in every border state.
- Inventory Upgradation:** The current inventory of equipment and accessories is being continuously upgraded in line with the new project to ensure optimal utilization.
- Private sector participation:** Encouraging private sector participation in technological upgradation and maintenance of electronic and surveillance equipment is crucial.
- Collaboration with neighboring countries:** There is a need to foster cooperation with neighboring nations to develop mutually beneficial infrastructure projects and enhance economic and cultural exchange to strengthen relationships and foster trust.
- Improve connectivity:** The investment in telecommunications and transportation networks aims to enhance connectivity with neighboring nations.
- Adequate Investment:** Investment in physical infrastructure, including roads, bridges, and border infrastructure, is being continued in regions along the Chinese border.

## 4.2 NEWS IN SHORTS

### 4.2.1 ARMED FORCES SPECIAL POWERS ACT (AFSPA) 1958

- Context:** The Union Ministry of Home Affairs has extended AFSPA in parts of Nagaland and Arunachal Pradesh by another 6 months.
- AFSPA:** The law grants armed forces special powers to restore order in "disturbed areas," including the ability to open fire against individuals in violation of law, arrest, and search premises without a warrant.
- Key features of AFSPA:**
  - Disturbed areas:** A state or entire territory is declared disturbed when armed forces are required to restore order in conjunction with civil power.
    - The declaration is made by the Governor of state, the administrator of UT, or the Centre.
  - Immunity to Armed forces personnel:** The Central Government has previously sanctioned them, and they are prohibited from legal proceedings against them.
  - The 2016 Supreme Court decision stated that armed forces are not immune from investigation for excesses committed during their duties, even in disturbed areas.



### WHAT IS ARMED FORCES SPECIAL POWERS ACT?

➤ Introduced in 1958, AFSPA confers on members of the armed forces special powers to rein in suspects in areas declared "disturbed" on account of insurgent activities or similar threats. It has been in force in Manipur since 1980, and the alleged excesses committed under it are the reasons why activist Irom Sharmila has been on a hunger strike since 2000.

#### WHAT ARE SPECIAL POWERS?

AFSPA allows any commissioned officer, warrant officer and non-commissioned officer – or any other

person of equivalent rank – to:

➤ Fire upon or use force against any person acting 'in contravention of any law for the time being in force in the disturbed area'

➤ Arrest suspicious people without warrant

➤ Destroy any structure suspected to house an arms dump, shelter from which armed attacks are made or are likely to be made

➤ Conduct searches without warrants for evidence, to recover a wrongfully confined person or property or arms or explosives

➤ AFSPA bars prosecution or proceedings – except with Centre's nod – against personnel for action committed while exercising powers under the Act







- **Treatment of arrested person:** The army authority is obligated to promptly transfer the arrested person to the nearest police station officer.
  - **Applicability:** Parts of Assam, Manipur, Nagaland, and Arunachal Pradesh.
4. **Concern:** The issue of abuse of powers and human rights violations.

#### 4.2.2 PREVENTION OF MONEY LAUNDERING (MAINTENANCE OF RECORDS) RULES, 2005

1. **Context:** Ministry of Finance notified changes in the Prevention of Money Laundering (Maintenance of Records) Rules, 2005.
2. **Prevention of Money Laundering Act (PMLA):** The PMLA, enacted in 2002, aims to prevent money laundering and confiscate property involved in it, enforced by the Enforcement Directorate under the Department of Revenue.
3. **Objectives of the amendment:** The amendments aim to broaden the scope and nature of individuals who can be included in the Prevention of Money Laundering Act (PMLA).
4. **Key amendments**



- **Ownership rules:** A beneficial owner is someone who owns more than 10% of a partnership's capital or profits, up from the previous limit of 15%.
  - A person who gains control over a partnership through other means is considered a beneficial owner.
- **Definition of principal officer of a reporting entity (banking company, financial institution, intermediaries etc.):** The term 'Principal Officer' is now reserved for management-level officers, a change from the previous discretion of reporting entities.
  - Reporting entities are required to ensure that trustees disclose their status or position within a Trust.
  - Reporting entities are required to maintain client records for 5 years after the end of the business relationship or the closure of the account.

#### 4.2.3 FUGITIVE ECONOMIC OFFENDER (FEO)

1. **Context:** The Fugitive Economic Offenders Act has resulted in the recovery of assets worth over \$1.8 billion.
2. **Who is a Fugitive Economic Offender (FEO):** An arrest warrant has been issued against someone involved in economic offenses worth at least Rs. 100 crore and they have left India to avoid criminal prosecution.
3. **Current status:** Currently, only 10 individuals have been identified as fugitive economic offenders.
4. **Key features of the FEO Act, 2018:**
  - Scheduled offenses include counterfeiting government stamps or currency, cheque dishonor, defrauding creditors, and money laundering.
  - An application for declaring an offender will be filed in a Special Court under the Prevention of Money-Laundering Act, 2002.
  - The Enforcement Directorate (ED) serves as the primary agency responsible for enforcing the law.
  - The text allows authorities to confiscate assets even without a conviction.
  - The central government holds the rights and titles of confiscated property.
  - The High Court will be the venue for appeals against the orders of the special court.
5. **Challenges:** The lack of international cooperation on deportation and the complex legal structures of different countries and jurisdictions are significant issues.

### Dubious distinction

*Vijay Mallya became the first Indian to be declared a fugitive economic offender*

- The FEOA, which came into effect on July 25, 2018, allows for declaring a person an offender after an arrest warrant is issued and the value of offences exceeds ₹100 crore
- Another condition

is the refusal of the individual to return home to face prosecution

- A special court can order the confiscation of his/her properties



#### 4.2.4 TTPS-BASED CYBERCRIME INVESTIGATION FRAMEWORK

- Context:** IIT Kanpur developed TTPs (Tactics, Techniques, and Procedures)-based cybercrime investigation framework to enhance tracking and conviction of human-targeted cybercrimes like insurance fraud and matrimonial scams.
- Developed by:** IIT Kanpur developed this methodology and tool to understand cybercriminals' operations in the crime execution lifecycle, supported by Department of Science and Technology (DST) under National Mission on Interdisciplinary CyberPhysical Systems (NM-ICPS).
- Significance of framework:**
  - The task involves tracking and classifying cybercrimes.
  - The task involves identifying the necessary evidence chain to solve the case.
  - The task involves integrating evidence into the criminal justice system to convict offenders.
- NM-ICPS:** It aims to create technology platforms for R&D, translational research, product development, incubation and support of start-ups, and commercialization.

#### 4.2.5 SMISHING

- Context:** The Indian government has issued a warning against a new scam called 'Smishing', which combines SMS (short message service) and phishing.
- Smishing:** A social engineering attack uses fake mobile text messages to trick users into downloading malware, sharing sensitive information, or sending money to cybercriminals.
- Phishing:** It is a Cyber Attacks that exploit social engineering to deceive victims into paying money, sharing sensitive information, or downloading malware.
- The primary distinction between various types of phishing attacks lies in the method employed to execute them.

#### 4.2.6 SPAMOUFLAGE

- Context:** Meta has removed thousands of Facebook accounts that were part of the "Spamouflage" campaign.
- Spamouflage:** A widespread online Chinese spam operation praised China while criticizing the USA, western foreign policies, and critics of the Chinese government.
- Other campaign:** In 2022, Russia's campaign, named Doppelganger, was disrupted by mimicking European news websites and spreading bogus stories about Russia's war on Ukraine online.

#### 4.2.7 DEFENSE INDIGENIZATION

- Context:** The DAC has approved the acquisition of an Electronic Warfare Suite on Mi-17 V5 Helicopters from Bharat Electronics Limited under the Buy (IndianIDDM) Categories.
- Defence Acquisition Council (DAC):** It is the top decision-making body in defense procurement, with the Defence Minister as its chairman.
- Buy (Indian-IDDM) category:** This refers to the procurement of products from an Indian vendor with a minimum of 50% indigenous content, based on the total contract value.
  - The Defence Acquisition Policy, 2020 includes this category of procurement to enhance indigenous arms manufacturing.

Category	DPP 2016	DAP 2020
Buy (Indian-IDDM)	Min 40%	Min 50%
Buy (Indian)	Min 40%	Indigenous design – Min 50% Otherwise – Min 60%
Buy & Make (Indian)	Min 50% of Make	Min 50% of Make
Buy (Global – Manufacture in India)	Category did not exist	Min 50% of Buy plus Make
Buy (Global)	Category did not exist	Min 30% for Indian vendors



#### 4. Significance of Defence indigenization

- The importance of security and strategic imperatives in the face of hostile neighborhoods and evolving geopolitics.
- To enhance innovation and research in the field of defense.
- To decrease the current account deficit resulting from defense imports.

#### 5. Challenges: Short-term economies of scale issues require deep and sustained R&D in defense and interoperability of equipment.

#### 4.2.8 INFORMATION FUSION CENTRE - INDIAN OCEAN REGION (IFC-IOR)

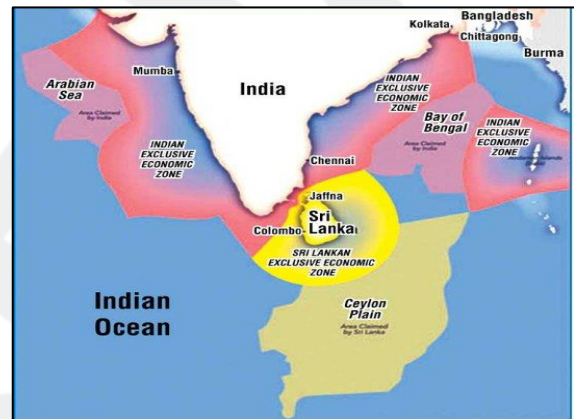
1. **Context:** The IFC-IOR hosted the Maritime Information Sharing Workshop in Delhi-NCR, marking a significant milestone in promoting collaboration among maritime security stakeholders in the region.

2. **Origin:** It was established in 2018 in Gurugram.

3. **Objective:** The objective is to improve maritime domain awareness and facilitate the sharing of information on vessels of interest.

4. **Region covered:** Indian Ocean Region and adjoining Seas.

5. **Significance:** The role is crucial in enhancing global efforts to combat maritime security threats such as piracy, armed robbery, contraband smuggling, and IUU fishing.



#### 4.2.9 'PRALAY' BALLISTIC MISSILES

1. **Context:** The Ministry of Defence has approved the acquisition of a regiment of Pralay ballistic missiles.

2. **About 'Pralay' Ballistic missiles:**

- **Type:** Capable of launching a surface-to-surface short-range ballistic missile.
- **Developed by:** Defence Research and Development Organisation - DRDO.
- **Operational range:** 150 to 500 kms
- **Payload capability:** 350 to 700 kgs of conventional warhead.

3. **Ballistic missiles:** A ballistic missile is a type of missile that uses projectile motion to deliver warheads to a target.

#### 4.2.10 MAHENDRAGIRI (Y - 12654)

1. **Context:** The seventh and last stealth frigate of Project 17A, Mahendragiri, was launched at Mazagon Dock Shipbuilders Limited (MDL) in Mumbai.

2. **About Mahendragiri:** The technologically advanced warship symbolizes India's commitment to preserving its rich naval heritage.

- The ship is named after the mountain peak Mahendragiri in Eastern Ghats, Orissa state.

3. **Project 17A Frigates:** The Project 17 Class Frigates (Shivalik Class) are being upgraded with enhanced stealth capabilities, advanced weapons and sensors, and advanced platform management systems.

- The Indian Navy's Warship Design Bureau has designed Project 17A ships in-house.

#### PRALAY: Surface-to-Surface Missile

Pralay is a canisterised tactical, surface-to-surface, and short-range ballistic missile for battlefield use developed by the Defence Research and Development Organisation of India

ENGINE: **Two stage** rocket motor with third stage MaRV

SPEED: **Mach 1 to 1.6**

RANGE: **150-500 km**

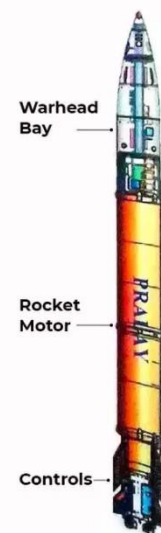
TRAJECTORY: **low**

GUIDANCE SYSTEM: Inertial navigation system

LAUNCH PLATFORM: **8x8 BEML-**Tatra transporter erector launcher

MASS: **5 tonnes** (4.9 long tons; 5.5 short tons)

OPERATIONAL RANGE: **150-500 km** (93-311 mi)



Can change its path after covering certain range mid-air and is difficult to be tracked

It is capable of being launched from a mobile launcher and has latest navigation system and integrated avionics

It has the **capability to defeat interceptor missiles**

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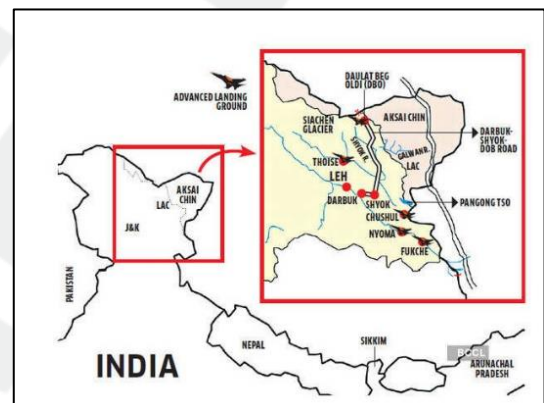


#### 4.2.11 OPERATION POLO

1. **Context:** The 75th anniversary of Operation Polo is being commemorated.
2. **About Operation Polo:** The Indian Army initiated a military action on September 13, 1948, aiming to integrate the princely state of Hyderabad.
3. **Reasons:** The operation was initiated due to Nizam Mir Osman Ali Shah's reluctance to join India post-Independence in 1947.
4. **Consequences:** In November 1947, the Nizam signed a standstill agreement with India, preventing immediate integration of Hyderabad and extending existing conditions for a year.
  - The operation was successful, and the Nizam announced a ceasefire on September 17, followed by the formal surrender on September 18, 1948.

#### 4.2.12 NYOMA AIRFIELD

1. **Context:** The foundation stone for Nyoma airfield in Eastern Ladakh laid by the Minister of Defence.
2. **Nodal Agency:** The Border Roads Organisation is set to construct India's largest fighter airfield in Nyoma.
3. **Nyoma village:** Nyoma, situated at 13,700 feet near the south bank of Pangong Tso, is approximately 46 kilometers from the Line of Actual Control.
4. **Significance of Nyoma airfield**
  - To enhance the air infrastructure in Ladakh and enhance the capabilities of the International Air Force (IAF) along the Northern border.
  - To counter China's strategy of Anti Access Area Denial (A2AD).
    - A2AD is a military strategy that restricts enemy movement on the battlefield by deploying various surface-to-air missile sites and long-range radars.



#### 4.2.13 EXERCISES IN NEWS

1. **Varuna:** The exercise is a bilateral competition between the Indian and French Navy.
  - **Other Indo-French Joint Exercises:**
    - Desert Knight-21 and Garuda (Air exercise)
    - Shakti (Army exercise)
2. **SIMBEX:** The Singapore India Maritime Bilateral Exercise (SIMBEX) is an annual naval exercise conducted between India and Singapore.
  - **Other Exercises with Singapore:**
    - Bold Kurukshetra (Army)
    - Joint Military Training (Air Force)
    - Trilateral Maritime Exercise SIMTEX (with Thailand).





## 5. ENVIRONMENT

### 5.1 UNESCO WORLD HERITAGE SITES

#### Context

According to new research, the **World Heritage Sites (WHS's)** account less than 1 % of the Earth's surface, but they harbour more than 20 % of the planet's biodiversity.

#### Key Points

1. The United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Union for Conservation of Nature (IUCN) conducted the research
2. They are estimated to protect over 20,000 endangered species.
3. WHS's have been described as last line of defense against extinction.
  - Played key role in protection of Javan Rhinos, Vaquitas (the world's smallest cetacean) and Pink Iguanas.
  - Also protected Sumatran Rhinos, Sumatran Orangutans and Mountain Gorillas.

#### World Heritage Sites (WHS) and Convention

World Heritage Sites	World Heritage Convention
1. It is any of the areas or objects inscribed on the UNESCO World Heritage List	1. It has been adopted as Convention Concerning the Protection of the World Cultural and Natural Heritage
2. These sites are designated as having outstanding universal value under the World Heritage Convention of 1972	2. <b>Principle:</b> Recognizes the way in which people interact with nature, and the fundamental need to preserve the 3. balance between the two.
3. There are total 1199 heritage sites under the Convention (as of 27th Sept, 2023).	4. <b>Parties and Implementing Agency:</b> 195 State parties including India and World Heritage Committee
4. Sites are selected under three categories i.e., cultural, natural, and mixed	5. <b>Strategic Objectives (Five Cs):</b> Credibility, Conservation, Capacity-building, Communication and Communities.
5. There are 42 World Heritage Sites in India. Out of these, 34 are cultural, 7 are natural, and one is of mixed type.	

#### World Heritage Sites are unique in conserving biodiversity

1. <b>Covers wide Horizon</b>	<ul style="list-style-type: none"> <li>• Deals with both natural, cultural heritage and mixed heritage sites. These are conferred the highest level of international protection. <b>E.g.,</b> Khangchendzonga National Park of India.</li> </ul>
2. <b>Regional Planning Programme (RPP)</b>	<ul style="list-style-type: none"> <li>• Parties are encouraged to integrate the protection of the sites into RPP. <b>E.g.,</b> National Biodiversity Strategies and Action Plans (NBSAPs)</li> </ul>
3. <b>World Heritage Fund</b>	<ul style="list-style-type: none"> <li>• It fulfils the urgent need during disasters or natural calamities</li> </ul>
4. <b>Reporting Mechanism</b>	<ul style="list-style-type: none"> <li>• Convention stipulates the obligation on Parties to report regularly to the World Heritage Committee (WHC) on the state of conservation of their World Heritage properties. <b>E.g.,</b> In Kaziranga National Park (India) and Chitwan National Park (Nepal), the population of Greater one-horned Rhinos has been doubled since their inscription on the UNESCO World Heritage List.</li> </ul>

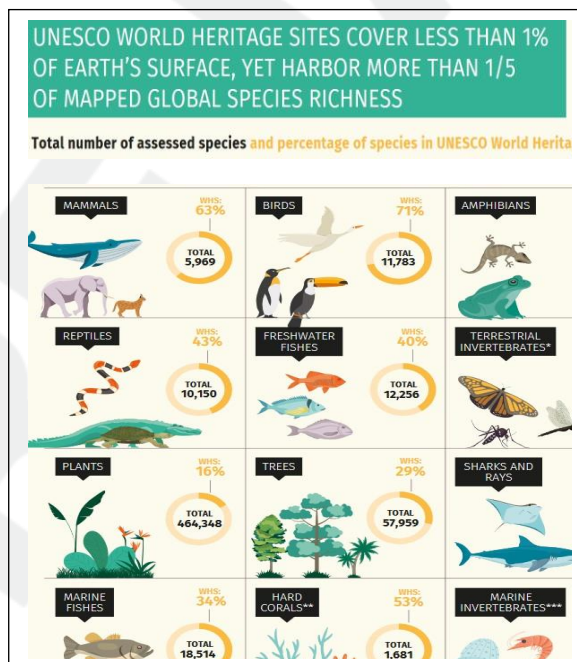


5. <b>Public Participation</b>	<ul style="list-style-type: none"> <li>Encourages States Parties to strengthen the appreciation of the public to enhance protection through educational and information programmes.</li> </ul>
6. <b>Policy Action</b>	<ul style="list-style-type: none"> <li>Facilitate dialogue between policymakers and World Heritage actors in the development and implementation of effective actions.</li> </ul>
7. <b>Balance between Nature and Culture</b>	<ul style="list-style-type: none"> <li>Strengthen the link between nature and culture, as many cultural sites, including those in urban areas are promoting biodiversity.</li> </ul>

**Challenges faced by World Heritage Sites**

- Decline in the population of the endangered species:** Either by natural factors such as disease or by human-made factors such as poaching. E.g., Tropical Rainforest Heritage of Sumatra.
- Development Activities:** It includes activities like construction of reservoirs which flood important parts of the property, industrial and agricultural development etc.
- Human encroachment also threatens the integrity of the sites. E.g., Lake Turkana National Parks in Kenya.
- Climate Change:** Every 1°C increase in global temperature could double the number of species threatened by dangerous climate conditions. Due to it, migration pattern, food availability etc. have changed.
- Funding:** World Heritage Fund is not able to fulfil need of all nations as many nations do not contribute on time.
- Armed conflict:** Along with rising frequency of disasters, heritage sites face brunt of armed conflicts.

E.g., UNESCO sites of Kyiv and L’viv are inscribed on the List of World Heritage in Danger due to Ukraine-Russia conflict.



**Conclusion**

WHS need to be given more protection and priority as they are playing key role in biodiversity conservation. It will play key role in achieving the target of **Kunming-Montreal Global Biodiversity Framework**.



## UNESCO

1. **Established** in 1945, as a specialised agency of the United Nations to promote international cooperation in education, sciences, culture, communication and information.
2. **Membership:** 194 Members including India and 12 Associate Members.
3. **Structure:** Secretariat, headed by Director-General, implements the decisions of General Conference and Executive Board
4. **Functions**
  - Attaining quality education for all and promoting lifelong learning
  - Mobilizing scientific knowledge and policy for sustainable development
  - Addressing emerging social and ethical challenges
  - Fostering cultural diversity, intercultural dialogue and a culture of peace
  - Building inclusive knowledge societies through information and communication
5. **Key Initiative/Other Information**
  - **Man and Biosphere Programme (MAB), 1971:** MAB is an Intergovernmental Scientific Programme that aims to establish a scientific basis for the improvement of relationships between people and their environments.
  - **Budapest Declaration on World Heritage (2002):** Adopted to ensure that the World Heritage Convention applies to heritage in all its diversity. It is an instrument for the sustainable development of all societies through dialogue and mutual understanding.
  - **UNESCO strategy for gender equality** in and through education 2019-2025
  - It is also a member of United Nations Sustainable Development Group (UNSDG).
  - All Member States have established a National Commission for UNESCO.

## 5.2 INVASIVE ALIEN SPECIES

### Context

On 4 September, 2023 Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) has released the '**Assessment Report on Invasive Alien Species and their Control**'.

### Key Findings

1. This comprehensive study sheds light on the **alarming proliferation of invasive alien species worldwide** and their **devastating impact on global biodiversity**
2. The report analyzes the extent of the threat posed by such species to various categories of biodiversity and ecosystem services.
3. It assesses the effectiveness of current international, national and subnational control measures and associated policy options that could be employed to prevent, eradicate and control invasive alien species.
4. The report reveals the **presence of approximately 37,000 alien species**, introduced by **human activities**, across various regions and biomes.
  - Of these, more than **3,500 are classified as invasive alien species**, posing severe threats to local ecosystems.
5. The **water hyacinth ranks as the world's most widespread invasive alien species on land**.
6. **Lantana, a flowering shrub**, and the **black rat** hold the second and third positions on the global invasion scale.
  - The **brown rat and house mouse** are also widespread invaders.

### Perceived Benefits vs. Negative Impacts

1. Many invasive alien species were intentionally introduced for perceived benefits in sectors such as **forestry, agriculture, horticulture, aquaculture, and as pets**.
2. However, their **negative impacts on biodiversity and local ecosystems** were often not considered.
  - Invasive alien species have played a **significant role in 60% of documented global plant and animal extinctions**.
  - These species are now recognized as **one of the five primary drivers of biodiversity loss**, alongside **land and sea use change, direct exploitation of organisms, climate change, and pollution**.



### Regional Distribution

1. **34% of the impacts of biological invasions were reported from the Americas**, 31% from Europe and Central Asia, 25% from Asia and the Pacific, and about 7% from Africa.
  - The majority of negative impacts occur on land, especially in forests, woodlands, and cultivated areas.
  - **Invasive alien species are most damaging on islands.** On more than 25% of all islands, the number of alien plants now exceeds the native plants.
  - 85% of the impacts of biological invasions on native species are negative.

### About Invasive Alien Species

1. Invasive alien species, **also known as invasive exotic species or non-native species**, refer to organisms that have been introduced to regions or ecosystems outside of their native range and have established self-sustaining populations.
2. These species often outcompete native species and disrupt the balance of ecosystems, leading to a range of negative impacts.
3. Alien species are animals, plants, and other organisms that have been introduced by human activities to new regions.
  - All Alien species are not invasive species.
4. As per the report, invasive alien species are one of the five major direct drivers of biodiversity loss globally, alongside land and sea use change, direct exploitation of organisms, climate change, and pollution.
5. **Common characteristics of invasive alien species include:**
  - Rapid reproduction and growth
  - High dispersal ability
  - Ability to adapt physiologically to new conditions.
  - Ability to survive on various food types and in a wide range of environmental conditions.

#### Initiatives against Invasive Alien Species

- **Target 6 of Kunming-Montreal Global Biodiversity Framework** aims to eliminate, minimize, reduce and or mitigate the impacts of IAS on biodiversity and ecosystem services by 2030.
- **Global Invasive Species Programme (GISP):** It was established in 1997 to address global threats caused by Invasive Alien Species and to provide support to the implementation of Article 8(h) of the **Convention on Biological Diversity (CBD)**.
  - **Article 8 (h)** of CBD calls to prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species.
- **Global Register of Introduced and Invasive Species (GRIIS)** presents validated and verified national checklists of introduced (alien) and invasive alien species at country, territory, and associated island level.
- **Ramsar Convention:** Ensure that the impact on wetlands from invasive species is prominently addressed.
- **United Nations Convention on the Law of the Sea (UNCLOS):** States are required to protect and preserve the marine environment from intentional or unintentional introduction of alien species.

### Reasons for the growth of Invasive Alien Species

Reason	Description
1. <b>Lack of legislation</b>	<ul style="list-style-type: none"> <li>● 83 per cent of countries do not have national legislation or regulations directed specifically toward the prevention and control of invasive alien species.</li> <li>● Nearly half of all countries (45 per cent) do not invest in the management of invasive alien species</li> </ul>
2. <b>Human activities</b>	<ul style="list-style-type: none"> <li>● Many human activities facilitate the transport, introduction, establishment and spread of invasive alien species.</li> <li>● It is estimated that, by 2050 the total number of alien species globally is expected to be about 36% higher than in 2005.</li> </ul>
3. <b>Global Trade</b>	<ul style="list-style-type: none"> <li>● There is a strong link between the volume of commodity imports and the number of invasive alien species in a region.</li> <li>● Increasing international trade of exotic plants and animals and the movement of people, including tourism, facilitate the spread of invasive alien species.</li> </ul>
4. <b>Climate change</b>	<ul style="list-style-type: none"> <li>● Climate change facilitates the spread and establishment of many alien species and creates new opportunities for them to become invasive.</li> </ul>





### Impact of Invasive Alien Species

Impact	Description
<b>Environmental damage</b>	<ul style="list-style-type: none"> <li>• They have devastating effects on native plant and animal species, leading to human-wildlife conflicts. <ul style="list-style-type: none"> <li>▪ Invasive alien plants, especially trees and grasses, can sometimes be highly flammable and promote more intense fires.</li> </ul> </li> <li>• 60% of global extinctions have been caused, solely or alongside other drivers, by invasive alien species.</li> </ul>
<b>Food Security</b>	<ul style="list-style-type: none"> <li>○ Invasive species are the major cause of crop loss and degraded soil quality.</li> </ul>
<b>Social Impact</b>	<ul style="list-style-type: none"> <li>○ They negatively affect the autonomy, rights and cultural identities of Indigenous Peoples through the loss of traditional livelihoods and knowledge, reduced mobility and access to land, and increased labour to manage the invasive alien species. <ul style="list-style-type: none"> <li>• More than 2,300 invasive alien species are found on lands of Indigenous Peoples across all regions of Earth.</li> </ul> </li> </ul>
<b>Health</b>	<ul style="list-style-type: none"> <li>○ Invasive alien species can serve as vectors for infectious zoonotic diseases that can lead to epidemics, such as malaria, dengue fever, chikungunya, Zika, yellow fever etc</li> </ul>
<b>Economic burden</b>	<ul style="list-style-type: none"> <li>○ The global economic cost of invasive alien species exceeded \$423 billion annually in 2019, with costs having at least quadrupled every decade since 1970.</li> </ul>

### Way Forward

Building on the guiding principles agreed to by the Conference of Parties under the Convention on Biological Diversity, the Global Strategy on Invasive Species has identified ten strategic responses to guide policy maker to address the growing problem of Invasive Alien Species. The strategies are **(i)** building management capacity, **(ii)** build research capacity, **(iii)** promoting sharing information, **(iv)** developing economic policies and tools, **(v)** strengthening national, regional and international legal institutional frameworks, **(vi)** instituting a system of environmental risk analysis, **(vii)** building public awareness and engagement, **(viii)** preparing national strategies and plans, **(ix)** building invasive alien species issues into global change initiatives and **(x)** promoting international cooperation.

### Conclusion

India is still free from many economically important exotic plant pests and other invasive species. Emergency preparedness to prevent the entry, establishment and to initiate containment and eradication activity in case of pest incursion is needed. There is a well-organized preparedness mechanism in place to prevent, control and eradicate locust invasion in the Country. While drawing the lessons from locust control programme, urgent action is required for establishing a similar preparedness action plan for various looming threats of exotic pests and invasive alien species into India.

## 5.3 PACIFIC DECADEAL OSCILLATION (PDO)

### Context

A recent study suggests that a **combination of global warming and the Pacific Decadal Oscillation (PDO), could lead to an increase in the frequency of tropical cyclones originating near the Equator.**

- **Equatorial-origin cyclones** have been unusually subdued in recent decades.

### Low Latitude Cyclones

1. Equatorial origin or Low Latitudes Cyclones (LLCs) originate between 5°N and 11°N.
2. These cyclones are much smaller in size than those in higher latitudes but intensify more rapidly.
  - Cyclones forming near the equator (low-latitude) is usually rare but when the waters are warm, they can gain more moisture and rise in intensity.
  - Majority of cyclones originate in the Western Pacific Ocean.
3. The last major cyclone of this kind in the Indian neighbourhood was the 2017 **Cyclone Ockhi** which travelled >2000 km and **devastated Kerala, Tamil Nadu and Sri Lanka.**



4. The North Indian Ocean (NIO) in the post-monsoon season (Oct-Nov-Dec) is a hotbed for LLCs that **constitute about 60% of all Tropical Cyclones** formed in the NIO (since 1951) but has received relatively less attention.

**Pacific Decadal Oscillation**

1. The Pacific Decadal Oscillation (PDO) is a **long-term ocean fluctuation of** the Pacific Ocean.
2. It is a **cyclical event that repeats every 20-30 years**.
3. It just like El Nino-Southern Oscillation (ENSO), has a ‘cool’ and ‘warm’ phase.
  - o Positive (**warm**) PDO = cooler **west Pacific Ocean** and warmer eastern side (vice versa for negative PDO).
  - o The term PDO was coined in about 1996 by Steven Hare.

**4. Impact of PDO**

- o **On Global Climate:** PDO phase can have significant implications for the global climate, affecting Pacific and Atlantic hurricane activity, droughts and flooding around the Pacific basin, the productivity of marine ecosystems, and global land temperature patterns.
- o **On Cyclones:** A warmer (positive-phased) PDO implies fewer equatorial-origin cyclones.
  - In 2019, the PDO entered a cooler, negative phase and which if continues, could mean more such cyclones in post-monsoon months.

**About ENSO**

- **Though ENSO is a single climate phenomenon, it has three states or phases. Which are as Follows:**
  - o **El Niño:** A warming of the ocean surface or above-average sea surface temperatures (SST), in the central and eastern tropical Pacific Ocean.
    - **It leads to drought and deficient rainfall in Asia.**
    - **Due to it, recently global monthly mean ocean temperatures have raised at an all-time high relative to temperatures since records started to be kept.**
  - o **La Niña:** A cooling of the ocean surface or below-average sea surface temperatures (SST), in the central and eastern tropical Pacific Ocean.
  - o **Neutral:** Neither El Niño or La Niña. Often tropical Pacific SSTs are generally close to average.

RELATION BETWEEN PDO AND ENSO	RELATION BETWEEN PDO AND GLOBAL WARMING
1. Climate impacts experienced during a PDO event can go hand-in-hand with impacts of ENSO.	1. It is thought that negative phases could be linked to times of slower warming.
2. If both phenomena are in the same phase, their associated impacts can be amplified.	2. This happens because cold or negative phases of the PDO tend to increase mixing of colder, deep ocean waters with warmer surface waters.
3. <b>Impact on Indian Monsoon:</b> ENSO (El Niño phase) with a positive PDO is generally not good for the Indian monsoon.	3. This temporarily reduces the rate of global warming caused by increasing greenhouse gas emissions.
4. When ENSO (in La Nina phase) is linked with a negative PDO, it intensifies monsoon in India.	4. However, positive phases of PDO have the opposite effect i.e., increases the global warming.

**Conclusion**

PDO is a complex phenomenon. It impacts region ranging from USA to India. Due to climate change and other related events such as ENSO its cycle has changed in the recent time. Still research is going on to understand its different dimensions.



### Marine Heatwaves (MHWs)

1. Long-term, persistent warming and discrete periods of extreme regional ocean warming is called MHWs.
  - Indian Ocean (Arabian Sea and the Bay of Bengal) experienced it recently.
2. **Causes:** It occurs when the surface temperature of a particular region of the sea rises to 3 or 4 degrees Celsius above the average temperature for at least five days.
  - El Nino has contributed in its occurrence.
3. **Key Characteristics**
  - MHWs can last for weeks or even years.
  - They can affect small areas of coastline or span multiple oceans.
  - MHWs have increased by 50% over the past decade and now last longer and are more severe.
4. **Impacts**
  - **Marine ecosystems:** Deaths of several marine species, alter their migration patterns, lead to coral bleaching and even impact weather patterns.
  - **Humans:** Can make storms stronger and severely affect coastal communities. These make hurricanes and tropical cyclones stronger more intense and frequent.
  - **Precipitation:** Due to its presence in the Bay of Bengal, northwest India received sufficient rainfall.

## 5.4 NAMAMI GANGE PROGRAMME (NGP)

### Context

In the last seven years, while some progress has been made by India's National Mission Mission for Clean Ganga (NMCG) there are still significant challenges ahead in achieving the mission's goals.

### Key facts

1. According to the latest projections by Namami Gange Programme (NGP) the installed waste treatment plants are capable of treating just 20% of the sewage estimated to be generated in the 5 major States that lie along the river.
2. These states are Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, and West Bengal.
3. The projection has also revealed that out of a total of 409 projects, only 232 projects have been completed and made operational (till December 2022).

Namami Gange Programme (NGP)	
<ul style="list-style-type: none"> <li>● It is one of the prestigious Programme of NMCG</li> </ul>	
1. Objective	<ul style="list-style-type: none"> <li>● Integrated Conservation Mission to accomplish the twin objectives of effective abatement of pollution, conservation, and rejuvenation of River Ganga.</li> <li>● Also covers its tributaries under one umbrella programme</li> </ul>
2. Phases	<ul style="list-style-type: none"> <li>● <b>Namami Gange Mission- I:</b> 2014-2021</li> <li>● <b>Namami Gange Mission- II:</b> 2022-2026</li> </ul>
3. Type	<ul style="list-style-type: none"> <li>● Central Sector Scheme</li> </ul>
4. Implementing Agency	<ul style="list-style-type: none"> <li>● National Mission for Clean Ganga (NMCG) and its state counterparts—State Programme Management Groups.</li> </ul>
5. Ministry	<ul style="list-style-type: none"> <li>● Ministry of Jal Shakti</li> </ul>
6. Key pillars	<ol style="list-style-type: none"> <li>1. Sewerage Treatment Infrastructure</li> <li>2. River-Front Development</li> <li>3. River-Surface Cleaning,</li> <li>4. Bio-Diversity, Afforestation,</li> <li>5. Public Awareness,</li> <li>6. Industrial Effluent Monitoring,</li> <li>and 7. Ganga Gram</li> </ol>
2. Major States covered	<ul style="list-style-type: none"> <li>● Uttarakhand, Uttar Pradesh, Jharkhand, Bihar and West Bengal</li> </ul>
3. Activities split into three segments or targets	<ul style="list-style-type: none"> <li>● Entry-level activities immediate (for visible impact)</li> <li>● Medium-term activities (to be implemented within 5 years of time frame)</li> <li>● Long-term activities (to be implemented within 10 years).</li> </ul>



<b>4. Major Achievements</b>	<ul style="list-style-type: none"> <li>• Median value of Dissolved Oxygen (indicator of river health) has been found to be within acceptable limits as per survey in 2022.</li> <li>• Out of 1072 Grossly Polluting Industries (GPIs) 885 have been brought under Central Pollution Control Board’s Online Continuous Effluent Monitoring Stations (OCEMS)</li> </ul>
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**Challenges faced by NGP**

- 1. Delay in Implementation of Projects:** Mainly due to factors such as delays in handing over land, delays in getting permission from the National Highways Authority of India (NHAI) and Railways, etc.
- 2. Poor financial management:** Only about 14,745cr of funds have been released by NMCG to State Governments, State Missions for Clean Ganga (SMCG), and other agencies till June 2023.
  - States are dependent on the Centre for funds.
- 3. Inadequate Sewage treatment:** Untreated sewage and substantial industrial effluents are still being discharged into the river or its tributaries. This is because of the absence of requisite functional treatment capacity.
- 4. Governance issues:** There are a number of authorities at the state and the national levels which cause duplication of effort. There is a lack of coordination among agencies.
- 5. Lack of Participation:** Not much enthusiasm is shown by the private entities and civil society at large to take extra steps without being dependent on the government funds.

<b>Other Key Initiatives/steps for Cleaning Ganga</b>
<b>1. Clean Ganga Fund:</b> In 2014, it was formed to clean up the Ganga, set up waste treatment plants, and conserve the biotic diversity of the river.
<b>2. National River Ganga Basin Authority (NRGBA):</b> It was constituted under the provisions of the EPA, 1986. It has been dissolved in 2016, consequent to constitution of National Council for Rejuvenation, Protection and Management of River Ganga (NCRPM) or National Ganga Council. <ul style="list-style-type: none"> <li>○ It is implemented by NMCG.</li> </ul>
<b>3. Bhuvan-Ganga Web App:</b> It ensures involvement of the public in monitoring of pollution entering into the river Ganga.
<b>4. Ban on Waste Disposal:</b> In 2017, the National Green Tribunal banned the disposal of any waste in the Ganga.
<b>5. Ban on Waste Disposal:</b> In 2017, the National Green Tribunal banned the disposal of any waste in the Ganga.
<b>6. Collaboration with Other Countries:</b> Such as Australia, United Kingdom, Germany, etc.

**Namami Gange: Strategic Areas of Intervention**

<b>Nirmal Ganga</b>	<b>Aviral Ganga</b>	<b>Jan Ganga</b>	<b>Gyan Ganga</b>	<b>Arth Ganga</b>
1. Sewerage Infrastructure 2. Industrial Pollution	1. Maintaining ecological flow	1. Riverfront ghats and crematoria	1. Water quality monitoring	1. Zero budget Natural farming
3. Wastewater reuse and recycle	2. Wetland mapping and conservation	2. Community engagement	2. High resolution mapping of Ganga stretch	2. Monetisation of Reuse of sludge & Wastewater
4. Rural sanitation	3. Floodplain management	3. Ganga Run	3. Microbial diversity	3. Livelihood Generation
5. Solid Waste management	4. Sustainable agriculture	4. Ganga Utsav	4. Aquifer mapping & spring rejuvenation	4. Public Participation
	5. Afforestation and biodiversity conservation	5. Ganga Quest	5. Cultural mapping & spring rejuvenation	5. Culture Heritage & Tourism
	6. Small river	6. Ganga	6. River Cities	6. Institutional





	rejuvenation	Amartran Abhiyan	Alliance	Building
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**Way forward**

- 1. Verification:** The existing and planned **sewage treatment plants (STPs)** need to be verified on efficiency, reliability and technology parameters by independent agencies.
- 2. Revenue Generation:** Evolve new and innovative ways to generate sufficient revenues for operation and maintenance (O&M) of water and wastewater infrastructure through pricing and valuing water.
- 3. Restore local storages (ponds, lakes, wetlands):** It should be an integral part of river restoration and conservation strategy.
- 4. Mapping and updating of land records:** Map the entire looped length of each and every tributary of the Ganga and correct the land records.
  - Start restoring lower-order streams and smaller tributaries in the Ganga Basin.
- 5. Other Strategies:** Many of the strategies like river-linking, riverfront development projects, access to toilets, making villages open defecation-free, etc. need to be integrated with long-term ecological and sustainability goals.

**5.5 NEWS IN SHORTS**

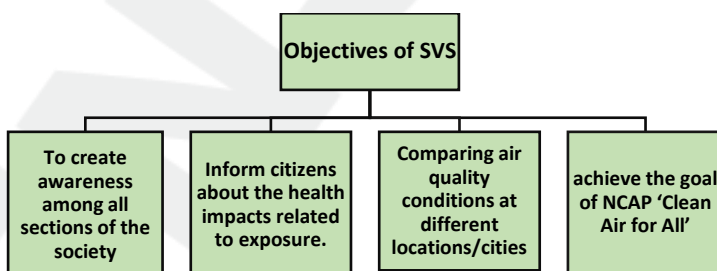
**5.5.1 SWACHH VAYU SARVEKSHAN**

- 1. Context:** In September, 2023 the awards for **Swachh Vayu Survekshan (Clean Air Survey) 2023** were announced.
- 2. Survey Conducted by:** Central Pollution Control Board (CPCB)
- 3. Performance:**

Category	Top performer	Worst performer
million plus population	Indore	Madurai
3-10 lakhs population	Amravati	Jammu
less than 3 lakhs population	Parwanoo	Kohima

CITY LAGS IN AIR QUALITY		CRITERIA	
<b>Category 1 Cities with population over 10 lakh</b>		<b>Category 1</b> Population over 10 lakh No. of cities <b>47</b>	<b>Category 2</b> Population 3-10 lakh No. of cities <b>44</b>
<b>City</b>	<b>Rank</b>	<b>Category 3</b> Population under 3 lakh No. of cities <b>40</b>	
Indore	1		
Agra	2		
Thane	3		
Srinagar	4		
Bhopal	5		
Trichy	6		
Vadodara	7		
Ahmedabad	8		
Delhi	9		
Mumbai	10		

- 4. Swachh Vayu Survekshan (SVS) is an initiative** by the Ministry of Environment, Forest and Climate Change (MoEFCC) to rank cities on the basis of air quality and implementation of activities approved under the city action plan (NCAP) in 131 non-attainment cities.
- 5. Objectives:**



**Important Facts**

- Every year, the **International Day of Clean Air for Blue Skies** is celebrated on 7 September to raise awareness and facilitate actions to improve air quality.
  - It was declared so by the United Nations General Assembly (UNGA) in 2019.
- Theme for **4th International Day of Clean Air for Blue Skies** (Swachh Vayu Diwas 2023) - **"Together for Clean Air."**



### 5.5.2 BUILDING MATERIALS AND THE CLIMATE

- Context:** In September, 2023 United Nations Environment Programme (UNEP) released report titled- ‘Building Materials and The Climate: Constructing A New Future’.
- Developed by:** Collaboration with Yale Center for Ecosystems and Architecture in the framework of the Global Alliance for Buildings and Construction (Global ABC).
- It highlights the urgent need to develop new models for cooperation on decarbonisation of building materials.
- Decarbonisation of buildings refers to removal or reduction of carbon dioxide (CO<sub>2</sub>) emission into atmosphere.



#### 5. Need to decarbonise building/construction sector

- It is responsible for at least 37 percent of global emissions (largest emitter of greenhouse gas).
- To **limit global warming to 1.5°C** (Paris agreement) and **achieve net zero by 2050** by reducing embodied carbon in building materials.
  - Embodied carbon account for 11 percent of annual global GHG emissions arising from manufacturing, transportation, installation, maintenance, and disposal of building materials.

Decarbonising buildings and construction through the Avoid-Shift-Improve approach



#### 6. Challenges in decarbonization of building/construction sector

- Regulation and market demand:** No consensus exists on Building specifications, standards and codes.
- Lack of Data** on durability and resilience of materials and its impact on embodied carbon.
- Lack of capacity** in data collection and reporting of material changes, maintenance and repair that have occurred in a building over time.

### 5.5.3 BREAKTHROUGH AGENDA REPORT 2023

- Context:** In September, 2023 this report jointly released by International Energy Agency, International Renewable Energy Agency, and UN Climate Change High-Level Champions.
- About:** It is an annual progress report, requested at UN Climate Change Conference COP26 2021 as part of the launch of the Breakthrough Agenda.
  - Breakthrough Agenda is an action plan that aims to align actions and coordinate investment across 5 key sectors viz.

Sector wise recommendations	
1. Power sector	Prioritise R&D investments in storage, and distributed operation of energy resources.
2. Hydrogen	Define regulatory frameworks for storage technology transfer and increase concessional finance available for well-targeted usages.
3. Road transport	Agreed on a timeline for zero-emission and established standards for battery carbon footprint.
4. Steel	Establish a dialogue on steel decarbonization policies and make an emissions accounting methodology



<b>5. Agriculture</b>	Additional finance is needed for agroecology, reduction of food loss and waste, reducing methane emissions, and crop and livestock breeding.
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3. Power, Road transport, Steel, Hydrogen, and Agriculture

ENSURE IAS



#### 4. Key findings:

- Transition to clean energy sustainable solutions is accelerating.
- Country's Nationally Determined Contributions are not aligned with global climate goals.
- Power sector accounts for 23% of total emissions, which has risen by around 10% since 2010.

#### 5.5.4 NATIONAL CARBON REGISTRY

1. **Context:** Recently, United Nations Development Programme (UNDP) launched the National Carbon Registry.
2. **About:** National Carbon Registry is an open-source software that allows countries to effectively manage national data and processes for trading carbon credits.
3. **Focus:** National carbon Registry will promote development of Carbon Market by facilitating trading of carbon credits.
  - **Article 6 of Paris Agreement** allows countries to voluntarily cooperate with each other to achieve emission reduction targets set out in their Nationally Determined Contributions (NDCs).
4. Carbon markets are trading systems in which carbon credits are sold and bought.
  - Companies or individuals can use carbon markets to compensate for their greenhouse gas emissions by purchasing carbon credits from entities that remove or reduce greenhouse gas emissions.
  - One tradable carbon credit equals one tonne of carbon dioxide or the equivalent amount of a different greenhouse gas reduced, sequestered or avoided.
  - Carbon trading was introduced by Kyoto Protocol in 1997.
5. **India's Status:** Ministry of Power notified **Carbon Credits Trading Scheme (CCTS), 2023** for institutionalisation and functioning of Indian Carbon Market (ICM).

#### 5.5.5 TECHNICAL REPORT ON THE GLOBAL STOCKTAKE

1. **Context:** In September, 2023 the first global stocktake technical synthesis report released by the United Nations Framework Convention on Climate Change (UNFCCC).
2. **Aim:** To serve as a report card on the progress of countries under the 2015 Paris Agreement in achieving their climate action goals.
  - The Global Stocktake is intended to evaluate progress on climate action at the global level — not the national level — and identify overall gaps to achieve the Paris Agreement as well as opportunities to bridge them.
3. **Key findings:**
  - The world is **'not on track'** to meet the long-term goal of limiting global temperatures to 2 degrees Celsius.
  - Renewable energy has to be scaled up and all **'unabated fossil fuels'** (for example, coal plants without carbon capture and storage mechanisms) were to be rapidly eliminated to reach net zero CO<sub>2</sub> emissions.
  - More ambitious mitigation targets in NDCs (Nationally Determined Contributions) are needed to reduce emissions more rapidly.
  - Transparent reporting on adaptation can facilitate and enhance understanding, implementation and international cooperation.
  - Support for adaptation and funding arrangements for averting, minimising and addressing loss and damage, from the impact of climate change, needed to be rapidly scaled up from expanded and innovative sources.
  - A focus on inclusion and equity can increase ambition in climate action and support.
  - Strategic capacity-building support to developing countries needs to be scaled up to address locally determined needs.





### 5.5.6 CENTRAL EMPOWERED COMMITTEE (CEC)

- Context:** In September, 2023 Ministry of Environment, Forest and Climate change (MoEF&CC) forms CEC on Environmental issues.
- About:** MoEF&CC, exercising power under the Environment (Protection) Act (1986), constituted a permanent statutory CEC.
  - The permanent CEC will replace an ad hoc CEC formed in 2002 for monitoring the implementation of SC's order in TN Godavarman vs. Union of India (1996).
  - Ad hoc CEC has been reporting to SC on steps taken for removal of encroachment, compensatory afforestation, and other conservation issues.
- Key highlights**

<b>Composition</b>	<ul style="list-style-type: none"> <li>Chairman and 3 Expert Members selected for 3 years (extendable once upto age of 60).</li> <li>Chief Coordinating Officer a serving officer not below rank of DIG of Forests/Director in GOI.</li> <li>All of them should have experience in Environment, Forest and Wildlife.</li> </ul>
<b>Functions</b>	<ul style="list-style-type: none"> <li>Monitor implementation of SCs orders and place reports of noncompliance before the Centre.</li> <li>Deal with any applications made by any aggrieved person.</li> </ul>
<b>Jurisdiction</b>	<ul style="list-style-type: none"> <li>Whole country</li> </ul>
<b>Deferment of State Concern</b>	<ul style="list-style-type: none"> <li>If the State differs from CEC's recommendation, it shall be referred to the Centre whose decision shall be final and binding.</li> <li>Lack of representation from civil society (ad hoc panel comprised of two members of NGOs)</li> </ul>

### 5.5.7 GLOBAL TRENDS ON LAND DEGRADATION AND DROUGHT

- Context:** In September, 2023 United Nations Convention to Combat Desertification (UNCCD) released data -Global Trends on Land Degredation and Drought.
- Key Findings:**
  - Between 2015 and 2019, at least 100 million hectares of land were degraded every year amounting to 402 million hectares in four years.
  - It impacted the lives of 1.3 billion people.
  - At this rate, restoring 1.5 billion hectares of land by 2030 is essential to achieve a **land- degradation-neutral (LDN)** world.
- Reasons:** extreme weather conditions, drought, excessive Use of fertilizers and pesticides, salination, climate change, etc.
- LDN is a state whereby, the amount and quality of land resources necessary to support the ecosystem to enhance food security remain stable or increase, within specified temporal and spatial scales.
- Earlier, UNCCD has released a 2018–2030 Strategic Framework that **focuses** on;



#### 6. Initiative of India to check land degradation

- India joined the voluntary Bonn Challenge pledge to bring into restoration 26 million hectares of degraded and deforested land by the year 2030.
- Desertification and Land Degradation Atlas of India, for state-wise areas of degraded land.
- Sustainable Land and Ecosystem Management Program
- Integrated Watershed Management Program
- National Mission for Green India
- National Afforestation Program

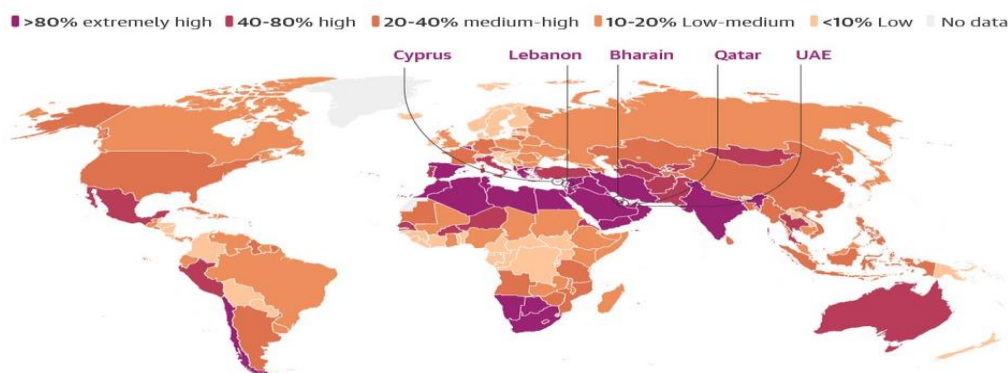


### 5.5.8 EXTREME WATER STRESS

- Context:** According to **World Resource Institute (WRI)**, Twenty-five countries, including India are facing extreme water stress.
- Key Finding:**
  - These countries are regularly using 80% of their water supplies each year.
  - Demand for water is increasing around the world and has more than doubled since 1960.
  - About 4 billion people, 50% of world's population live under highly water-stressed conditions for at least one month of the year.

**By 2050 close to 60% of the world's population could experience extremely high water stress at least one month a year**

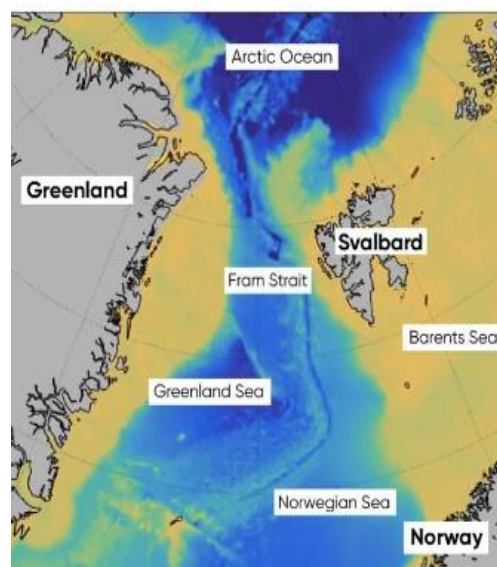
Water stress by country, 2050 forecast. Top five countries labelled.



- 60% of world's irrigated agriculture faces extremely high-water stress.
- Causes of global water stress:** Increased water use, lack of investment in water infrastructure, unsustainable water uses policies, increased variability due to climate change etc.
  - Recommendations**
    - Improve water governance through nature-based solutions and green infrastructure.
    - Consider programs like debt-for-nature swaps for a commitment to invest in mangrove restoration or wetland conservation.
    - Switching to water-efficient crops or using methods like sprinkler or drip irrigation versus flooding fields.
    - Cities should develop urban water resilience action plans.
  - Initiatives taken in India**
    - National Water Mission
    - Water Conservation initiatives under schemes such as Atal Bhujal Yojana, etc.
    - Jal Shakti Abhiyan-Catch the Rain.
    - Sahi Fasal campaign.

### 5.5.9 ATLANTIFICATION

- Context:** According to recent study, Atlantification is making the Arctic Ocean saltier and warmer.
- About:** Atlantification is a process in which warm water from Atlantic is being advected into arctic ocean in increasing amounts thereby making some parts of Barents Sea to more closely resemble the Atlantic.
- Researchers believe that Atlantification is driven by a process called Arctic Dipole which is associated with anticyclonic winds over North America and cyclonic winds over Eurasia which alternates in an approximately 15-year cycle.
  - Positive phase of Arctic Dipole contributed to slowing Arctic sea-ice loss by restricting Atlantic water into the Arctic via the Fram Strait and negative phase accelerate sea-ice decline.





### 5.5.10 ARTIFICIAL REEF (AR)

- Context:** In September, 2023 Department of Fisheries (DoF) has sanctioned 732 Artificial Reef (AR) units for 10 coastal states with a total investment of Rs 126 crore.
- DoF is promoting AR under Pradhan Mantri Matsya Sampada Yojana for rejuvenating coastal fisheries.
- ARs are technology interventions used to rehabilitate or improve natural habitats, increase productivity and manage aquatic resources including habitat enhancement.
- Advantages**
  - Reduce wave damage on coasts, helps regeneration of marine ecosystem and act as a carbon sink.
  - Enhance recreational fisheries, eco-tourism, creating suitable areas for diving and reducing conflicts.
  - Restricts bottom trawling in the near shore areas.

### 5.5.11 ELECTRIFIED FLEX FUEL VEHICLE (FFV)

- Context:** On 29 August, 2023 World's first prototype of the BS 6 Stage II 'Electrified Flex fuel vehicle (FFV)' launched.
- About:**
  - This vehicle has both, the flex fuel engine as well as an electric powertrain.
  - It offers higher use of ethanol combined with better fuel efficiencies.
- FFV has an internal combustion engine that can run on more than one type of fuel, or even a mixture of fuels such as petrol and ethanol.
  - For example:** E85 which has 85% ethanol fuel and 15% gasoline or other hydrocarbon by volume.
  - Benefits:** Lower harmful pollutant emission like Carbon monoxide, sulphur, etc., reduced import dependence on crude oil.
  - Drawbacks:** Lower mileage compared to traditional gasoline, use of water-intensive crops such as sugarcane for production of ethanol, etc.
- Bharat Stage VI (BS VI)**
  - Bharat stage (BS) emission standards** are laid down to regulate the output of air pollutants from internal combustion engine and spark-ignition engine equipment.
  - Government had decided to leapfrog directly from BS-IV to BS-VI emission norms **w.e.f. 1 April, 2020.**
  - The fuel quality has improved significantly from BS-IV to BS-VI norms by reducing the permissible Sulphur content by 80% (from 50 Parts Per Million (ppm) to maximum 10 ppm).

#### **Ethanol Blended Petrol (EBP) Programme**

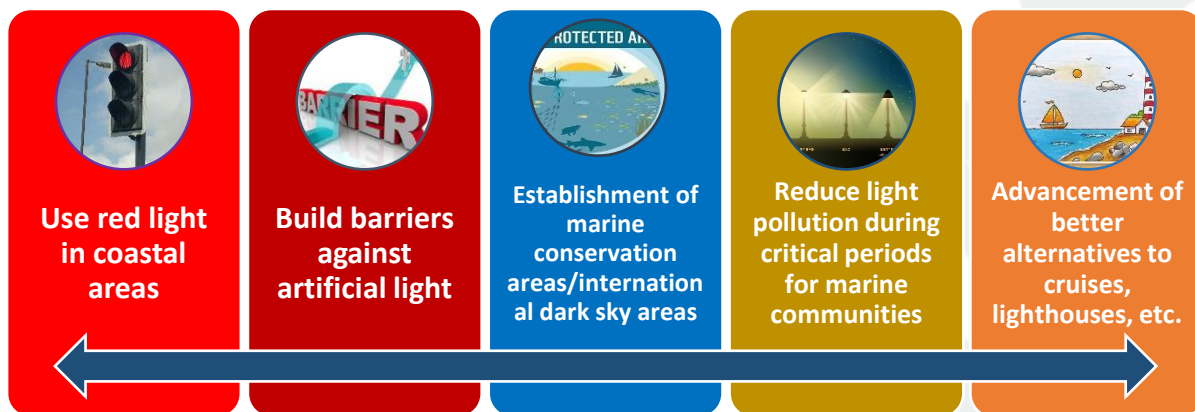
- The target of 10% ethanol blending for Ethanol Supply Year (ESY) 2021-22 has already been achieved.
- The National Policy on Biofuels – 2018 targets 20% blending of ethanol in petrol by ESY 2025-26.

### 5.5.12 MARINE LIGHT POLLUTION

- Context:** According to a study by Journal Aquatic Conservation marine light pollution threatens coastal marine systems.
- Light pollution also known as 'Artificial Light at Night' (ALAN) is an excessive, misdirected, or obtrusive artificial (usually outdoor) light in the environment.
- Sources of light for Marine Ecosystem:**
  - Natural Sources:** Sunlight, moonlight, starlight, and bioluminescent light (result of endogenous biochemical reactions).
  - Artificial light:** City lights, by offshore oil and gas platforms, wind farms, and island development.
- Significance of Light for Marine Ecosystem**
  - Ocean is generally divided into three zones based on the amount of sunlight it receives i.e., Euphotic (<200 m), Dysphotic(200 and 1,000 m), and Aphotic zones (below 1,000 m).
  - Marine organisms have visual systems guided by light and solar and lunar cycles to regulate their life events e.g., eggs hatching, etc.
- Impacts of ALAN:**
  - Behavior change-mating, reproductive.
  - Symbiosis or inter species interaction impacted.
  - Physiology e.g hormones, metabolism and growth.
  - Photosensitive systems of species get disturbed



## 6. Suggestions:



### 5.5.13 GLOBAL SYMPOSIUM ON FARMERS' RIGHTS

- Context:** In September, 2023 'First Global Symposium on Farmers' Rights (GSFR)' held at the ICAR Convention Centre, National Agricultural Science Centre, New Delhi.
- About:** GSFR was organized by Secretariat of International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) of Food and Agriculture Organization (FAO).
  - PGRFA are the raw material that form basis of all crop varieties and include seeds and all other plant genetic material.
  - ITPGRFA, also known as Seed treaty.
  - GSFR adopts the **Delhi Framework on Farmers' Rights**.
- Key highlights of Delhi Framework:**
  - Creating functional synergy across different UN instruments (ITPGRFA, CBD, United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) etc.) for realization of farmers' rights.
  - Establish/support farmer-managed seed system for traditional varieties and create self-sustaining production and marketing value chain.
  - Building farmer-centric partnership opportunities including South-South, triangular and regional cooperation.
- ITPGRFA**, also known as seed treaty, is a major international agreement to conserve, use and manage PGRFA around the world.
  - It is a legally binding agreement that was adopted in 2001 and entered into force in 2004 (India is a party).
  - ITPGRFA makes it possible to share plant genetic resources across borders through a unique Multilateral System of Access and Benefit-sharing (MLS).
- India** has enacted the **Protection of Plant Varieties and Farmers' Rights Act 2001** to safeguard interest of farmers and other peoples who are engaged in the conservation and improvement of plant genetic resources.

### 5.5.14 NORMAN BORLAUG FIELD AWARD FOR FIELD RESEARCH AND APPLICATION

- Context:** In September, 2023 Dr. Swati Nayak, an Indian scientist at International Rice Research Institute (IRRI), was named the recipient of the prestigious award in 2023.
  - She is recognized for her innovative approach to engaging smallholder farmers in demand-driven rice seed systems and adoption of climate-resilient and nutritious rice varieties.
- \$10,000 award recognizes exceptional, science-based achievement in international agriculture and food production by an individual under the age of 40.
  - Endowed by:** Rockefeller Foundation





### 5.5.15 KYLINXIA ZHANGI

- Context:** Researchers have recently investigated a nearly 520-million-year-old fossil of *Kylinxia zhangii* (found in China) with a CT scanner and redescribed the animal.
- New findings revealed that *Kylinxia* sported three eyes on its head, along with a pair of claws that was possibly used to catch prey.
- The fossil is part of the Cambrian Chengjiang biota, a group of exceptionally preserved animals.



#### Arthropods

- They are **invertebrates with jointed legs**.
- They **make up about 75% of all animals on Earth**.
- They **can be found in almost every habitat on Earth**, from deep-sea hydrothermal vents to the highest mountains.
- Arthropods are **divided into four major groups**:
  - **insects**;
  - **myriapods** (including centipedes and millipedes);
  - **arachnids** (including spiders, mites and scorpions);
  - **crustaceans** (including slaters, prawns and crabs).

- Kylinxia* is related to the Arthropods.**

### 5.5.16 MITHUN

- Context:** Recently Northeast's Mithun (*Bos frontalis*) gets a 'food animal' tag from the Food Safety and Standards Authority of India (FSSAI).
  - Food Animals are those that are raised and used for food production or consumption by humans.
- About Mithun:**
  - **Species:** Ruminant species of Bovidae family.
  - **Habitat:** Arunachal Pradesh, Nagaland, Manipur, and Mizoram. Also found in parts of Bangladesh, Myanmar, and Bhutan.
  - **State animal:** of both Arunachal Pradesh and Nagaland.
  - **Similar to that of Gaur (Indian bison) but are smaller in size.**
  - **Earlier in 2022, Himalayan yak was accepted as a food animal by FSSAI.**



### 5.5.17 PTERYGOTRIGLA INTERMEDICA

- Context:** In September, 2023 Scientists of Zoological Survey of India have discovered a new species of marine fish from West Bengal.
- New species, commonly known as **gurnards or sea-robins**, belongs to family **Triglidae** and there are a total 178 species of the family worldwide.

### 5.5.18 RED FIRE ANT

- Context:** Red fire Ant - one of the world's most invasive species, has been found in Europe for the first time.
- Native:** South America however, spread in United States, Mexico, the Caribbean, China, and Australia.
- Communication:** through chemical secretions and stridulation (sounds produced by rubbing or drumming one body part against another)





4. **Invasive species** drive plant and animal extinctions, threaten food security and exacerbate environmental catastrophes.

ENSURE IAS

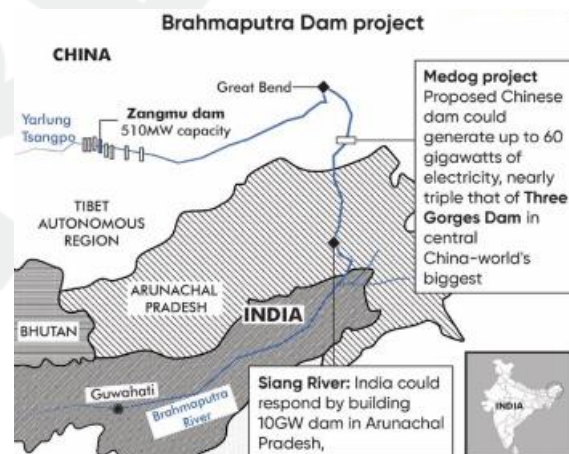


### 5.5.19 SAGO

1. **Context:** SAGOSERVE (a cooperative society) received GI tag for its Sago produced in Salem (TN).
2. **About:**
  - o Sago is derived from raw tapiocas and is in the form of small hard globules or pearls and is pearl white in colour.
  - o Tapioca is a **horticultural crop**, that grows in tropical, warm humid climate with rainfall of over 100 cm per annum.
  - o Sago comprises of **high carbohydrate content** and is low in protein, fat, minerals, vitamins etc.
  - o It is easy to digest and **provides rapid energy**.

### 5.5.20 SIANG RIVER

1. **Context:** In September, 2023 the Union Government has proposed to construct a large barrage on the Siang River to protect it from potential hazards posed by the massive Chinese dam being built on river Tsangpo in Tibet.
2. Noteworthy, China's proposed massive hydropower project on the Great Bend of Yarlung Tsangpo River just before the river enters India as Siang.
  - o The **Yarlung Tsangpo river** starts from Mansarovar lake and flows easterly for more than 1,600 km across Tibet before bending towards the south-east around Namcha Barwa peak to enter India at Gelling in Arunachal Pradesh, where the river is known as Siang.
  - o The Siang flows down the Himalayas in Arunachal Pradesh, enters the Assam valley, joins two other rivers (**Lohit and Dibang**) and together they become the Brahmaputra.
3. **Impact of China's mega dam project**
  - o **Chinese control overflow:** Chinese authorities will have control over the Tsangpo's flow, enabling them to store it in reservoirs and redirect it to suit their regional water management needs
  - o **Agriculture:** Such a huge dam could hold back massive amounts of silt carried by the river which could affect farming in the areas downstream.
    - Silty soil is more fertile than other types of soil and it is good for growing crops.
  - o **Seismological impact:** Large-scale infrastructure projects elevate seismic risks, endangering downstream populations significantly.
  - o **Ecological impact:** Deforestation, soil erosion, and landslides compound ecological vulnerabilities.



### 4.5.21 KILAUEA VOLCANO

1. **Context:** In September, 2023 One of the world's most active volcanoes has erupted again.
2. It is the third time the volcano has erupted this year, after bursting to life in January and June.
3. It is located on southeastern part of island of Hawaii, Hawaii state, U.S
4. **Volcano** is a vent in the crust of Earth, from which eruptions of molten rock, hot rock fragments, and hot gasses take place.

### 4.5.22 EARTHQUAKE IN MOROCCO

1. **Context:** The most powerful earthquake in Morocco's history struck in September, 2023.
2. **Magnitude:** 6.8
3. **Epicenter:** Located in the **Al-Haouz province, within the Atlas Mountains near the historic city of Marrakech**.
4. **Reasons for the strongest earthquake in this region**
  - o Northward convergence of the African plate with respect to the Eurasian plate along a complex plate boundary.



- It was attributed to oblique-reverse faulting at shallow depth within the Moroccan High Atlas Mountain range.
- This type of faulting is common in areas of compression along the convergent plate boundaries.

#### 4.5.23 AAROGYA MAITRI CUBE

1. **Context:** India has built the world's first disaster hospital, called Aarogya Maitri Cube which can be airlifted and assembled in 72 cubes.
2. These cubes contain medical equipment and supplies to support 200 survivors for 48 hours.
3. These medical cubes have been indigenously developed under **Project BHISHM (Bharat Health Initiative for Sahyog Hita and Maitri)**.
4. **India** has already donated two Aarogya Maitri Cubes to Myanmar as a goodwill gesture and one is being readied for donation to Sri Lanka.





## 6.

## SOCIAL ISSUES

## 6.1 UNIVERSAL HEALTH COVERAGE

## Context

In September 2023, the Tracking Universal Health Coverage: 2023 Global Monitoring report was jointly released by the World Bank and the World Health Organization (WHO).

## More in news

1. The report uses **two Sustainable Development Goals (SDGs) indicators** to analyse the progress made toward Universal Health Coverage (UHC) i.e.

- **UHC Service Coverage Index (SCI)** that covers essential health services (**SDG 3.8.1**).
- **Out-of-Pocket Health Expenditure (OOPE)** measuring catastrophic health spending (**SDG 3.8.2**).

## Key findings of the report

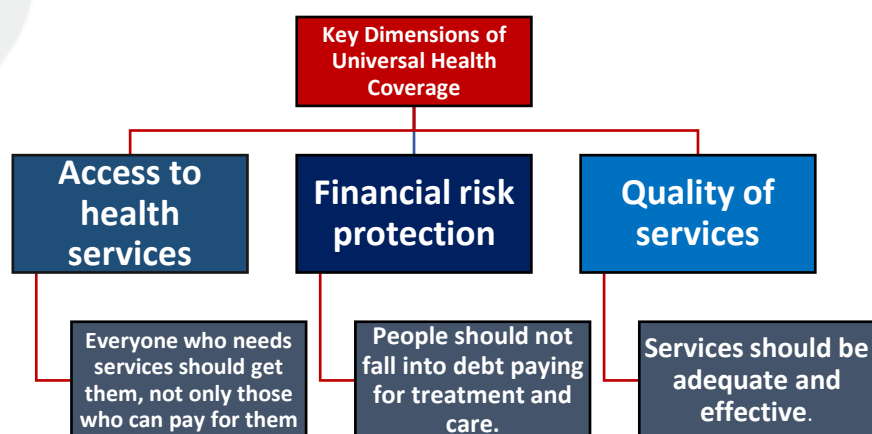
1. Between 2000 and 2021, the UHC service coverage index increased from 45 to 68.
2. The world's efforts to achieve the UHC (SDG target 3.8) by 2030 are falling short of expectations since progress in expanding access to health services has stagnated since 2015.
3. Between 2000 and 2021, the proportion of the population without access to essential health care fell by almost 15%, with no improvement occurring after 2015.
4. At its worst in 2021, the COVID-19 pandemic interrupted basic services in 92% of the countries affected. 84% of nations reported interruptions in 2022.
5. The proportion of the population that was facing catastrophic out-of-pocket health care costs has increased.
6. Financial hardship is more common in poorer households, mostly because impoverishing health spending, as opposed to catastrophic health spending, is more common.

**Service Coverage Index (SCI)**

- **SCI used to track SDG 3.8.1 (includes four indicator categories):**
  - Reproductive, maternal and newborn and child health.
  - Infectious diseases.
  - non-communicable diseases.
  - Service capacity and access.
- It is measured on a scale from 0 (worst) to 100 (best).
- **In 2021, India's score declined to 63 from 64 in 2019.**

**Know the Term**

- **Catastrophic Health Spending:** It is defined as household health spending exceeding 10% of household consumption expenditure.
- **Impoverishing health spending:** OOP expenditure is considered to be impoverishing when it pushes households below a pre-defined poverty line or further into poverty if they are already poor according to that poverty line.





### What is Universal Health Coverage?

1. **UHC** is visualised as an ideal state of health system organisation in which all individuals and communities receive quality health services as per needs, without suffering financial hardship.
2. UHC is also key to achieving the **World Bank Group's (WBG) twin goals of increasing equity and shared prosperity and eradicating extreme poverty**, and as such it is the driving force behind all of the WBG's health and nutrition investments.

### Importance of Universal Health Coverage

1. To optimize human capital, allocate resources towards health, as it plays a pivotal role in children's educational success and adults' workforce productivity, which ultimately promotes economic growth.
2. The demand for skilled jobs rises in an efficient healthcare system with an equitably distributed healthcare infrastructure.
3. Helps in achieving Sustainable Development Goal 3 (Good Health and Well-being).
4. facilitates the distribution of health resources among various population groups, reduces social barriers to care, and empowers patients in decision-making.

### Challenges in achieving Universal Health Coverage

1. **Low Health care spending:** The budgeted spending on healthcare by the federal and state governments grew slightly from 1.6% of GDP in FY21 to 2.1% of GDP in FY23, according to the Economic Survey 2022–2023, and is still among the lowest in the world.
2. **Lack of financial protection:** Because of current gaps in coverage and overlap between plans, at least 30% of the population lacks any financial protection for health, according to NITI Aayog.
3. **High out-of-pocket expenditure (OOPE):** India's OOPE in 2019–20 is 47.1% of total health spending, which is far more than the 18% global average.
4. **Inequitable Access:** India's rural areas face several obstacles to receiving quality healthcare, including a scarcity of licensed medical personnel, geographical constraints such as distance, a lack of developed infrastructure for healthcare, and the inability to pay for essential medical care.
5. **According to a 2023 Lancet publication**, state-run district hospitals do not all provide core health services in the same way. In Tamil Nadu, only 16% of district hospitals provided all necessary services. It was discovered to be only 1% in states like Assam, Punjab, Madhya Pradesh, Mizoram, and Uttar Pradesh.
6. **Lack of medical manpower:** The provision of healthcare services in India is impacted by the lack of medical experts, such as physicians, nurses, and paramedical personnel.

### Initiatives taken to achieve Universal Health Coverage

1. **Ayushman Bharat Yojana:** It seeks to implement interventions at the basic, secondary, and tertiary levels to address health holistically.
2. **Ayushman Bharat Digital Mission:** By encouraging the use of technology like telemedicine and facilitating nationwide portability of health services, it will increase fair access to high-quality healthcare.
3. **National Health Policy 2017:** It seeks to provide everyone with access to high-quality healthcare at a reasonable cost and to universal health coverage.
4. **Intensified Mission Indra Dhanush:** It focuses on vaccinating pregnant women who may have missed any doses of the national immunization schedule as well as zero-dose children between the ages of 0 and 5.

### Way forward

1. **Recommendations from the report:**
  - Adopting a primary healthcare strategy can enhance health systems and hasten the transition to universal health coverage.
  - extension of vital services, particularly those related to non-communicable diseases.
  - removing financial obstacles, such as those related to co-payments and indirect expenditures in healthcare.
  - strong adherence to the International Health Regulations in cases of acute risk to public health.
2. **Increase public spending:** The government should increase its expenditure to approximately 5.2%, which corresponds to the mean health spending of the Lower- and Middle-Class Countries (LMIC).
3. **Address Structural Issues:** By involving the business sector, and civic society, and increasing medical seats, among other measures, structural deficiencies in the healthcare delivery system—such as a shortage of medical supplies and healthcare staff, illogical treatments, etc.—can be remedied.



4. **Centre-State Coordination:** A cooperative framework that permits adaptable policymaking and differentiable financing from the federal government to the states should be implemented by the central government. States will be able to create health plans that are in line with the needs and requirements of their respective populations and better satisfy the variety of requirements as a result.

#### World Health Organization (WHO)

- World Health Organization (WHO), the United Nations specialized agency for Health was founded in 1948.
- Its headquarters are situated in Geneva, Switzerland.
- There are 194 Member States, 150 country offices, six regional offices.
- It is an **inter-governmental organization** and works in collaboration with its member states usually through the Ministries of Health.
- The WHO provides leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.
- It began functioning on April 7, 1948 – a date now being celebrated every year as **World Health Day**.

#### World Bank

- **About:**
  - It was created in 1944, as the International Bank for Reconstruction and Development (IBRD) along with the IMF. The IBRD later became the World Bank.
  - The World Bank Group is a unique global partnership of five institutions working for sustainable solutions that reduce poverty and build shared prosperity in developing countries.
  - The World Bank is one of the United Nations' specialized agencies.
- **Members:**
  - It has 189 member countries.
  - India is also a member country.
- **Major Reports:**
  - Ease of Doing Business (Stopped publishing).
  - Human Capital Index.
  - World Development Report.
- **Its Five Development Institutions:**
  - International Bank for Reconstruction and Development (IBRD)
  - International Development Association (IDA)
  - International Finance Corporation (IFC).
  - Multilateral Guarantee Agency (MIGA)
  - International Centre for the Settlement of Investment Disputes (ICSID)
    - **India** is not a member of ICSID.



## 6.2 AYUSHMAN BHARAT DIGITAL MISSION (ABDM)

### Context

In September 2023, "Arogya Manthan" 2023 was organized by the **National Health Authority (NHA)** to celebrate the two years of the **Ayushman Bharat Digital Mission (ABDM)** and the five years of the **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY)**.

### Facts About ABDM

- Aim:** To create the framework required to support the nation's integrated digital health infrastructure.
- Implementing Agency:** NHA under the Ministry of Health and Family Welfare.
- The Ministry of Electronics and Information Technology has launched the **India Enterprise Architecture Framework (IndEA)**, which is being used for developing the digital infrastructure under the scheme.
- The comprehensive framework known as **IndEA** is designed to optimize, standardize, and streamline e-government initiatives nationwide in order to promote interoperability and integration.

States and Union Territories that excelled in a number of categories received awards at the event	
1. <b>Highest Ayushman Card Creation</b>	Assam, Nagaland, and Jammu & Kashmir
2. <b>Highest Percentage of Utilization in Public Hospitals</b>	Karnataka and Tripura
3. <b>Top State in Linking Health Records with ABHA</b>	Andhra Pradesh
4. <b>Top State in Generation of ABHA Scan and Share Tokens</b>	Uttar Pradesh

### Components of the mission

- Ayushman Bharat Health Account (ABHA) Number:**
  - Through self-registration, a 14-digit number is generated at random.
  - Purpose:** recognizing people, confirming their identity, and transferring their medical records amongst various systems and stakeholders (only with the patient's informed consent).
- ABHA app:**
  - An iOS and Android application for keeping Personal Health Records (PHR).
  - allows the scanning and self-uploading of current physical health records, including prescriptions, test results, and so forth.
- Health Facility Registry:**
  - A comprehensive repository of all the health facilities of the country across different systems of medicine.
  - Comprises medical facilities—both public and private—such as clinics, hospitals, imaging centres, diagnostic labs, and pharmacies.
- Healthcare Professionals Registry:** a comprehensive database containing the identities of all medical practitioners who provide care in both traditional and modern medical systems.



### Significance of the mission

- For patients:** Accurate information will enable people to make well-informed decisions and raise the responsibility of healthcare professionals. Additionally, it will guarantee service pricing transparency and offer remote access to medical services via telemedicine and e-pharmacy.
- For healthcare professionals:** In order to prescribe more suitable and successful health therapies, they will have improved access to the medical history of their patients.
- Insurance Claim:** It will facilitate quicker reimbursement by digitizing the claims procedure.
- For policymakers:** Improved macro- and micro-level data quality will support stronger program and policy implementation and monitoring, better preventative healthcare, and advanced analytics.





5. **For researchers:** They will have the capacity to research and assess the efficacy of different initiatives and programs.

#### Challenges in the implementation of ABDM

1. **Digital divide and illiteracy:** Some segments of the population find it challenging to embrace ABDM due to the digital divide and low literacy rates.
2. **Cost:** high expense of medical data digitalization.
3. **Poor interoperability:** A number of mistakes and flaws exist in the poor interoperability between states, data migration, and interstate transfer.
4. **Lack of digital skilling:** Medical personnel need to have their digital skills and capacity built in order to be ready to employ digital tools.
5. **Concerns about personal data security and privacy:** For example, concerns about privacy and safety have been raised by the recent ransomware attack on the All-India Institute of Medical Sciences (AIIMS), in Delhi.
6. **Lack of Awareness:** Citizens' knowledge of the software and its usage is limited.
7. **Health is a state subject:** Numerous state programs and initiatives share the same goals and objectives as ABDM, resulting in a multitude of endeavours. **For example,** Kerala's eHealth project etc.

#### Way forward

1. Preserving patient information by using techniques like anonymization and making sure patient health records are kept completely private and safe.
2. Promote research and development in the fields of artificial intelligence, machine learning, and predictive analytics, particularly as they relate to digital health technology.
3. Simplifying procedures and harmonizing medical records to guarantee seamless data migration across states.
4. Boost Public Awareness: Make sure that people are aware of how to access and make use of the available digital healthcare services.
5. incorporating digital health and ABDM into the medical professional curriculum.
6. Encourage the involvement of private providers in the medical records digitization process. For instance, the goal of the Digital Health Incentive Scheme is to encourage hospitals, labs, and other stakeholders to embrace a digital health ecosystem.
  - Protecting details of patients through methods like anonymization and ensuring that the health records of the patients remain entirely confidential and secure.

#### National Health Authority (NHA)

- It is the **apex body** responsible for implementing **AB PM-JAY**. It has been entrusted with the role of designing strategy, building technological infrastructure and implementing of "National Digital Health Mission" to create a National Digital Health Eco-system.
- It is the successor of the National Health Agency, which has been functioning as a registered society since 2018. Pursuant to the Cabinet decision for full functional autonomy, the **National Health Agency was reconstituted as the National Health Authority in January 2019.**
- An attached office of the Ministry of Health and Family Welfare with full functional autonomy, **NHA is governed by a Governing Board chaired by the Union Minister for Health and Family Welfare.**
- It is headed by a Chief Executive Officer (CEO), an officer of the rank of Secretary to the Government of India, who manages its affairs. The CEO is the Ex-Office Member Secretary of the Governing Board.
- To implement the scheme at the State level, State Health Agencies (SHAs) in the form of a society/trust have been set up by respective States.



### Ayushman Bharat-PMJAY

- **About:**
  - PM-JAY is the world's largest health insurance scheme fully financed by the government.
  - Launched in February 2018, it offers a sum insured of Rs.5 lakh per family for secondary care and tertiary care.
  - Health Benefits Packages cover surgery, medical and daycare treatments, cost of medicines and diagnostics.
- **Beneficiaries:**
  - It is an entitlement-based scheme that targets the beneficiaries as identified by the latest Socio-Economic Caste Census (SECC) data.
  - The National Health Authority (NHA) has provided flexibility to States/UTs to use non-Socio-Economic Caste Census (SECC) beneficiary family databases with similar socio-economic profiles for tagging against the leftover (unauthenticated) SECC families.
- **Funding:**
  - The funding for the scheme is shared – 60:40 for all states and UTs with their own legislature, 90:10 in Northeast states and Jammu and Kashmir, Himachal and Uttarakhand and 100% Central funding for UTs without legislature.
- **Nodal Agency:**
  - The National Health Authority (NHA) has been constituted as an autonomous entity under the Society Registration Act, 1860 for effective implementation of PM-JAY in alliance with state governments.
  - The State Health Agency (SHA) is the apex body of the State Government responsible for the implementation of AB PM-JAY in the State.

## 6.3 NEWS IN SHORTS

### 6.3.1 WOMEN'S BASIC INCOME

1. **Context:** Recently Tamil Nadu launched the **Kalaignar Magalir Urimai Thogai (Women's Basic Income) scheme**.
2. **Key Points:**
  - The Women's Basic Income scheme, known as Kalaignar Magalir Urimai Thogai, will provide eligible **women a monthly stipend of Rs 1,000**.
  - Women who hold less than specified land and annual family income aged above 21 years old are eligible.
  - Similar schemes are available for women in other states like **Madhya Pradesh, Punjab, and Karnataka**.
  - **According to the Economic Survey 2016–17**, a woman's **Universal Basic Income (UBI)** would significantly increase her household's income.

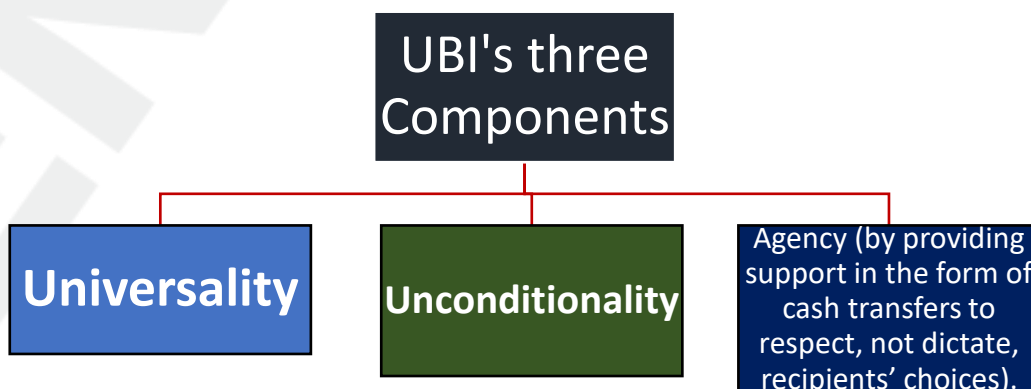


Argument in favour of UBI	Argument against UBI
1. Treats beneficiaries as agents and entrusts citizens with the responsibility of using welfare spending.	1. Might make people lazy and opt out of the labour market.
2. As all individuals are targeted, the exclusion error (poor being left out) is zero.	2. Gender disparity as men is likely to exercise control over the spending of the UBI.
3. Provides a safety net against health, income, and other shocks.	3. A cash transfer's purchasing power may severely be curtailed by market fluctuations.
4. Encourage greater usage of bank accounts, leading to improvement in financial inclusion.	4. Huge burden on the government budget.

**6.3.2 GENDER SNAPSHOT 2023**

1. **Context:** In September 2023, according to a UN report titled "**Progress on the Sustainable Development Goals: The gender snapshot 2023**," **gender equality** is not being achieved despite efforts made globally.
2. **Gender Equality:** It refers to the equal rights, responsibilities, and prospects enjoyed by every person,

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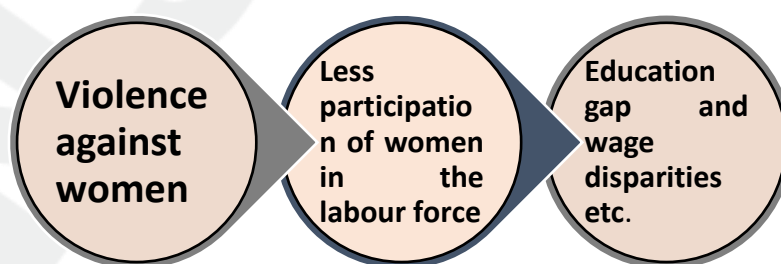


der. It involves making certain that men and women have equal access to resources, employment opportunities, education, and decision-making processes.

### 3. Key Findings of the Report:

1) <b>SDG 1 (No Poverty)</b>	<ul style="list-style-type: none"> <li>By 2030, there will still be over 340 million women and girls living in extreme poverty. By 2030, progress must occur 26 times faster in order to achieve SDG 1.</li> </ul>
2) <b>SDG 2 (Zero Hunger)</b>	<ul style="list-style-type: none"> <li>By 2030, nearly one in four women and girls will be facing moderate to severe food insecurity. Closing the gender gap in agrifood systems can increase global GDP by around \$1 trillion while lowering food insecurity.</li> </ul>
3) <b>SDG 4 (Quality Education)</b>	<ul style="list-style-type: none"> <li>Compared to 57% of boys, just 60% of girls have finished upper secondary education</li> </ul>
4) <b>SDG 5 (Gender Equality)</b>	<ul style="list-style-type: none"> <li>Compared to men, women of the future generation will perform unpaid care and domestic work for an additional 2.3 hours per day on average.</li> </ul>
5) <b>SDG 10 (Reduced inequalities)</b>	<ul style="list-style-type: none"> <li>When it comes to reporting cases of sex-based discrimination, women are twice as likely as males to do so, and they are nearly twice as likely to encounter marital status-based prejudice.</li> </ul>
6) <b>SDG 13 (Climate Action)</b>	<ul style="list-style-type: none"> <li>One direct consequence of climate change may be the forced poverty of 158 million women and girls worldwide.</li> </ul>

### Major Challenges in achieving SDGs



### 4. Recommendations:

- The research highlights that neglecting to promote gender equality could jeopardize the 2030 Agenda for Sustainable Development and advocates for increased cooperation, funding, and legislative steps to eliminate gender inequities.
- Addressing the gender gap in agrifood systems can increase global GDP by around \$1 trillion while lowering food insecurity.



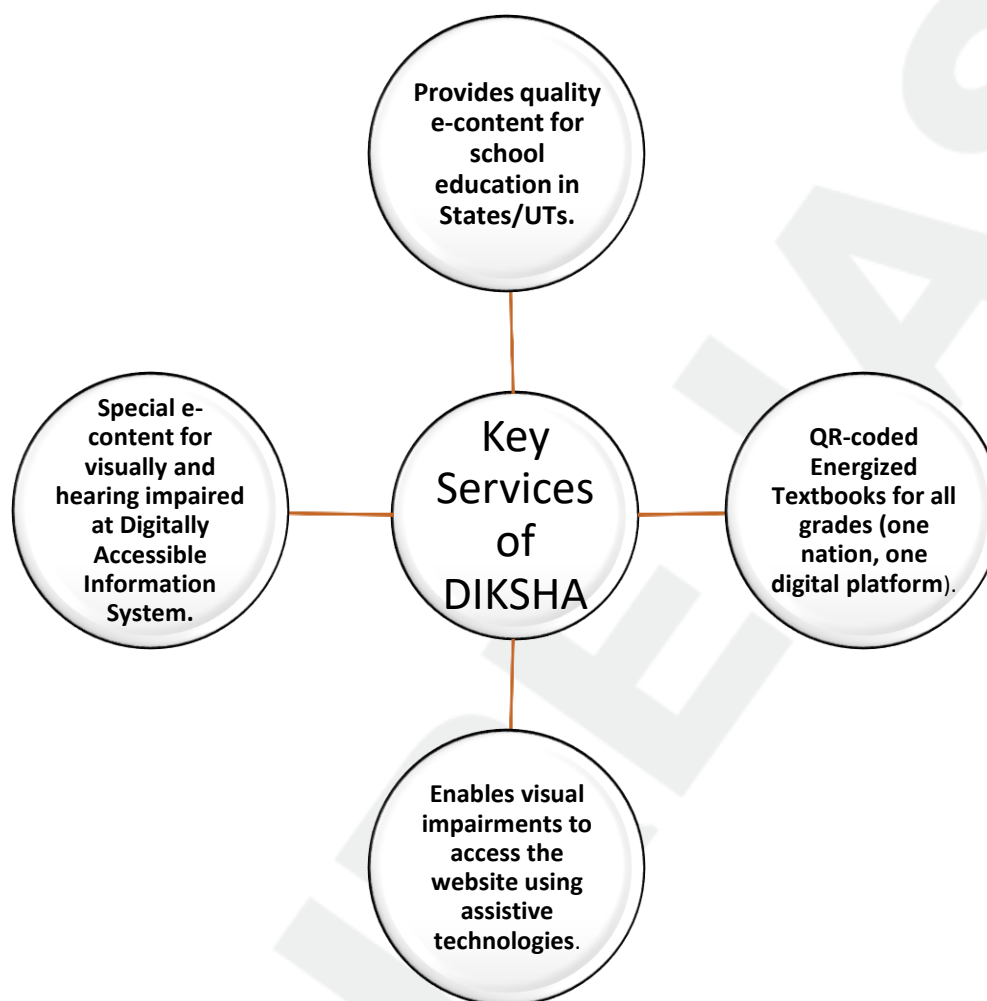


### 6.3.3 MALAVIYA MISSION - TEACHERS TRAINING PROGRAMME (MM-TTP)

1. **Context:** In September, 2023 Union Ministry of Education launches the Malaviya Mission - Teachers Training Programme by University Grants Commission
2. **About MM-TTP:**
  - o It is suggested by restructuring the Department of Higher Education's existing teacher capacity-building programs.
  - o Within two years, through a number of training centres, it aims to provide capacity-building training for teachers and staff at higher education institutions (HEIs) in accordance with the National Education Policy (NEP) 2020.
  - o The Madan Mohan Malaviya Teachers' Training Centre will also be known as the Human Resource Development Centre (HRDC).

### 6.3.4 DIKSHA PLATFORM

1. **Context:** With the aim of providing students with individualized learning experiences, the National eGovernance Division (**NeGD**) plans to integrate Personalized Adaptive Learning (**PAL**) into the Digital Infrastructure for Knowledge Sharing (**DIKSHA**) platform (Ministry of Education).
2. **Personalised Adaptive Learning (PAL):** The educational approach known as "Personalized Adaptive Learning," or "PAL," makes use of technology, especially artificial intelligence (AI), to customize the learning experience for individual students based on their unique needs, abilities, and progress.
3. **DIKSHA** is an initiative of the National Council for Education Research and Training (NCERT) under the Ministry of Education.
4. **National eGovernance Division (NeGD):** Launched by the Ministry of Electronics & Information Technology as an Independent Business Division under the Digital India Corporation.
  - o Since 2009, NeGD has been significant in helping MeitY manage programs and carry out e-government projects by offering technical and advisory support to departments and ministries at the federal, state, and local levels as well as other government agencies.
  - o Numerous National Public Digital Platforms, including DigiLocker, UMANG, Rapid Assessment System, OpenForge, API Setu, Poshan Tracker, Academic Bank of Credits, etc., have been developed and are being managed by it.



### 6.3.5 NCERT ATTAINS DEEMED UNIVERSITY STATUS

1. **Context:** NCERT has been granted the status of deemed to be university.

2. **Benefits of Deemed university status:**

- Additionally, they don't need permission from any other body to introduce new programs and courses that are pertinent to the shifting demands and needs of the education industry.
- For faculty development, research projects, academic exchange, and student mobility, they can work with both domestic and foreign universities and institutes.
- They can draw in more funds from other sources and a greater number of faculty members and students from different areas and backgrounds.
- They are able to take on a more proactive role in putting the NEP 2020 into action, which calls for a revamp of the Indian school system.

#### Deemed University

- A deemed university is an institution of higher education that is recognised by the University Grants Commission (UGC) under Section 3 of the UGC Act, 1956.
- It is not established or incorporated by an Act of Parliament or State Legislature, but is conferred the status of a university by the central government on the recommendation of the UGC.
- A deemed university enjoys academic autonomy and can design its own courses, syllabi, admission criteria, fee structure, faculty recruitment and examination system.



### 6.3.6 NMC GETS WFME RECOGNITION

1. **Context:** The National Medical Commission (NMC) has been awarded the World Federation for Medical Education (WFME) Recognition Status for 10 years.
2. **Benefits of WFME Accreditation:**
  - India's 706 existing medical colleges will all receive WFME accreditation.
  - In the next ten years, all newly established medical colleges will automatically receive WFME accreditation.
  - Additionally, it will make it possible for Indian medical graduates to continue postgraduate studies and practice in nations including the US, Canada, Australia, and New Zealand that want WFME accreditation.
  - It will boost Indian medical professionals' and schools' reputation and recognition abroad.
  - It makes scholarly exchanges and collaborations easier and encourages innovation and ongoing development in medical education.
  - Because of our internationally acclaimed standards, it will also make India an attractive choice for foreign students.

#### World Federation for Medical Education (WFME)

1. WFME was founded in 1972 by the World Medical Association, the World Health Organization (WHO), the regional organizations of medical schools and academic teachers, and the International Federation of Medical Students Associations.
2. WFME is a global organization dedicated to enhancing the quality of medical education worldwide.
3. WFME has developed and published global standards for basic, postgraduate, and continuing medical education, as well as guidelines for distributed and distance learning in medical education.

### 6.3.7 AYUSHMAN BHAV CAMPAIGN

1. **Context:** The President of India virtually launched the Ayushman Bhav campaign.
2. The goal of providing comprehensive healthcare coverage to every village and town is a collaborative effort led by Gram Panchayats.
3. **It has 3 components:**
  - **Ayushman Apke Dwar 3.0:** To give Ayushman cards to the remaining eligible beneficiaries in the PM-JAY scheme.
  - **Ayushman Melas:** To make it easier to issue Ayushman Bharat Cards and create Health IDs.
  - **Ayushman Sabhas:** To raise awareness about important health schemes and illnesses.



## 7.

## SCIENCE &amp; TECHNOLOGY

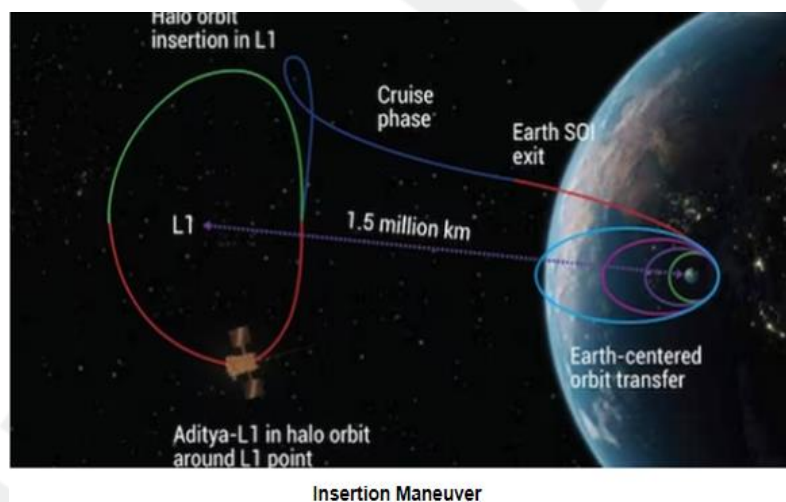
## 7.1 ADITYA-L1

## Context

On September 2, 2023, ISRO successfully launched India's first space-based observatory-class solar mission to study the Sun.

## More on News

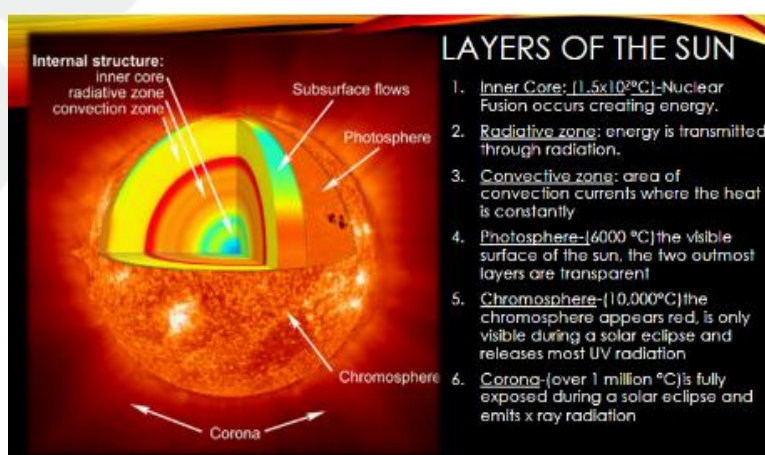
- On September 18, ISRO successfully executed the trans-Lagrangian point 1 (L1) **Insertion maneuver**.
  - The spacecraft commences its 110-day trajectory towards its destination around the L1 Lagrange point.
- The Aditya Solar Wind Particle EXperiment (ASPEX) payload has initiated the collection of scientific data using the Supra Thermal & Energetic Particle Spectrometer (STEPS) instrument.
  - The STEPS system consists of six sensors that measure supra-thermal and energetic ions in various directions.
  - Scientists utilize data from Earth's orbits to analyze particle behavior, particularly in the presence of Earth's magnetic field.
  - STEPS measurements will continue throughout the duration of Aditya L1 mission.



Insertion Maneuver

## Project Aditya – L1

- About:** Aditya-L1 is the first Indian space-based observatory-class mission to study the Sun from 1.5 million kilometers, taking 125 days to reach the L1 point.
  - ISRO's second astronomy observatory-class mission, Aditya-L1, follows the successful AstroSat (2015) mission.
  - The mission's journey is significantly shorter than India's previous Mars orbiter mission, Mangalyaan.
  - The spacecraft is set to orbit around Lagrangian point 1 (L1) in the Sun-Earth system.
- Launch vehicle: PSLV C57** (25th mission using PSLV XL configuration).
  - ISRO fired its fourth stage twice, marking a first in the spacecraft's history, to precisely insert it into its elliptical orbit.
- Objectives of the mission:**
  - Mission focuses on the dynamics of the solar upper atmospheric, specifically the chromosphere and corona.
  - The study explores chromospheric and coronal heating, physics of partially ionized plasma, **coronal mass ejections (CMEs)**, and **solar flares**.



## LAYERS OF THE SUN

- Inner Core:** (1.5x10<sup>7</sup>°C)-Nuclear Fusion occurs creating energy.
- Radiative zone:** energy is transmitted through radiation.
- Convective zone:** area of convection currents where the heat is constantly
- Photosphere:** (6000 °C) the visible surface of the sun, the two outmost layers are transparent
- Chromosphere:** (10,000°C) the chromosphere appears red, is only visible during a solar eclipse and releases most UV radiation
- Corona:** (over 1 million °C) is fully exposed during a solar eclipse and emits x ray radiation





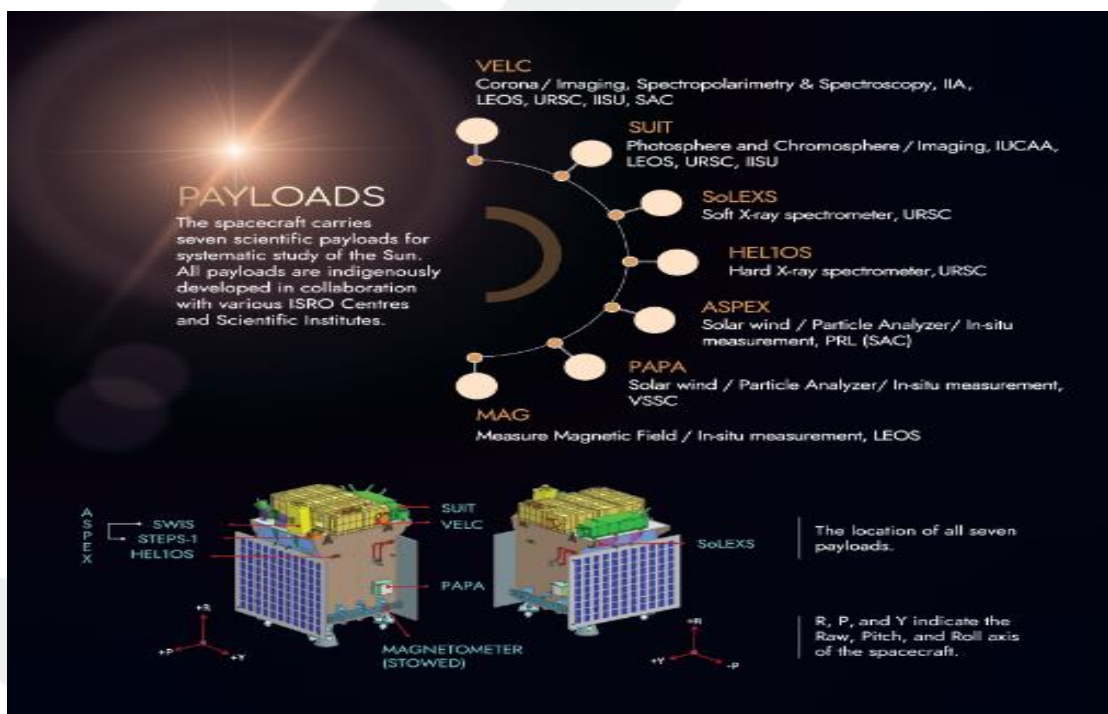
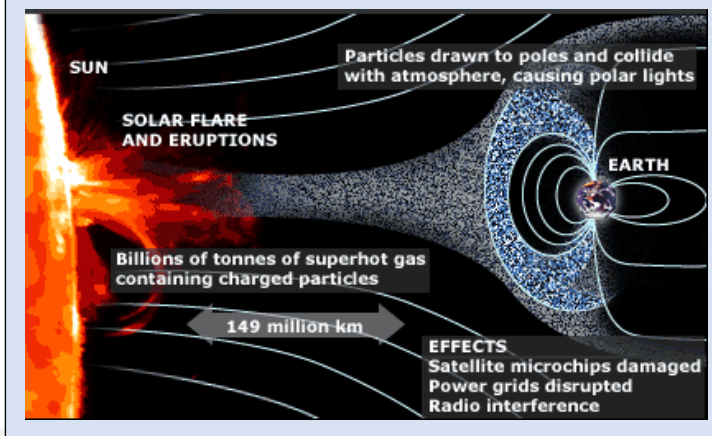
- Focus is on observing the in-situ particle and plasma environment, providing data for understanding particle dynamics from the Sun.
- The sequence of processes occurring at multiple layers, including the chromosphere, base, and extended corona, ultimately leads to solar eruptive events.
- The study explores the origin, composition, and dynamics of solar wind, which are key drivers for space weather.

**Coronal Mass Ejections:**

- Massive plasma and magnetic field expulsions from the Sun's corona are expelled into interplanetary space.

**Solar Flares:**

- are massive plasma and magnetic field expulsions from the Sun's corona that propagate into interplanetary space.



**4. Payloads:**

- L1 carries **7 payloads** (5 by ISRO and 2 by Indian Academic institutes)

**5. New aspects of Mission:**

- The solar disk in the near UV band will be spatially resolved for the first time.
- It will provide insights into the inconsistent acceleration regime of CME which is not observed consistently.
- The system utilizes on-board intelligence to detect CMEs and solar flares, thereby optimizing observations and data volume.
- The study investigates the directional and energy anisotropy of solar wind through multi-direction observations.



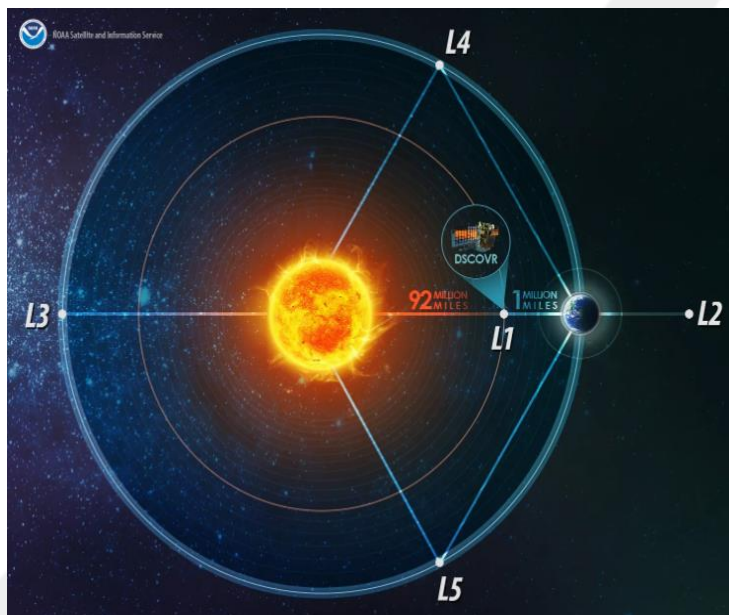
## About Lagrangian points

### 1. Definition:

- Lagrange Points are the positions in space where a small object tends to remain if placed in a two-body gravitational system.

### 2. Details:

- **L1:** L1 is a crucial Lagrange point for solar observations, offering continuous monitoring of the Sun without any occultation or eclipses when placed in a halo orbit.
- **L2:** L2, positioned directly behind Earth, is ideal for observing the larger Universe without Earth's shadow interference.
- **L3:** The satellite, located behind the Sun and just beyond Earth's orbit, provides potential observations of the far side of the Sun.



- **L4 & L5:** The objects at L4 and L5 maintain stable positions, forming an equilateral triangle with the larger bodies.

### 3. Stable and Unstable Points:

- Unstable Lagrange Points (L1, L2, and L3) points require regular course corrections for satellites to maintain their positions due to the risk of a small perturbation.
- Stable Lagrange Points (L4 and L5), on the other hand, form the apex of two equilateral triangles that have the large masses at their vertices.

### 4. Importance of Lagrange Points:

- Spacecraft can utilize points in space for two body systems like Sun and Earth, allowing them to remain at these positions with reduced fuel consumption.
- The satellite's placement around L1 provides continuous observation of the Sun without any occultation or eclipses.

### 5. Working Mechanism:

- At Lagrange point, the gravitational pull of two large bodies equals the centripetal force needed for a small object to move with them.

### 6. Miscellaneous:

- Lagrange points are named after the renowned Italian-French mathematician, Joseph-Louis Lagrange.
- Lagrange point L1 is located between the Sun-Earth line and is approximately 1% of the Earth-Sun distance.
- NASA-ESA's SOHO mission is situated near L1 point, while NASA's James Webb Space Telescope is situated around L2 point.

## Significance of Exploring the Sun

- 1. Understanding Our Solar System:** The Sun, the center of our solar system, significantly influences the behavior of other celestial bodies, and studying it enhances our understanding of our solar neighborhood dynamics.
- 2. Space Weather Prediction:** Solar activities like solar flares and coronal mass ejections can significantly influence Earth's space environment.
  - Understanding these phenomena is crucial for predicting and addressing potential disruptions to communication systems, navigation, and power grids.
- 3. Advancing Solar Physics:** The study of the Sun's intricate behavior, including its magnetic fields, heating mechanisms, and plasma dynamics, significantly enhances knowledge in fundamental physics and astrophysics.



4. **Enhancing Energy Research:** Studying the Sun's core and nuclear reactions can provide insights for pursuing clean and sustainable fusion energy on Earth.
5. **Improving Satellite Operations:** Solar radiation and wind impact satellite and spacecraft operations, requiring better design and operation due to their interplay.

#### Government Schemes for Space Sector

- **ANTRIX:** ISRO's business branch is called Antrix, which markets ISRO's space products and technologies to a global audience.
- **Launching of the Indian Space Association (ISpA):** In 2021, the Government of India launched the Indian Space Association (ISpA) to open the Indian space industry to private sectors and start-ups. Several private companies like Larsen & Toubro, Nelco (Tata Group), OneWeb, MapmyIndia, Walchandnagar Industries are founding members of this organization.
- **Establishment of IN-SPACE:** The Indian National Space Promotion and Authorization Centre (IN-SPACE) was mandated with the task of promoting, authorizing and licensing private players to carry out space activities.
- **Establishment of NSIL:** New Space India Ltd (NSIL), is mandated to transfer the matured technologies developed by the ISRO to Indian industries.
- **New Space Activities Bill:** NALSAR Centre for Aerospace and Defence is drafting a new Space

#### Conclusion

ISRO's mission represents the nation's dedication to advancing scientific knowledge and securing its place on the global space exploration stage. Furthermore, it will help India in realizing its dream of becoming Atmanirbhar in space sector too.

## 7.2 TIDAL LOCKING

#### Context

On September 22, 2023, Chandrayaan-3's Vikram lander and Pragyan rover, which were previously in sleep mode, were scheduled to be awoken marking the first lunar sunrise since August 23.

#### More on News

The Chandrayaan-3 mission, powered by solar energy, was designed to land on the Moon during the lunar daylight period.

- The Chandrayaan-3 Mission's electronics face challenges due to the high diurnal temperature range on the Moon and the extremely low temperatures during the Lunar Night.
- The lander and rover were temporarily suspended just before lunar sunset.

#### Mission Chandrayaan-3

- 1) **About: Chandrayaan-3** is the **first mission in world to soft-land on the lunar south pole**, a region that has never been explored before. The mission aimed to demonstrate safe and soft lunar landing, rover mobility, and **in-situ scientific experiments**.
- 2) **Details:**
  - Chandrayaan-3 is anticipated to operate for at least one lunar day (14 Earth days) on the lunar surface.
    - The **Pragyan** rover will conduct experiments and send data and images to the lander within a 500-meter radius around the landing site.
    - The **Vikram** lander will transmit data and images to an orbiter, which will then transmit them to Earth.
  - **Lander and Rover modules** are collectively equipped with advanced scientific payloads.
    - These instruments are designed to conduct comprehensive lunar studies, including terrain analysis, mineralogical composition, surface chemistry, atmospheric attributes, and exploration for water and resource reservoirs.
    - The propulsion module, carrying a lander and rover to 100 km lunar orbit, also includes a Spectro-polarimetry of Habitable Planet Earth (SHAPE) payload for Earth spectral and Polarimetric





## INDIA'S THIRD DATE WITH THE MOON

India will launch its third mission, Chandrayaan-3, to the moon in an attempt to land on its surface in 2020-21. The mission will target a soft-landing near the lunar South Pole later this year or early next year

- 1** GSLV Mark-III (left) had to be operationalised for launching Chandrayaan-2 due to its heavy payload. Chandrayaan-3 will be much lighter as no orbiter would be stacked on it. Isro, however, has not specified the rocket type to be used in Chandrayaan-3
- 2** Chandrayaan-3's payload will be similar to Chandrayaan-2 (above). It will have a lander, rover, like its previous iteration. Since it will not carry and orbiter, a propulsion module will be added to the lander. Isro already has a set of backup lander-rover unit that may be used after some modifications
- 3** The orbiter from Chandrayaan-2 that's already in place will be used by the lander-rover to communicate with Earth. The orbiter, which originally had a mission life of one year, has been given an extension in mission life — it will be operational for 7 years
- 4** The lander-rover is expected to land close to the lunar South Pole like Chandrayaan-2. Changes will be made to the sequence of powered descent, during which a velocity loss had caused the Chandrayaan-2's lander-rover to crash. Isro has not yet revealed the details of the lander

**MISSION COST**

Mission	Cost
Chandrayaan-2	₹960cr
Chandrayaan-3	₹610cr

Chandrayaan-3 breakdown:  
 Lander-rover: ₹250cr  
 Launch rocket: ₹360cr

### About Lunar Day

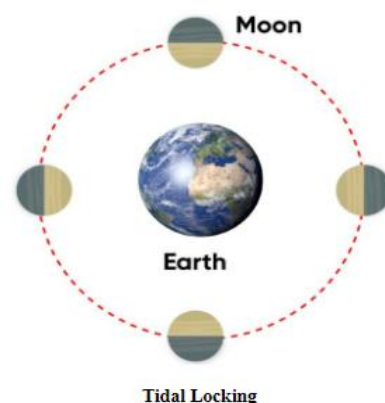
- 1. Definition:** A Lunar Day is the lunar period it takes for the moon to complete one rotation with respect to the Sun.
- 2. Duration:** One mean solar day on the Moon is 29.5 Earth days, while one mean solar day on Earth is 24 hours.
  - The lunar day, or daylight, lasts approximately two weeks, followed by two weeks of lunar night.
- 3. Diurnal temperature range:**
  - The lunar equator experiences daytime temperatures reaching 250°F (120°C) and nighttime temperatures dropping to -208°F (-130°C).
  - The high diurnal temperature range is attributed to the absence of an atmosphere and the Moon's tidal locking with Earth.
  - The atmosphere regulates extreme temperatures by transferring heat around the planet.

### Effect of Lunar night

- 1. Enriches R&D:** The Moon lacks an atmosphere to distribute heat, resulting in each object having its own unique time to heat up and cool down.
  - **Example,** Lunar rocks take longer to heat up and cool down than lunar soil.
  - The varied heating and cooling rates enable the identification of regions containing substantial amounts of rocks.
- 2. Shapes Moon missions:** The survival of spacecraft systems is significantly hindered by extremely low temperatures.
  - Moon missions require a non-solar energy supply to survive lunar nights.
  - Nuclear power sources, reactors, and radioisotope power sources (RPS) are the most promising candidates for energy generation.

### About Tidal Locking

- 1. Definition:** Tidal Locking refers to synchronization between the Moon's rotation around its axis (with respect to the Sun) and its orbit around Earth.
- 2. Causation:** The phenomenon is attributed to the gravitational force exerted by the Moon and Earth on each other.
- 3. Effects of Tidal locking:**
  - **Only one side of moon visible:** The Moon has two sides, one facing Earth and the other cloaked in darkness, resulting in two distinct lunar sides.
    - **Near Side:** approximately 60% is visible from Earth.
    - **Far side:** The lunar portion that is not visible from Earth.







- ✓ During the 'new moon' phase, the moon's 'far side' is illuminated by sunlight, remaining invisible from Earth for nearly a fortnight.
  - ✓ The dark state of the object is due to its hidden topographical features, which were captured by the Soviet spacecraft Luna 3 in 1959.
  - ✓ Apollo 8 astronauts in 1968 were the first humans to observe the moon's far side.
4. **Change in Shape:** The stronger gravitation force exerted on sides facing each other causes bodies to stretch and distort.
    - The Moon is deformed by Earth's gravitational force, resulting in slight squashing at the poles and a bulge at its equator.
    - The same type of deformation occurs in Earth's oceans, resulting in alternating high and low ocean tides
  5. **Slow rotation:** Tidal torque is a force that reduces the rotation of the planet.
    - The Moon's rotation speed was faster during its formation than it does today.
    - Earth's tidal interactions with the Moon are causing a slowdown.
  6. **Hospitability:** The potential hospitability on the moon is influenced by the high diurnal temperature range.

#### Tidal Locking in the Universe

1. All The solar system's large moons are tidally locked with their planets.
  - Bigger moons synchronize early in their existence within hundreds of thousands of orbits.
2. Some binary stars are tidally locked to one another
3. Evidence is indicating that numerous planets beyond our solar system are tidally locked with their stars.

## 7.3 BATTERY ENERGY STORAGE SYSTEM (BESS)

### Context

#### Viability Gap Funding Scheme

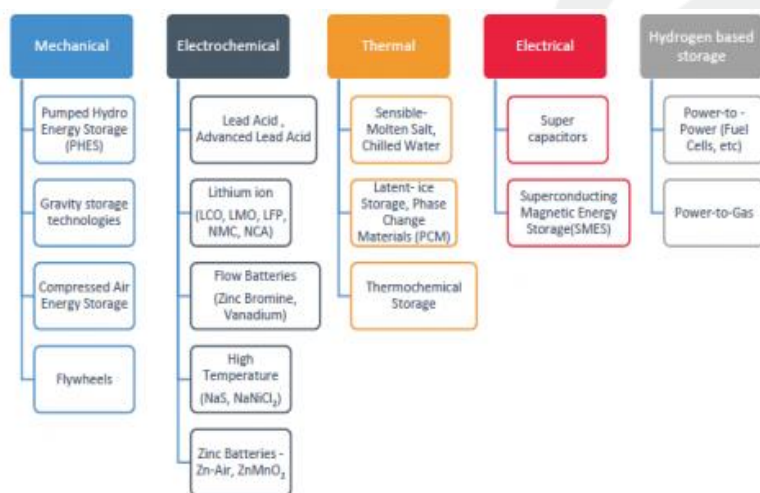
1. **Definition:** VGF is a government financial mechanism used to bridge the gap between infrastructure project costs and economic viability, often used in projects deemed unattractive for private investors.
2. **About:**
  - The scheme is strategically designed to utilize renewable energy sources like solar and wind power to provide clean, reliable, and affordable electricity to citizens.
  - The selection of BESS developers for VGF grants will be conducted through a transparent competitive bidding process, ensuring equal opportunities for both public and private sector entities.
  - The government will offer up to 40% of the capital cost as budgetary support in the form of VGF.
3. **Objective:**
  - The scheme aims to establish 4,000 MWh of BESS projects by 2030-31.
  - The scheme's benefits will be accessible to consumers by ensuring that 85% of the BESS project capacity is made available to Distribution Companies (Discoms).
  - Scheme envisages development of 4,000 MWh of BESS projects by 2030-31.
  - Scheme targets to achieve a Levelized Cost of Storage (LCoS) ranging from ₹5.5-6.6 per kWh, to make stored renewable energy a viable option to manage peak power demand.
4. **Significance:**
  - India's government pledges to promote clean energy solutions through the BESS Scheme, leveraging renewable energy and battery storage to achieve this vision.
  - The initiative aims to foster a greener and brighter future for all citizens, in line with global sustainability objectives.

On 6<sup>th</sup> September 2023, The Union Cabinet has approved a Viability Gap Funding (VGF) scheme for the development of a Battery Energy Storage System.



## About Battery Energy Storage System (BESS)

- Definition:** It is categorized under the electrochemical storage system which uses different electrochemical reactions to store electricity.
- Application:** Energy Storage Systems (ESS) have diverse applications in the energy sector, serving at various levels in generation, transmission, and distribution, either independently or as part of power system infrastructure.



Classification of Energy Storage Technologies

### 3. Types of BESS:

- **Standard (non-flow) batteries:** The structure comprises pairs of electrodes, each one immersed in an electrolyte, separated by non-conducting materials. Example: Lead-Acid (PbA) battery
- **Flow batteries:** The system utilizes electrolyte tanks and membranes to regulate electron flow, while pumps are used to regulate electrolyte flow.
  - Redox Flow Battery (RFB)
  - Hybrid Flow Battery (HFB)

## Need of domestic manufacturing of BESS

### 1. Environmental:

Would help in achieving the **Panchamrit targets** (COP 26 of UNFCCC).

- The implementation of this strategy will not only help in reducing air pollution in urban areas but also in reducing emissions.
- Integration of renewable energy sources (RE) with the grid will ensure stable and flexible power system operation.

### 2. Social:

The opportunities for skill development, incubation centers, and entrepreneurship programs are increasing.

- IESA predicts that the Advanced Chemistry Cells (ACC) battery manufacturing program, with plans of 50 GWh, will create at least 5 lakh employment opportunities.

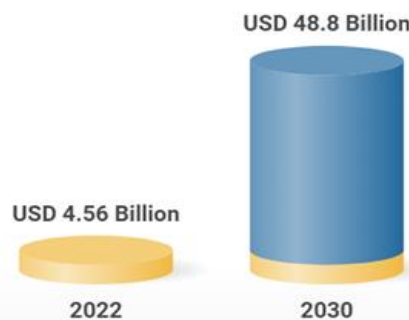
### 3. Economic:

The goal is to decrease battery cell imports and prevent the outflow of forex reserves.

- Advanced cell manufacturing is expected to significantly boost the deployment of electric vehicles and decrease oil imports.
- The increasing demand for domestic raw materials may lead to the growth of the mining sector.

## Global Residential Lithium-ion Battery Energy Storage Systems Market

Market forecast to grow at a CAGR of 32.1%



### Prelims fact

- The Geological Survey of India (GSI) discovered Lithium reserves in J&K's Salal-Haimana area of Reasi District, with 5.9 million tonnes of Lithium inferred resources (G3) established.

## Challenges of battery manufacturing in India

- Raw material availability:** Low reserves of in-house materials like lithium, cobalt, nickel, and battery-grade graphite are essential for manufacturing electrodes and electrolytes.



- The absence of major partnerships or bilateral agreements with major raw material producing countries like Australia, Chile, and Brazil is significant.
- 2. **Policies and regulations:** Policy uncertainty, including the discontinuation of tax holidays and reduction of accelerated depreciation benefits, is a significant concern.
- 3. **Technology and material science:** The issue of inadequate technology transfer and information exchange due to technology patents is a significant concern, thereby limiting the technical expertise at local levels.
  - The lack of high-quality R&D infrastructure for advanced cell and battery manufacturing research is a significant issue.
  - The absence of EV and storage policies and a dedicated component to support indigenous battery manufacturing at the state level is evident.
- 4. **Financing:** Banks and financial institutions are hesitant to lend for new technology due to a lack of technical expertise and a standardized financial model.
  - The issue of financing is exacerbated by the lack of assured offtake and a guaranteed market.
- 5. **Other key challenges:**
  - The Li-ion battery manufacturing market's growth may potentially impact the livelihoods of lead acid technology supply chain players.
    - The domestic industry is urged to safeguard itself from the high-quality and low-cost Chinese imports.

#### Measures Needed

1. **Demand creation:** The implementation of a soft loan facility is being implemented for Discoms/transmission companies to deploy energy storage and battery solutions.
  - The initiative aims to boost demand for e-buses, e-cabs, and e-autos through MoUs and firm-contracts with state transport units, cab aggregators, and railway operators.
2. **Phased manufacturing programme:** The state should provide adequate support to encourage investors in advanced cell manufacturing.
  - Manufacturers in India must add at least 50% value to the cell manufacturing ecosystem to qualify for subsidy.
  - State governments can offer various support categories, such as infrastructure support and provisions for subsidized utilities like electricity.
3. **Taxation:** The proposed reforms aim to reduce imports of batteries, promote domestic procurement, provide tax holidays to battery manufacturers, and incentivize in-house R&D.
4. **Recycling and sustainability:** The goal is to transition from an 'End-of-Life' approach to a 'circular economy' in BESS through the effective implementation of Extended Producer Responsibility (EPR).

#### Steps taken by Government for BESS in India

1. Bidding Guidelines for Battery Energy Storage Systems (BESS) notified by the MoP in March 2022.
2. National Framework for Promoting Energy Storage Systems unveiled by the MoP in August 2023.
3. Battery Waste Management Rules, 2022 to promote circular economy in BESS sector.
4. Legal status for Energy Storage Systems (ESS) as a Generator, Transmission or Distribution element, issued by Ministry of Power (MoP) on in January 2022.
5. CII suggested that an 'India Rare Earths Mission' be set up manned by professionals, similar to the India Semiconductor Mission, as a critical component of the Deep Ocean Mission.

#### Conclusion

India needs to establish a new **Department for Rare Earths (DRE)** to serve as a regulator and enabler for businesses in this area. This will help India to become self-sufficient in rare earth metals like Lithium which in turn will help to make developmental programs of Battery Energy Storage System a success.



## 7.4 VANADIUM

### Context

On 18<sup>th</sup> September 2023, The Geological Survey of India (GSI) has discovered vanadium, a crucial industrial raw material, in sediment samples from the Gulf of Khambhat, off Alang in Gujarat.

### More about news

1. Samples from the Gulf of Khambhat have identified titanomagnetite, an ore containing vanadium.
  - Titanomagnetite, a primary source of vanadium, is formed when molten lava cools rapidly, accounting for 88% of the world's vanadium extraction.
2. GSI reports that Deccan basalt deposits in the Gulf were primarily drained through the Narmada and Tapi rivers.
3. The first report of vanadium occurrence in India's offshore sediments has been published.

### About Vanadium

1. The chemical element "V" with an atomic number 23 is classified as a **transition metal**.
2. It is abundant in the earth's crust, ranking 22<sup>nd</sup> in the upper continental crust.
3. Government of India has identified it as one of the 30 critical minerals.
4. It is found in approximately 65 minerals, including magnetite, vanadinite, carnotite, and patronite, but rarely exists as a free element in nature.
5. It can be detected spectroscopically in the Sun's rays and occasionally in the light of other stars.
6. **Physical Properties:**
  - Under standard conditions, it is a hard, silvery-grey metal.
  - The material is highly ductile, malleable, and resistant to corrosion, allowing it to be drawn into wires and hammered into thin sheets.
  - At room temperature, it does not react with water or oxygen.

### Geological Survey of India

- **Origin:** Established in 1851, it is a Government of India organization under the Ministry of Mines
- **Offices:** Headquartered in Kolkata, has six regional offices in Lucknow, Jaipur, Nagpur, Hyderabad, Shillong and Kolkata.
- **Functions:**
  - The main functions of GSI are to conduct geological mapping, mineral exploration, geotechnical studies, natural hazard assessment, and geo-environmental studies
  - Conducting geological surveys
  - Prime provider of basic earth science information to government, industry and general public
  - Official participant in steel, coal, metals, cement, power industries and international geoscientific forums

### Transition Metal

- The transition metals are the metallic elements that serve as a bridge, or transition, between the two sides of the table.







### Significance of Vanadium

1. Economic Potential	• Exploration and mining activities can generate revenue and create jobs in the region.
	• The export of vanadium has the potential to significantly boost India's foreign exchange earnings.
	• The discovery of vanadium is significant as it is scarce in India and primarily found in a few regions.
2. Reducing Import Dependency	• India is a significant consumer of vanadium, but it heavily relies on imports.
3. Strategic Importance	• Vanadium is a vital component in the Defence and aerospace sectors.
	• India can ensure a stable supply for strategic purposes.
	• Use of vanadium in crucial aerospace components has the potential to enhance national security.
4. Technological Advancement	• The presence of vanadium is believed to facilitate technological advancements.
	• Advancement of vanadium-based technologies can result in significant innovations.
	• The advancements in vanadium batteries have the potential to significantly enhance India's energy storage infrastructure.
5. Environmental Impact	• Vanadium redox batteries are renowned for their minimal ecological impact.
	• The widespread use of Virtual Reality Buildings (VRBs) has the potential to significantly enhance the sustainability of the energy ecosystem.
6. International Collaboration	• The collaboration involves partnering with countries like China, Russia, and South Africa, each with a specific vanadium expertise.
	• Bilateral agreements can significantly enhance the trade and investment opportunities in vanadium.

### Applications of Vanadium

1. **Energy storage:** Used in vanadium redox flow batteries, a type of rechargeable battery used for large-scale energy storage in renewable energy systems.
2. **Steel manufacturing:** This element is utilized in steel production as an alloying component, enhancing steel's strength, toughness, and heat resistance.
  - The addition of 0.15% vanadium can significantly enhance the strength of cast iron by 10-25%.
3. **Catalysts:** Vanadium compounds serve as catalysts in the production of various materials, including chemicals and plastics.
4. **Nuclear reactors:** Vanadium alloys are utilized in the production of nuclear reactors due to their low neutron absorption properties.
5. **Medicine:** This substance is utilized for the treatment of both prediabetes and diabetes.
6. **Aerospace and aviation:** This material is commonly utilized in the production of aerospace and aviation components due to its exceptional strength, light weight ness, and heat resistance properties.
7. **More Applications:**
  - It is utilized in the production of pigments, ceramics, and as a reducing agent in metallurgy.



**Vanadium Reserves**

- India:** According to the Indian Bureau of Mines, the total estimated reserves of Vanadium in India is around 24.63 million tonnes. In 2021 vanadium reserves were also found in **Arunachal Pradesh**
- Global: Brazil** is the world’s largest exporter of vanadium (one-fourth of total exports), with Russia and South Africa as the next exporters. **China** has the highest vanadium reserves and producer in the world as of 2022.

**Issues related to Vanadium use**

- Occupational hazard:** Vanadium oxides can produce severe toxic effects on human health.
- Environmental:** Improper disposal can lead to soil and water pollution.
- Raw material dearth:** Few countries control its supply and production.
- R&D in nascent phase:** Adoption of VFRB batteries still in the early stages.

**About vanadium redox flow batteries (VRFB)**

- Definition:** These are rechargeable flow batteries that utilize vanadium ions as active materials.
- Mechanism:**
  - VRFBs utilize two electrolyte tanks connected to a stack of cells to store their energy.
  - Vanadium is characterized by its unique four distinct stages of oxidation.
  - Vanadium, with varying electrical charges, serves as a catalyst for energy storage in each of the four stages.



VRFB and Li Ion Battery		
	VRFB	Lithium-ion batteries
<b>1. Lifespan</b>	The Longer life cycle can handle more charge-discharge cycles.	Over time, capacity declines and diminishes.
<b>2. Application</b>	It is suitable for large-scale industrial-scale operations.	It is suitable for small devices like laptops and cellphones.
<b>3. Cost</b>	Initial installation cost is higher but it is more economically viable in the long run.	Initial cost is less
<b>4. Safety</b>	Safer method involves using aqueous electrolytes, which are non-flammable.	safer method involves using aqueous electrolytes, which are non-flammable.
<b>5. Capacity expansion</b>	Larger electrolyte storage tanks can make it easier.	Difficult to expand.
<b>6. Energy Density</b>	Lower energy density	Higher energy densities
<b>7. Sustainability</b>	vanadium electrolyte can be easily reused and repurposed in other batteries.	Lithium extraction is currently challenging and uneconomical.

**Conclusion**

Demand for vanadium is expected to increase due to its increasing usability. VRFB’s potential as a renewable, sustainable, and highly safe energy-storage system make it an exciting technology. R&D efforts will have to be initiated to meet the domestic demand for vanadium.



## 7.5 Y-CHROMOSOME

**Context:** In Aug, 2023, Scientists have successfully sequenced the Y-chromosome using 'long-read' sequencing techniques.

**More on News:**

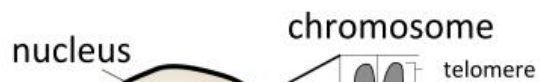
1. Y is the final human chromosome to be sequenced end-to-end or telomere-to-telomere (T2T).
  - o Telomeres are structures composed of DNA sequences and proteins that protect and cap the end of a chromosome.
2. The sequencing can improve understanding of many health conditions thought to be related to the changes in the genes on the Y chromosome.
  - o Loss of the Y chromosome is linked to an increased risk of cancer, Alzheimer's disease, and cardiovascular disease.

**About Chromosomes and their sequencing:**

1. Chromosomes are protein-like structures with a single DNA molecule that transport genomic information between cells.
2. They are found in the nucleus of cells in plants and animals, including humans.
3. Humans have 22 pairs of numbered chromosomes (autosomes) and one pair of sex chromosomes (XX or XY), for a total of 46 (23 pairs).

**About Y-chromosome:**

1. **Definition:** This is one of the two human sex chromosomes, with X being the other.
  - o Human genome consists of 22 autosome pairs and one pair of sex chromosomes (XX in female and XY in male).
2. **Sex determination:** Y chromosome is male-determining due to its presence of SRY genes, which are responsible for specific sex characteristics like testes.
  - o Y also possesses a significant amount of 'junk DNA', which are sequences that do not seem to contribute to any specific traits.
  - o The Y chromosome, comprising 66% of repetitive DNA, necessitates specialized sequencing and analysis techniques to determine their arrangement.
  - o Individuals with a Y chromosome are related to a single Y-bearing ancestor, likely around 300,000 years ago.
3. **Direction of Inheritance:** Individuals with a Y chromosome are related to a single Y-bearing



### Comparison between X – and Y - Chromosome

X-Chromosome	Y-Chromosome
--------------	--------------

1. Genes inherited from Father & Mother both	Genes inherited from mother only
2. Genes inherited from both	Genes inherited from mother only
3. Genes inherited from both	Genes inherited from mother only
4. Genes inherited from both	Genes inherited from mother only

#### The Whole Genome Sequencing (WGS) Process

WGS is a laboratory procedure that determines the order of bases in the genome of an organism in one process. WGS provides a very precise DNA fingerprint that can help link cases to one another allowing an outbreak to be detected and solved sooner.

1. **DNA Extraction:** Scientists take bacterial cells from an agar plate and treat them with chemicals that break them open, releasing the DNA. The DNA is then purified.
2. **DNA Shearing:** DNA is cut into short fragments of known length, either by using enzymes "molecular scissors" or mechanical disruption.
3. **DNA Library Preparation:** Scientists make many copies of each DNA fragment using a process called polymerase chain reaction (PCR). The pool of fragments generated in a PCR machine is called a "DNA library."
4. **DNA Library Sequencing:** The DNA library is loaded onto a sequencer. The combination of nucleotides (A, T, C, and G) making up each individual fragment of DNA is determined, and each result is called a "DNA read."
5. **DNA Sequence Analysis:** The sequencer produces millions of DNA reads and specialized computer programs are used to put them together in the correct order like pieces of a jigsaw puzzle. When completed, the genome sequence containing millions of nucleotides (in one or a few large pieces) is ready for further analysis.

g genes)

s, before

transcript

fragment,

easier-to-



ancestor, likely around 300,000 years ago.

### Conclusion

Sequencing Y chromosome would further enrich the knowledge that we have gained from the **Human Genome Project** about the human genetic structure, which would further help in advanced studies of **Genetic Engineering** including technologies like **CRISPER CAS-9 and Genome Editing**.

## 7.6 GENE-DRIVE TECHNOLOGY (GDT)

### Context

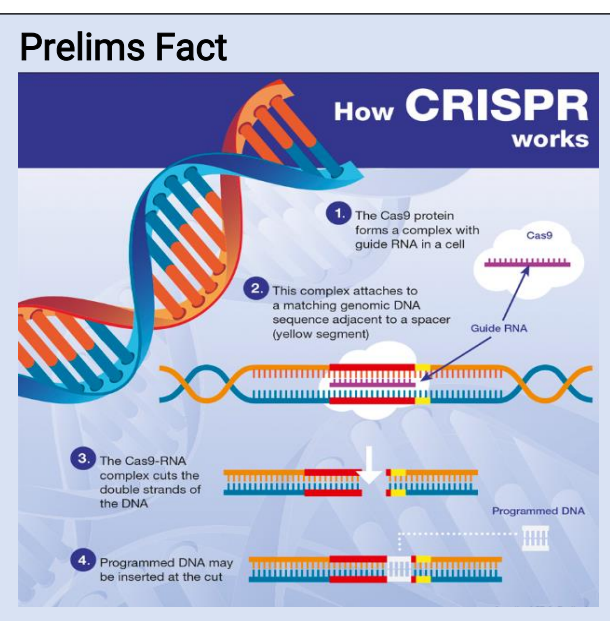
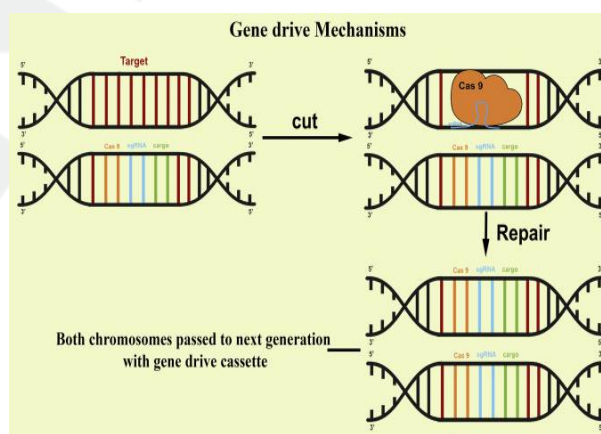
In September, 2023 Genetically, modified mosquitoes have been used in outdoor but controlled conditions in India, Brazil, and Panama

### More on the News

Advancements in genome sequencing and genetic manipulation offer opportunities to control mosquito populations by interfering with their reproduction.

### About GDT

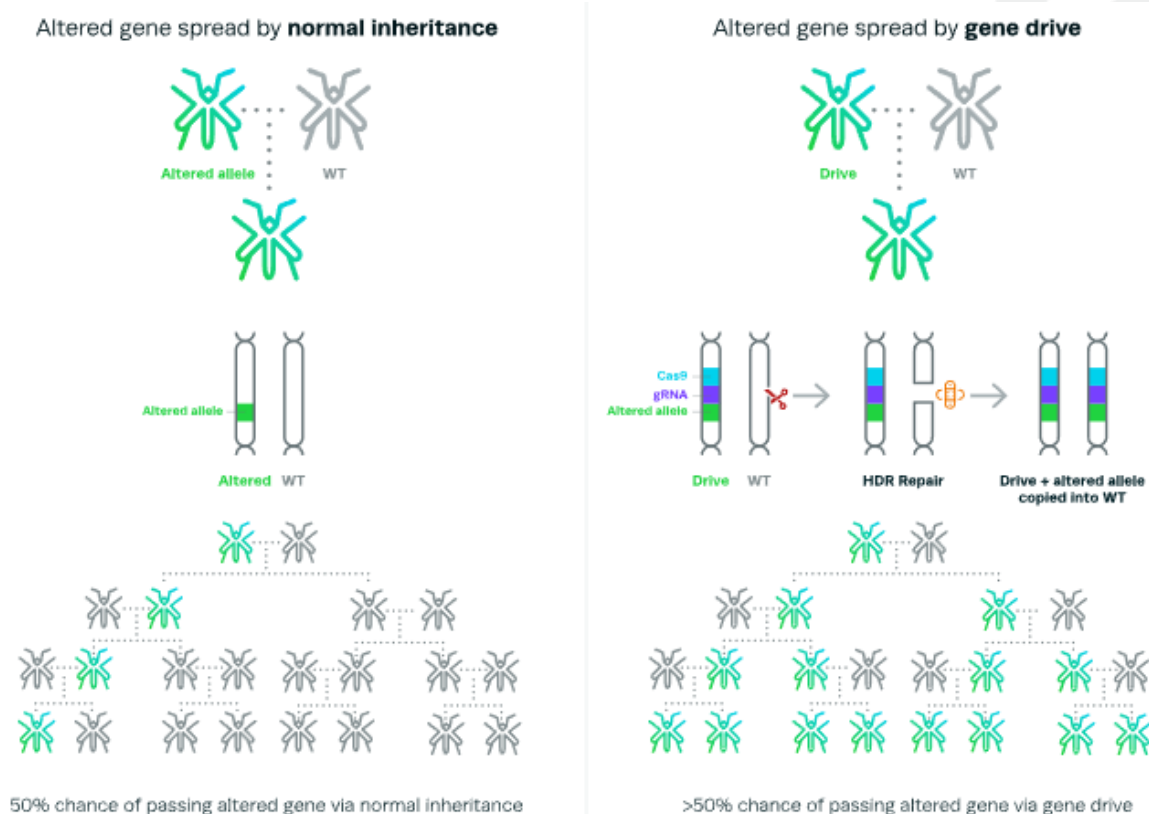
- Definition:** GDT is a genetic engineering technique that alters the traditional rules of Mendelian inheritance by modifying genes.
  - Mendelian inheritance refers to the specific patterns of how traits are passed from parents to offspring.
- Components:** GDT consists of **three** key components:
  - The Gene** to be spread
  - The Cas9 enzyme** to cut DNA
    - Cas9 enzyme is a molecular scissor that cuts DNA at a specific location in the genome.
  - The CRISPR**, A programmable DNA sequence that is used to determine the location of the enzyme action.
- Outcomes:** The genetic material encoding for these three elements is inserted into an animal's DNA, replacing the naturally occurring gene.
  - Genetic selection increases the likelihood of a specific set of genes being passed onto the next generation, enabling rapid gene spread and overriding natural selection.
- Applications:** GDT is a chemical that can effectively eradicate mosquitoes, which are carriers of the malaria, dengue, and Zika viruses.
  - Gene drives can also be utilized to manage invasive species like rodents.
  - Invasive Locust attacks can also be targeted using GDT.







### Concerns related to GDT



Normal inheritance (left) vs gene drives inheritance (right).

- 1. Ecological:** Disruption in the food-web balance, a long-term disruption in the ecosystem, can potentially lead to unintended ecological consequences.
- 2. Bioethics:** Genetic engineering raises moral and ethical questions, particularly regarding the right of humans to manipulate nature's laws and course.
- 3. Irreversible Changes:** Scientists are concerned that the introduction of genetically modified genes may have irreversible effects on nature, with unknown consequences.
- 4. Security:** The substance has the potential to be utilized for bioterrorism or other malicious purposes.
- 5. Health Issues:** Concerns arise regarding the potential inadvertent effects of food production, such as the creation of food that may cause allergic reactions.

#### Way Forward

- 1. Leveraging Artificial Intelligence & Big Data:** Scientists are using AI and genomic data to understand intricate connections between DNA and biological processes, thereby identifying potential disease treatments.
- 2. Deploying 3D Printing:** 3-D printing can aid in creating personalized medicines, tissues, and bacteria that align with our DNA, thereby promoting overall health.
- 3. Gathering of Genomic Data:** The development of genomic blueprints for humans and other species can significantly aid in the defense and development of vaccines against pandemics like Covid-19.

#### Conclusion

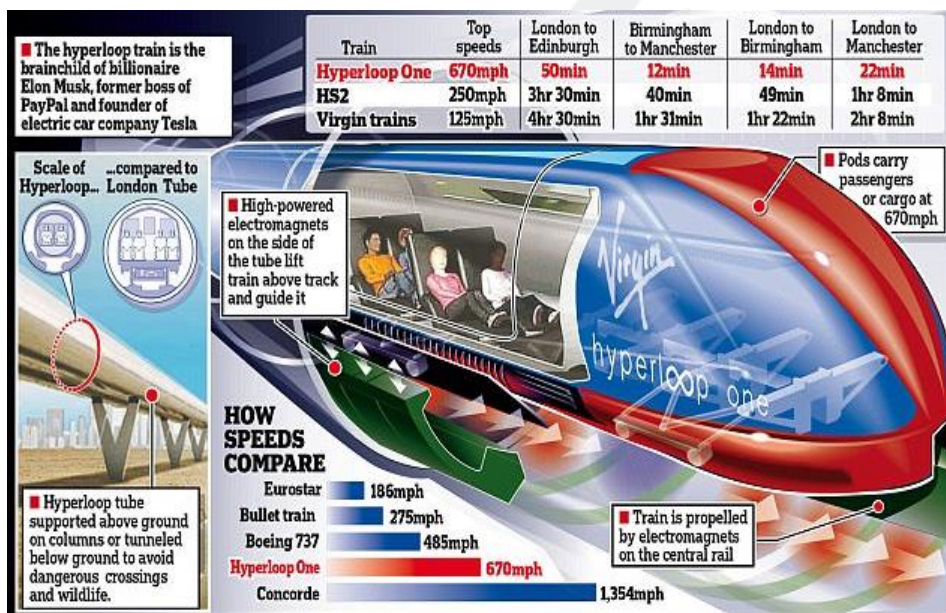
GDT has potential to tackle global challenges like vector-borne diseases, but raises ethical and ecological concerns which needs to be addressed Via robust R&D. Furthermore, Balancing innovation and responsibility is crucial in tackling issues related to gene drives.



## 7.7 NEWS IN SHORTS

### 7.7.1 HYPERLOOP

- Context:** Tata Steel and TuTr Hyperloop, a deep-tech startup based in IIT Madras, have signed a Memorandum of Agreement to collaborate on hyperloop technology development.
- About:**
  - Definition:** Hyperloop is a proposed ultra-high-speed ground transportation system for passengers and cargo, achieving speeds of over 700 miles an hour.
    - Musk and SpaceX, along with other companies, have been actively promoting the Hyperloop concept.
  - Essential elements:**
    - Tube** is a large, sealed, low-pressure system or vacuum tubes, typically found in a long tunnel.
    - Pod** is a coach that operates at atmospheric pressure, running free of air resistance or friction, using magnetic propulsion.
    - Terminal** is responsible for managing pod arrivals and departures.



- Benefits:**
  - The goal is to reduce air travel costs, pollution, and travel between large cities.

### 7.7.2 KAKRAPAR NUCLEAR POWER PLANT (KAPP 3)

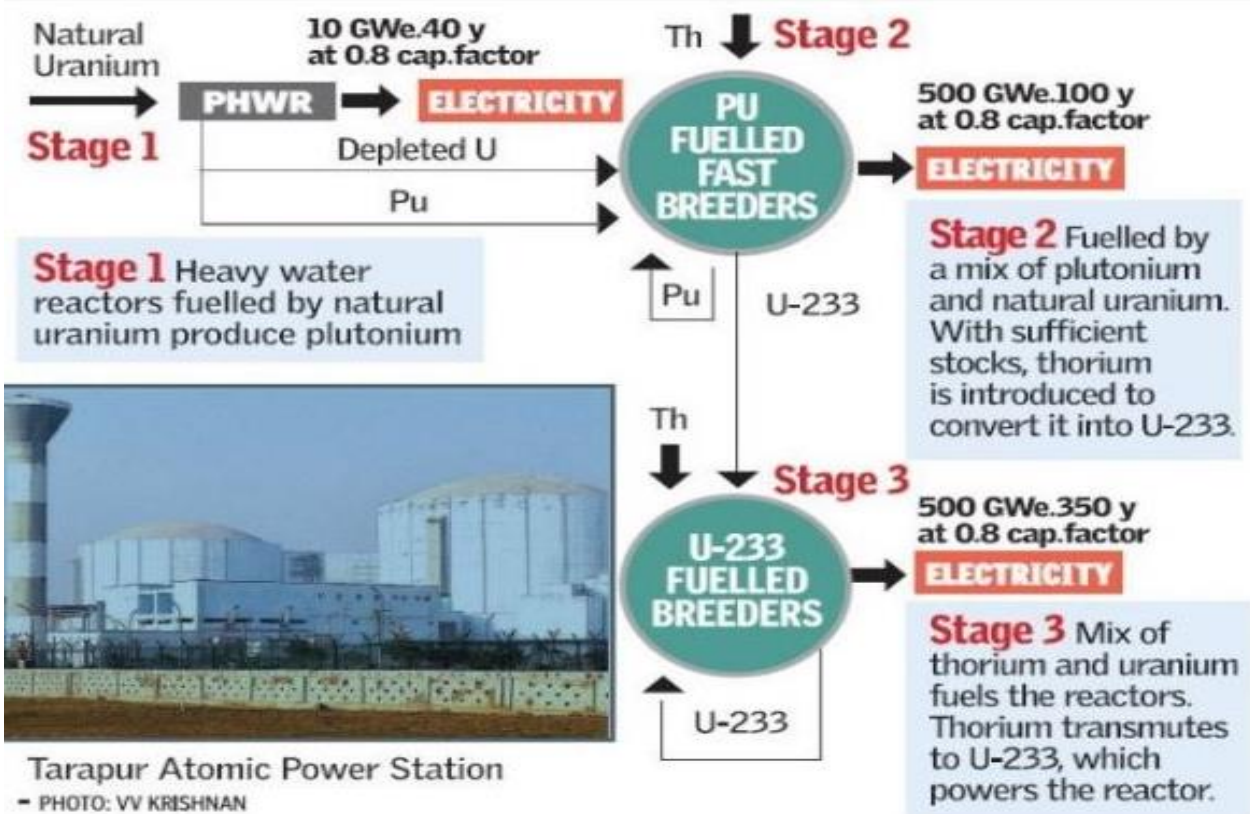
- Context**
  - The first-largest indigenous 700 MWe Kakrapar Nuclear Power Plant (KAPP 3) has begun operations in Gujarat.
- Location:** The Kakrapar Atomic Power Station is a nuclear power station located in Gujarat, India, near the Mandvi, Surat, and Tapi rivers.
- About:**
  - KAPP-3 is the largest indigenously developed version of the Pressurized Heavy Water Reactor (PHWR).
    - In 2020, the first criticality occurred when each fission event releases enough neutrons to sustain a series of reactions.
    - PHWRs utilize natural uranium as fuel and heavy water as a moderator.
- Safety features:**
  - Thin-walled pressure tubes: They can reduce the severity of an accidental rupture of the pressure boundary.
  - Passive Decay Heat Removal System: Similar technology was used for Generation III+ plants to prevent Fukushima-type accidents, which occurred in Japan in 2011.



- Steel-lined containment: The purpose is to decrease the pressure of the coolant reservoir in the event of a coolant loss incident.
5. **Status in India:** India is currently on the **second stage** of its three-stage nuclear program.
- The U-235 isotope must be enriched up to 3% to 5% for the purpose of electricity generation.

## INDIA'S THREE-STAGE NUCLEAR PROGRAMME

Homi Bhabha envisioned India's nuclear power programme in three stages to suit the country's low uranium resource profile



### 7.7.3 R&D IN TELECOM, BROADCASTING, AND IT (ICT) SECTORS

- Context:** The Indian Railways (TRAI) has released a consultation paper on promoting research and development in the telecom, broadcasting, and IT sectors.
- Objective:** The objective is to assess the current R&D ecosystem, identify obstacles to its promotion, and suggest strategies to enhance R&D in the ICT sector.
  - The TRAI Act 1997 mandates TRAI to provide recommendations for the development of telecommunication technology.
- Significance:**
  - **For national security:** The development of new technologies is being pursued to safeguard crucial national infrastructure.
  - **Supporting Industry 4.0:** Innovations that enable autonomous systems, predictive analytics, and real-time decision-making are being implemented.
  - **Consumers' experience:** The goal is to enhance the consumer experience and safeguard them from potential cyberattacks.
  - **Economic:** The Digital India Program aims to achieve its objectives and drive the country towards becoming a \$5 trillion economy.
- Challenges:**
  - There is a decrease in the number of organizations involved in R&D in the telecom and broadcasting sectors.
  - Limited commercialization of research due to weak interlinkages.





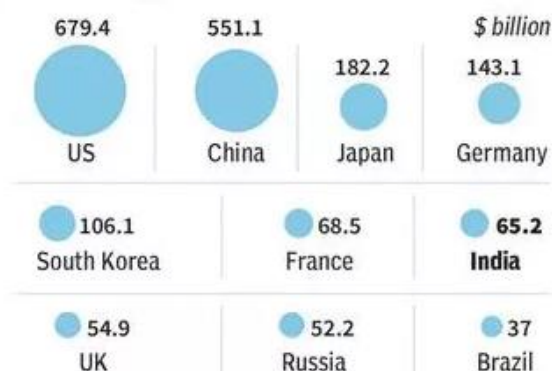
- There is no centralized governance body responsible for overseeing R&D activities in the ICT Sector.
- MNCs are prioritizing software development over hardware, resulting in a lack of product development.
- Dormant Telecom Centres of Excellence (TCOEs) are renowned for their exceptional services and expertise in the telecom industry.

#### 5. Initiatives taken:

- C-DoT has developed indigenous 4G and 5G core technologies.
- Telecom PLI scheme
- The Centre for Excellence in Wireless Technology (CEWiT), an autonomous research society of IIT Madras, is dedicated to advancing wireless technology.
- National Digital Communications Policy, 2018

#### India's R&D spend 7th highest globally

Top countries with highest total R&D expenditure - 2022



#### 7.7.4 MONOCLONAL ANTIBODIES (MABS)

**1. Context:** The Centre has decided to acquire doses of monoclonal antibody from Australia.

#### 2. About:

- **Definition:** Monoclonal antibodies (mAbs) are synthetic antibodies that mimic the functions of our immune systems.
- **Characteristics:**
  - The production of antibodies involves extracting specific antibodies from human blood and cloning them.
  - These are clones of a single antibody that bind exclusively to one antigen.
  - Homogeneous hybrid cells (B cells) are created from the same parent cell, resulting in the creation of these cells.
  - Polyclonal antibodies (PABs) are a blend of antibodies secreted by various B cell lineages.
  - They have been utilized in treating various diseases such as cancer, Ebola, and HIV.

#### 3. Mechanism:

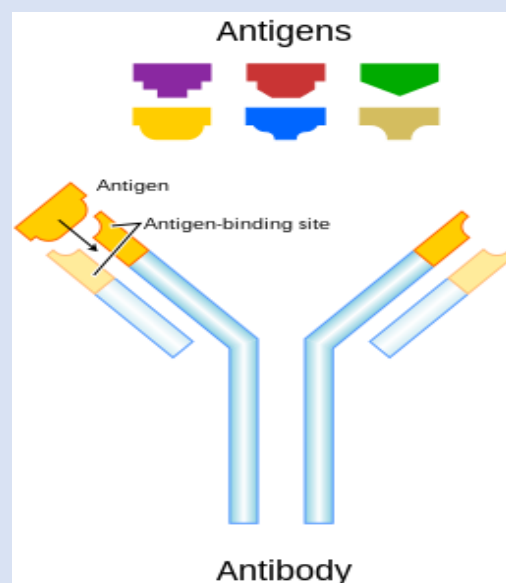
- mAbs can effectively bind with a part of the viral envelope that attaches to human cells, allowing entry into the body.
- This method effectively neutralizes the virus.

#### 4. Concerns with mAbs:

- Side effects of this medication include reactions to cytokines, allergic/atopic disorders, and impaired immune function.

#### Antibodies

- An antibody, also known as an immunoglobulin, is a large, Y-shaped protein utilized by the immune system to identify and neutralize pathogenic bacteria and viruses.



#### 7.7.5 WHO HYPERTENSION REPORT

**1. Context:** The World Health Organization (WHO) has released its first ever report on hypertension, titled 'Global Report on Hypertension: The Race against a Silent Killer.'

#### World Health Organization

The World Health Organization, headquartered in Geneva, Switzerland, is a United Nations agency responsible for international public health, with six regional offices and 150 field offices worldwide.





## 2. About Hypertension:

- **Definition:** Hypertension is a condition characterized by elevated blood pressure levels, measured by diastolic and systolic blood pressure levels.
- **Systolic pressure** refers to the maximum blood pressure during ventricle contraction, while **Diastolic pressure** is the minimum pressure recorded prior to the next contraction.

## 3. Key findings

- Globally, males have a higher prevalence of hypertension (34%) than females (32%).
- India has a population of 31% with hypertension.
- The prevalence of hypertension in India is alarmingly low, with only 37% of the population diagnosed and only 30% receiving treatment.
- High systolic blood pressure is linked to a higher percentage of cardiovascular disease deaths among females (54%) than males (51%).
- Risk factors for obesity include increased salt intake, tobacco use, obesity, alcohol consumption, and physical inactivity.

## 4. Interventions in India

- The India Hypertension Control Initiative (IHCI) is a joint effort between the Ministry of Hypertension, state governments, the Indian Council of Medical Research, and WHO-India.
  - The initiative aims to enhance hypertension control through an evidence-based treatment protocol, uninterrupted drug supply, patient-centered care, task sharing, and a digital information system.

### 7.7.6 GUJARAT DECLARATION

1. **Context:** The WHO has released the Gujarat Declaration as the outcome document of the first WHO Traditional Medicine Global Summit 2023.

#### 2. Details of Declaration:

- The statement reiterated the global commitment to indigenous knowledge, biodiversity, and Traditional, Complementary, and Integrative Medicine.
- It serves as a catalyst to harness the potential of traditional medicine and focus on their integration in national health systems.

#### 3. Initiative for Traditional Knowledge:

- Traditional Knowledge Digital Library
  - It is a collaborative Project of CSIR & Ministry of AYUSH
  - It is an Indian initiative to prevent exploitation and to protect Indian traditional knowledge from wrongful patents mainly at International Patent Offices.

### 7.7.7 SCRUB TYPHUS DISEASE

1. **Context:** A bacterial disease outbreak in Nagaland's Noklak district, bordering Myanmar, has resulted in 5 deaths and 600 infections.

2. **Cause:** A bacteria called *Orientia tsutsugamushi*.

3. **Vector:** The infection was transmitted through the bites of infected chiggers, also known as larval mites.

4. **Symptoms:** The symptoms may include fever, headache, body aches, and occasionally a rash.

5. **Areas of Spread:** Rural areas in Southeast Asia, Indonesia, China, Japan, India, and northern Australia.

### 7.7.8 RNA (RIBONUCLEIC ACID) STUDY OF TASMANIAN TIGER

1. **Context:** A recent study marks the first time RNA, a less stable molecule than DNA, has been extracted from an extinct species the Tasmanian Tiger.



2. **Tasmanian Tiger:** also known as the thylacine, was a dog-sized striped carnivorous marsupial native to Australia and its surrounding islands.
3. **RNA, like Deoxyribonucleic Acid (DNA):**  
DNA is a genetic code that carries genetic information and is crucial for protein synthesis within an organism.
  - RNA, derived from DNA, is responsible for transferring genetic information, synthesizing necessary proteins, and regulating cell metabolism.
4. **Significance of Study:**
  - Study provides insight into the causes of previous pandemics.
  - provides information on the regulation of species' metabolism.



### 7.7.9 DOLLY SHEEP

1. **Context:** Recently, Ian Wilmut, the British embryologist who led the team that created the first mammal cloned from an adult cell, popularly known as Dolly the Sheep, died at the age of 79.
2. **About Dolly Sheep:**
  - Dolly was the first mammal to be cloned from an adult cell.
  - Created through the Somatic Cell Nuclear Transfer (SCNT) cloning method.
    - In SCNT, the egg cell's nucleus is replaced with the nucleus of a donor adult cell.
    - The resulting animal will share nearly identical DNA as the original donor cell due to the 99.9% chromosomal DNA contained in the nucleus.

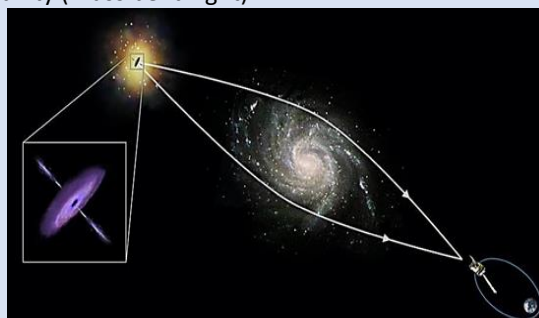


### 7.7.10 UNIVERSE EXPANSION DISPUTE

1. **Context:** Recently, Researchers proposed a new way to settle the universe expansion dispute. Under this Scientists may have discovered a method to determine the Hubble constant, which is the rate of expansion of the universe.
2. **More on News:** The universe, beginning 13.7 billion years ago with a single point, expanded and stretched to its current size, continuing to stretch and expand.
  - In 1929, Edwin Hubble made the first mathematical description of the expansion of the universe.
  - The **Hubble constant**, which measures the rate of the universe's expansion, remains a significant challenge to determine accurately.
3. **Calculation of Hubble Constant:**
  - Comparing observed brightness of a supernova, the largest explosion of a star that takes place in space
  - The study examines the modifications to the cosmic microwave background (CMB), which includes radiation from the Big Bang event.

#### Gravitational Lensing

- Gravitational lensing occurs when a large mass of matter, like a massive galaxy or black hole, creates a gravitational field that distorts and magnifies light.
- Gravitational lensing is based on Einstein's theory of general relativity (Mass bend light).





- Gravitational waves create spacetime ripples when massive astronomical objects like neutron stars or black holes collide.

#### 4. The Discrepancy in Calculation:

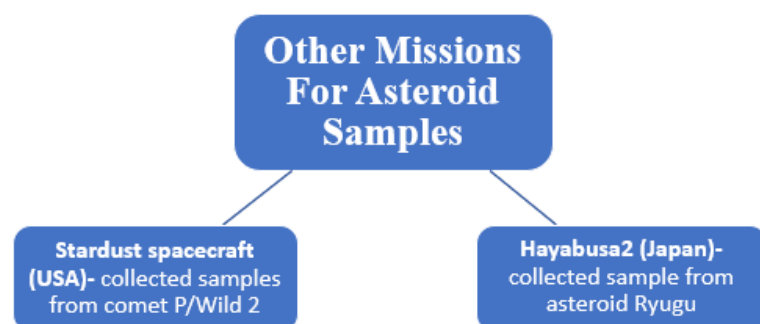
- Hubble constant measurement method has a discrepancy as it is estimated using data from different universe stages.
  - CMB is based on a younger universe, while the other two are based on an older universe.
- Researchers from India are proposing to study the collection of Gravitational Lensing and their time delays to determine the Hubble constant.
  - Gravitational lensing occurs when massive objects distort and magnify light from behind them, acting as cosmic telescopes and making distant galaxies appear brighter.

#### 7.7.11 CE-20 CRYOGENIC ENGINE

- Context:** Recently, ISRO has successfully tested the CE-20 Cryogenic engine for "Mission Gaganyaan."
- About Engine:** Cryogenic engines, powered by fuels stored at cryogenic temperatures (-150 to -273 degree C), are significantly more powerful than solid and liquid propellant engines.
- Fuel Used:** It is the first cryogenic engine that utilizes a gas-generator cycle with Liquid Oxygen and Liquid Hydrogen propellants combination.
- Application:** The 28-tonne fuel capacity vehicle will serve as the upper stage of the Geosynchronous Satellite Launch Vehicle Mk III (LVM3).

#### 7.7.12 NASA'S OSIRIS-REX ASTEROID SAMPLES CAPSULE

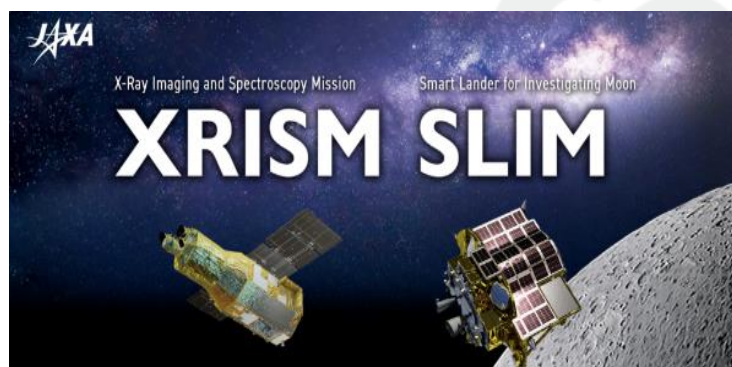
- Context:** Recently, NASA's Project OSIRIS-Rex's capsule with samples from asteroid Bennu landed on Earth.
- About OSIRIS-Rex:**
  - OSIRIS-REx (Origins, Spectral Interpretation, Resource Identification, Security- Regolith Explorer) was launched in 2016.
  - It's the NASA's first mission to collect a sample from near-Earth asteroid Bennu.
  - In 2020, the OSIRIS-REx spacecraft successfully collected dust and pebble samples from the asteroid Bennu.
    - Asteroids are rocky objects orbiting the Sun, remnants of the solar system formed over 4.6 billion years ago.
    - Minor planets, also known as planets, are significantly smaller than planets.
- Bennu Asteroid:**
  - Bennu, a B-type asteroid with significant carbon and minerals, reflects only 4% of the light it receives, compared to Earth's 30% and Venus' 65%.
    - Bennu was formed during the first 10 million years of the solar system's formation.
    - The solar system's surface contains chemicals and rocks from its birth, indicating that it has not undergone significant compositional changes over billions of years.
- Significance:**
  - Helps in better understanding of planet formation and origin of organics and water that led to life on Earth.
  - The goal is to enhance our understanding of potentially hazardous asteroids for the benefit of humanity.





### 7.7.13 SLIM AND XRISM

- Context:** Recently, Japan Aerospace Exploration Agency (JAXA) has successfully launched an H-2A rocket carrying the SLIM moon lander and the XRISM space telescope.
- SLIM moon lander:** Japan's Smart Lander for Investigating Moon (SLIM) is set to conduct Japan's first soft lunar landing at Shioli Crater in early 2024.
  - The project aims to showcase pinpoint-landing technology that can enable landing anywhere on the Moon.
- XRISM:** XRISM is a joint effort between JAXA, NASA, and the European Space Agency (ESA) for X-Ray Imaging and Spectroscopy Mission.
  - The study will utilize high-energy X-ray light from Earth's orbit to explore the universe.



### 7.7.14 MARS OXYGEN IN-SITU RESOURCE UTILIZATION EXPERIMENT (MOXIE)

- Context:** Recently, NASA's MOXIE, an oxygen-generating instrument on the Perseverance Mars Rover, has successfully completed its Mars mission.
- About MOXIE:** Process of producing molecular oxygen on Mars involves separating one oxygen atom from each carbon dioxide molecule pumped in from its thin atmosphere.
  - The technology has proven to be a viable solution for astronauts on Mars to generate oxygen for fuel and breathing.
  - Research was conducted by researchers from the Massachusetts Institute of Technology.

### 7.7.15 JUNO MISSION

- Context:** Recently, NASA's Juno mission has successfully completed its 53rd close flyby of Jupiter.
- About Juno mission:**
  - Launch:** The program was launched in 2011 and has been in operation for a period of five years.
  - Aim:** It aims to explore the origin and evolution of Jupiter, the solar system, and other giant planets in the cosmos beneath Jupiter's dense clouds.
    - It will also investigate Jupiter's faint rings for scientific purposes.
  - Extension:** The extended mission will continue its investigation of Jupiter until September 2025, or until the spacecraft's end of life.

### 7.7.16 K2-18 B EXOPLANET

- Context:** Recently, NASA's James Webb Space Telescope has detected the presence of carbon dioxide and methane on an exoplanet.
- About K2-18 b exoplanet:**
  - It is 120 light years away from Earth.
  - Exoplanets are planets that orbit stars other than our sun.
- James Webb Telescope:** The space telescope is specifically designed for infrared astronomy.
  - Its high-resolution and high-sensitivity instruments allow it to view objects too old, distant, or faint for the Hubble Space Telescope.



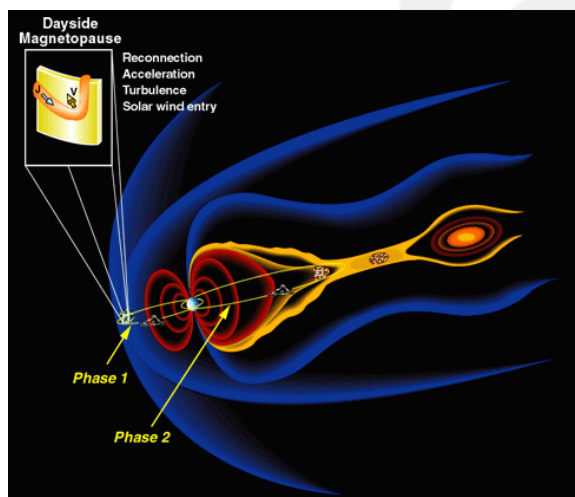


### 7.7.17 MAGNETOSPHERIC SUBSTORM

1. **Context:** Recently, a study conducted under the Department of Science and Technology, Ministry of S&T has shed light on the importance of understanding magnetospheric substorms.

2. **About Magnetospheric Substorms:**

- Magnetospheric substorm is a short-lived process in which a portion of the energy, extracted by the interaction between solar wind and Earth's magnetosphere, is released.
  - Interplanetary magnetic field (IMF), solar wind velocity, and solar wind dynamic pressure all play a crucial role in determining this.
  - The substorm typically lasts for 2-4 hours on average.
  - Southward direction of the IMF is a prerequisite for the occurrence of substorms.



### 7.7.18 SUPER BLUE MOON

1. **Context:** Recently, the night sky was illuminated by a rare phenomenon known as Super blue moon. According to NASA the last blue supermoon occurred in 2009, with the next expected to occur in 2037.

2. **About Super Blue Moon:**

- **Definition:** A Super Blue Moon is the combination of a full Moon, a Supermoon, and a blue Moon.
  - A blue moon is the second full moon within a single month, a rare occurrence as full moons typically occur once a month.
  - The third full moon in a season is considered the blue moon when there are four full moons.
- **Super moon** happens when the moon is passing through or is close to its perigee, and is also a full moon
- **Full moon** at perigee (super moon) is about 14% bigger and 30% brighter than a full moon at apogee (called a "micro moon")





8.

CULTURE

8.1 NATARAJA STATUE

Context

In September 2023, the venue of the G20 summit in Delhi, the world's tallest Nataraja statue was installed at Bharat Mandapam.

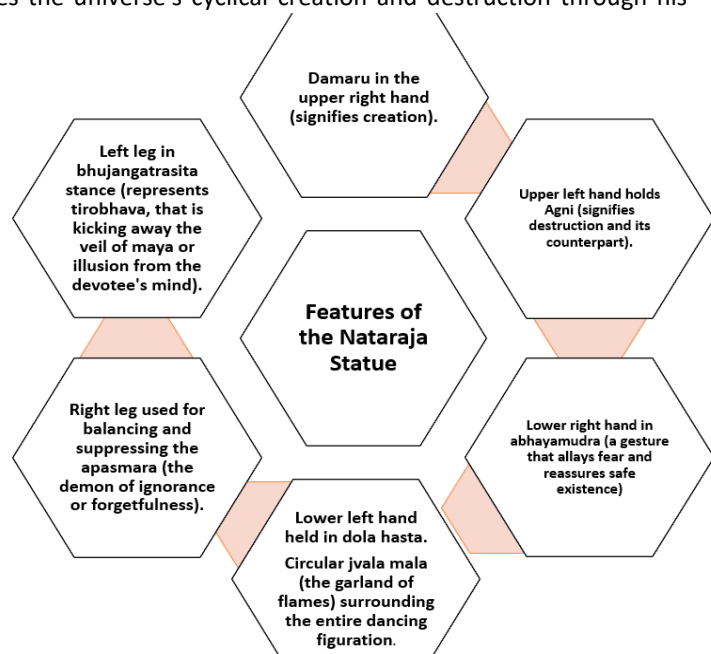
About the statue

1. The statue is approximately 27 feet tall and weighs about 18 tonnes.
2. In It was made by sculptor Radhakrishnan Sthapathy in Thanjavur District of Tamil Nadu.
3. Using the traditional technique of lost wax casting, the statue was built in Ashtadhatu (8 metals).
4. Ashtadhatu also called octo-alloy, is made up of eight different metals: gold, silver, copper, lead, zinc, tin, iron, and mercury.

A Nataraja statue is located outside the world's largest physics science laboratory- the European Organization for Nuclear Research (CERN) in Switzerland. The statue was a gift from India to celebrate its association with CERN and draws a metaphor between the cosmic dance of the Nataraja and the modern study of the 'cosmic

About Nataraja Statue

1. As the 'Lord of Dance,' Nataraja symbolizes the universe's cyclical creation and destruction through his dance.
2. The family deity of the Cholas was Lord Shiva, also known as Nataraj.
3. The dance represents panchkriyas, or Shiva's five activities: creation, preservation, destruction, veiling, and grace.
4. Evolution of Nataraja Sculpture:
  - o There is evidence that the first known bronze images of Shiva originated during the Pallava period between the 7th century CE and the mid-9th century CE.
  - o It developed into its present, well-known form under the patronage of the Chola dynasty.
  - o Pallava sculptures were close-set and linear, but later Chola craftsmen started to create figures that were flaring and dynamic.





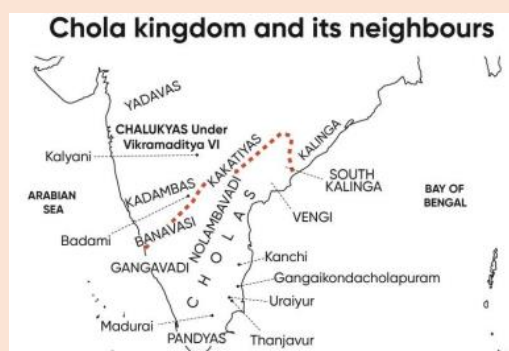
- The distinguished patron in the tenth century was Sembiyan Maha Devi, the widow of the Chola queen.

#### 5. Temples associated:

- At the Thillai Nataraja Temple in Chidambaram (Tamil Nadu), there is a jewelled picture of Nataraja.
- The temple is associated with Parantaka I, the Chola dynasty's king. It has been said that he gave the golden roof to the Vimana of the Nataraja temple at Chidambaram.
  - The temple is situated at the magnetic centre of the earth.
  - There are also nataraja idols/sculptures at the Brihadeeswara Temple in Thanjavur and the Uma Maheswarar Temple in Konerirajapuram.
- In many Shiva temples in southern India, the picture of Nataraja would have been placed in a separate Natana Sabha.

#### Art and architecture under Chola dynasty

- **Sculptures:**
  - Metal sculptures from the Chola era are highly famous.
  - The lost-wax casting process, known as cire perdue, is being used today in India and other countries to create bronze sculptures known as Cholas.
  - This is a metal casting technique where molten metal is poured into a clay mold that has been made using a wax model.
  - The wax model is melted and removed from the mold after it has been created.
  - The bottoms of the sculptures were punctured.
- **Paintings:**
  - Additionally, painting flourished and was highly realistic.
  - The inner walls of the Gangaikonda Cholapuram Temple and the Raja Rajeswara Temple were decorated with murals depicting Puranic themes.
  - The Brihadeeswarar Temple has an artwork that is thought to be that of Marco Polo.
- **Music and dance:**
  - Instruments such as kudamula, veena, and flute were used, and the devadasis were expert musicians and singers.
  - The classical dance form of Bharatnatyam is believed to have flourished under Chola patronage.
- **Temples:**
  - Chola temples can be categorized into two groups: –
  - Early temples that were influenced by Pallava architecture.
  - Later temples had Chalukya influence.
- **Architectural style:** Dravidian
- **Key Features of the Chola temples:**
  - Temples were surrounded by a high boundary wall.
  - Consists of grabhgriha (inner sanctum) and antarala (vestibule).
  - Temples were huge and large with Vimanas (structure over inner sanctum) or Gopuras (entrance tower) dominating the landscape.
  - The raw materials used are blocks of gneiss and granite.
- **Important examples:**
  - Early group- Vijayalaya temple.
  - Later group- Brihadishwar temple of Thanjavur and the Brihadishwar temple of Gangaikond cholapuram.



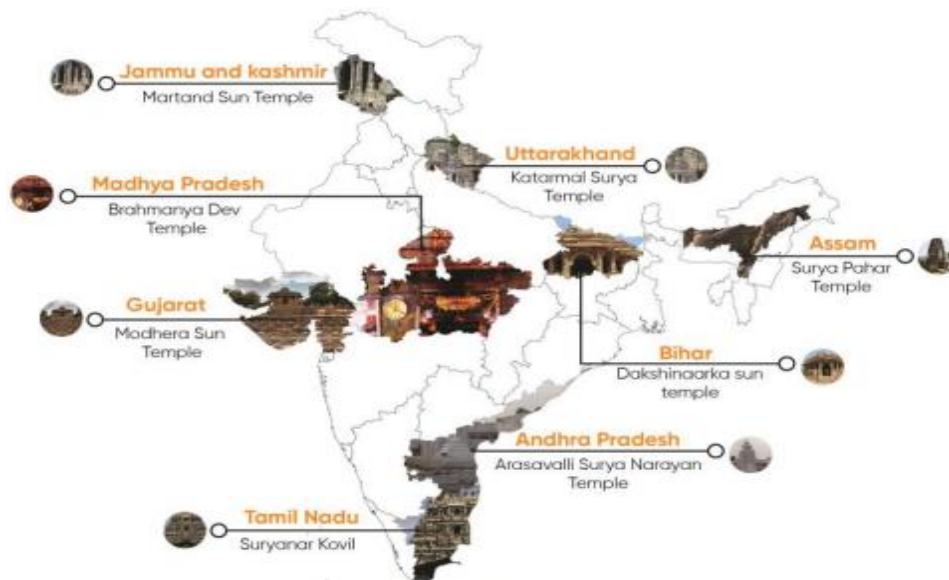


## 8.2 KONARK SUN TEMPLE

### Context

In September 2023, at the G20 Summit, the world leaders were shown the mural of the iconic Konark Sun Temple wheel.

### Other Prominent Sun Temples in India



### About Konark Sun Temple

1. Other names for Konark Sun Temple were Black Pagoda, Arka Kshetra, and Padma Kshetra. It is a UNESCO World Heritage Site.
2. During the reign of Eastern Ganga King Narasimhadeva-I in the 13th century, the Sun Temple and Konark Wheel were built.
3. Sun temples are built to emphasize the Sun's heavenly movement and are devoted to the worship of the Sun God.
4. Rocks known as khondalite, laterite, and chlorite were utilized in the construction of the temple.
5. Nobel Laureate Rabindranath Tagore once said of Konark Sun Temple that it is the location where the language of stone exceeds the language of man.

#### Eastern Ganga Dynasty

- Eastern Ganga or Chodaganga Dynasty ruled over Kalinga or Odisha from the 5th century to the early 15th century.
- According to early Chodaganga copper-plate grants, the Eastern Gangas of Kalinga were a branch of Mysore's ruling Western Ganga family.
- Kamarnava is believed to be the founder of the Eastern Ganga dynasty, however, Indravarman I, whose Jirjingi copperplate grant was issued in 537 CE, is the first historical ruler of the Eastern Ganga dynasty known from reliable records.
- The most powerful ruler of this dynasty was Anantavarman Chodaganga.

### Structure of the Temple

1. **Entrance:** The Gajasimha, the main entrance to the Sun Temple, is named after the elephant gaja and the lion simha. Mythology says that elephants represent wealth and lions represent pride, and both of them murder humans.
2. **Natya Mandapa:** Gajasimha leads to the finely carved Natya Mandapa, the theater and dancing hall of the Sun Temple. Various dance forms are portrayed in these sculptures.
3. **Jagamohan or Mukhasala:** Stone horses stand on either side of the steps leading up to Jagamohan, which is the temple's assembly hall.
4. **Deul:** The deul, or sanctum where the idol is kept, comes after the Jagamohan.
5. **Bhoga-mandira (kitchen)** to make bhoga for the deity and devotees.





### Architectural features of the Temple

1. **Sun rays:** The Sun Temple was designed such that the sanctum and the presiding deity would be illuminated by the first light of the rising sun.
2. **Chariot Design:**
  - The Sun Temple at Konark has been designed like the Sun God Surya's chariot.
  - There are a total of 24 intricately carved wheels supporting the temple, 12 on each side.
  - A team of seven spirited horses appear to be pulling the chariot eastward in the direction of dawn.
3. **Konark Wheel:**
  - On the widest part of the face, the thicker wheels are all carved with circular medallions at their centres.
  - While the medallions in the spokes are carved with figures of women in various luxurious faces, most of them sexual, the rims are carved with designs of greenery with a variety of birds and animals.
4. **Seven Horses:**
  - The names of these seven horses—"Gyatri," "Usnika," "Anustuv," "Vrihati," "Pangti," "Tristup," and "Jagati"—in the Bhagawat Gita may refer to the rhythmic portrayal of the Vedic texts.
  - The rainbow's seven colors, Sahasrara (Violet), Indra-nila (Indigo), Nila (Blue), Haritaha (Green), Pita (Yellow), Kausumbhaha (Orange), and Rakta (Red), are also represented by the names of the seven horses.
5. **Carvings of the Temple:**
  - **War Horses:** In front of the Konark Temple on its southern side are two sculpted battle horses. The sculpture shows each of them destroying the warrior with its immense power and energy. The state government of Odisha has officially adopted this image of the Konark war horse as its emblem.
  - **Sun God:** At three key spots to capture the sun at dawn, noon, and sunset, the Sun Temple features three magnificent carvings of the Sun God.
  - **Everyday activities:** Daily activities are chronicled in the carvings on the walls and at the foot of the temple.
  - **Others:** While some carvings feature sensual details, others feature legendary animals and creatures, such as birds and elephants.

### Different Interpretations of the Konark Wheel

1. **Time:** According to some,
  - 7 horses represent the days of the week.
  - 12 pairs of wheels represent the 12 months of the year.
  - 24 wheels signify 24 hours of a day.
  - 8 major spokes signify prahars (three-hour period) of a day.
2. **Life cycle:** Some people propose that the chariot's wheels represent the "Wheel of Life." They illustrate the process of conception, preservation, and realization.
3. **Zodiac signs:** The 12 zodiac signs could alternatively be represented by these 12 pairs of wheels.
4. **Dharmachakra:** Some people believe that the Wheel of Konark and the Buddhist Dharmachakra, also known as the Wheel of Karma and the Wheel of the Law, are the same.
5. **Sun dial:** Another interpretation of the chariot's wheels is the "Sun Dial." Time may still be told with four of the wheels functioning as sundials. The top, middle, and broader spoke on the Sun dial indicates midnight, 12 o'clock. The dial reads counterclockwise. There are eight broader and eight narrower spokes on a Konark wheel. Two wider spokes are three hours apart.
6. **Symbol of democracy:** It also serves as a powerful symbol of the wheel of democracy that reflects the resilience of democratic ideals and commitment to progress in society.

### Conclusion

India's rich cultural heritage is symbolized by the Sun Temple at Konark, which stands as the pinnacle of Kalinga architecture.



### Kalinga Architecture

1. **Nature:** The Nagara style of Northern India and the Dravida style of South India were combined to create the Kalinga architecture.
2. **Typical architecture:** The typical Kalinga temple consists of two parts – a sanctum (deul) and a hall (Jagamohana). However, early period temples were devoid of Jagamohana.
3. Later additions to the temple style include natya-mandapa and then bhoga-mandira (kitchen).
4. **Categories:** The architecture is broadly classified into three main categories:
  - **Rekha deul:** Square plan with a curvilinear tower resembling a shikhara.
  - **Pidha Deul or Bhadra Deul:** Square plan with a pyramidal tower composed of horizontal tiers arranged in a receding manner.
  - **Khakhara Deul:** Rectangular plan with a barrel-shaped (vault shape) tower.

## 8.3 SACRED ENSEMBLES OF HOYSALAS

### Context

In September 2023, Karnataka's Sacred Ensembles of Hoysalas has been designated as the 42nd World Heritage Site (WHS) by UNESCO.

### More on News

1. It consists of the temples of Keshava (Somanathapur), Hoysaleswara (Halebidu), and Chennakeshava (Belur).
2. During the 12th and 13th centuries, several temples were built.
3. The fourth WHS in Karnataka is the Hoysalas Temples. Western Ghat, Pattadakal, and Hampi are the other three.

### Temples and Features of the Hoysalas

#### 1. Chennakeshava Temple (also referred as Vijayanarayana Temple):

- In Belur Region, Hassan District, it was commissioned in 1117 CE by King Vishnuvardhana.
- situated by the Yagachi River's edge.
- The garbha griha, or sanctum sanctorum, contains a picture of Krishna. The temple is an ekakuta, or single shrine.
- In honour of Lord Vishnu, also known as Keshava (Vishnu) and Chennakesava (Chenna, the beautiful).
- It is a living temple (only worshipping temple among them).
- **Key Features:**
  - **Material:** Soapstone or chloritic schist, which is also utilized in the construction of two additional temples.
  - **Platform:** An Adhithana (Jagati) serves as its support.
  - **Garbhagriha:** This star-shaped structure's zigzag walls give the 24 forms of Vishnu varied looks depending on the time of day.
  - **Sculpture:** Outside sculptures tell stories from the epics, Ramayana, and Mahabharata, as well as scenes from everyday life, music, and dance. They also show Vishnu's life and his reincarnations.
  - Along with Buddhism and Jainism, there are also some depictions of Shiva.

#### 2. Hoysaleswara Temple (Halebid Temple):

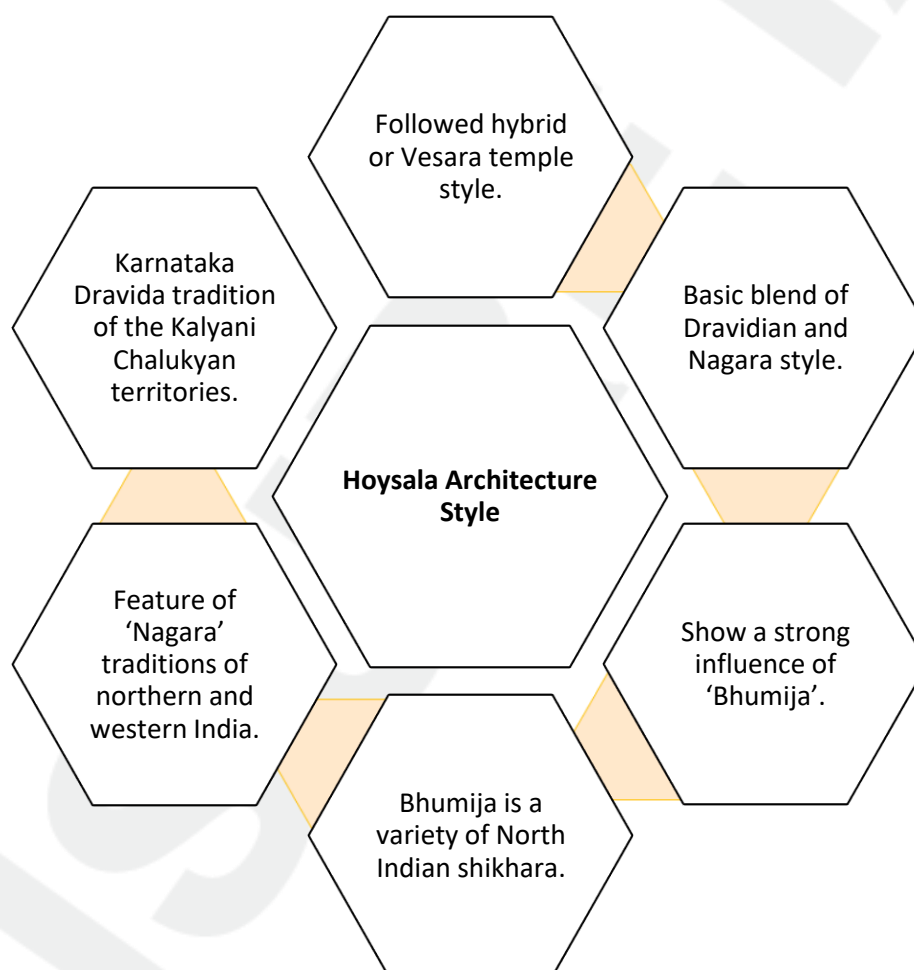
- Launched: King Vishnuvardhana was responsible in the building of this structure in Halebidu, Hassan, in 1121 CE.
- situated alongside the Dwarasamudra Lake.
- Deity: Worshipping Lord Shiva as the God of Destruction, Nataraja.
- **Key Features:**
  - Mandapa: It is a two-story structure with a sizable hall designed to accommodate dancing and music.
  - There are no temple towers in Shikhara or Vimana.
  - Scenes from the Ramayana, Mahabharata, and Bhagavata Purana are shown in the sculptures.
  - No other temple has as many elaborate sculptures as this one, with almost 240 pictures.



- incorporates imagery from Jainism as well as motifs from Vaishnavism and Shaktism.

### 3. Keshava Temple:

- commissioned in Somanathapura, Mysuru, in 1268 CE by Somanatha Dandanayaka (during the reign of Narasimha III).
- located alongside the Kaveri River.
- Deity: Lord Krishna is worshipped at this Trikuta temple as Janardhana, Keshava, and Venugopala.
- **Key Features:**
  - Three shrines and a vimana (tallest structure over the main shrine) make up the stellar plan.
  - Prakaara: An enclosure consisting of many cells.
  - Vimana: All in all, the three shrines.
  - Among the sculptures are those of Goddess Lakshmi, Lord Ganesha, Lord Vishnu, and Saraswati.



### Key Features of Temple Architecture

1. Style: Designed on an elevated platform (adhithana), with a stellate plan that resembles a star.
2. Several shrines grouped around a central hall supported by pillars.
3. Soapstone was the material chosen; it is pliable and easy to carve.
4. The sanctum sanctorum, or garbha griha, has an enshrined icon (murti) situated in the center on a pitha (pedestal).
5. There were both open and closed mandapa (halls where people used to congregate for prayers).
6. possess round mandapas as pillars. On the upper brackets of each pillar are four carved figurines.
7. have mandapas with round pillars. Four carved figurines are located on the upper brackets of each pillar.
8. The elaborate ceilings include flower patterns and mythological characters.
9. Gopuram (temple entrance): Tall gopurams were built.
10. Salabhanjika, a sculpture depicting a woman, is a popular type of sculpture.
11. Vimana: (roof above the inner sanctuary, or garbhagriha) Inside, it's simple, yet the exterior is richly adorned.
12. Additional features were corbelled domes in the ceilings.



13. Temples have a water pot in the shape of a vase on the uppermost section of the temple tower.

### Conclusion

Hoysalas Sacred Ensembles have enhanced our traditional culture. UNESCO recognition will aid in encouraging the sites' protection. The Hoysala monarchy was instrumental in promoting temple construction.

### Hoysala Dynasty

- **Origin and Rise:**
  - The Hoysalas governed areas spanning Karnataka and Tamil Nadu for over three centuries, with Sala serving as the dynasty's founder.
  - The first kings came from the hill's northwest of Dorasamudra (present-day Halebid), which became their capital in about 1060.
- **Political History:**
  - The Hoysalas were feudatories of the Chalukyas of Kalyana, also known as the Western Chalukya Empire.
  - The most notable rulers of the Hoysala dynasty were Vishnuvardhana, Veera Ballala II, and Veera Ballala III.
  - Vishnuvardhana (also known as Bittideva) was the greatest king of the Hoysala dynasty.
- **Religion and Culture:**
  - The Hoysala dynasty was a tolerant and pluralistic society that patronized various religions, such as Hinduism, Jainism, and Buddhism.
  - King Vishnuvardhana was initially a Jain but later converted to Vaishnavism under the influence of the saint Ramanuja.

### Key Facts about Heritage Sites in India

1. Total Number of World Heritage Sites in India: 42
2. Total Cultural Heritage Sites: 34
3. India is 6th in number of World Heritage Sites in the World
4. Total Natural Sites: 7 (Kaziranga National Park, Manas Wildlife Sanctuary, Western Ghats, Sundarbans National Park, Nanda Devi and Valley of Flowers National Parks, Great Himalayan National Park Conservation Area, Keoladeo National Park)
5. Mixed Site: 1 (Khangchendzonga National Park)
6. World Heritage Sites Listed First: Taj Mahal, Agra Fort, Ajanta Caves and Ellora Caves (all in 1983)
7. Latest Addition (2023): Hoysala Temples (42nd site) and Santiniketan (41st site)
8. Countries with the Most UNESCO World Heritage Sites: Italy (58), China (56), Germany (51), France (49), Spain (49).

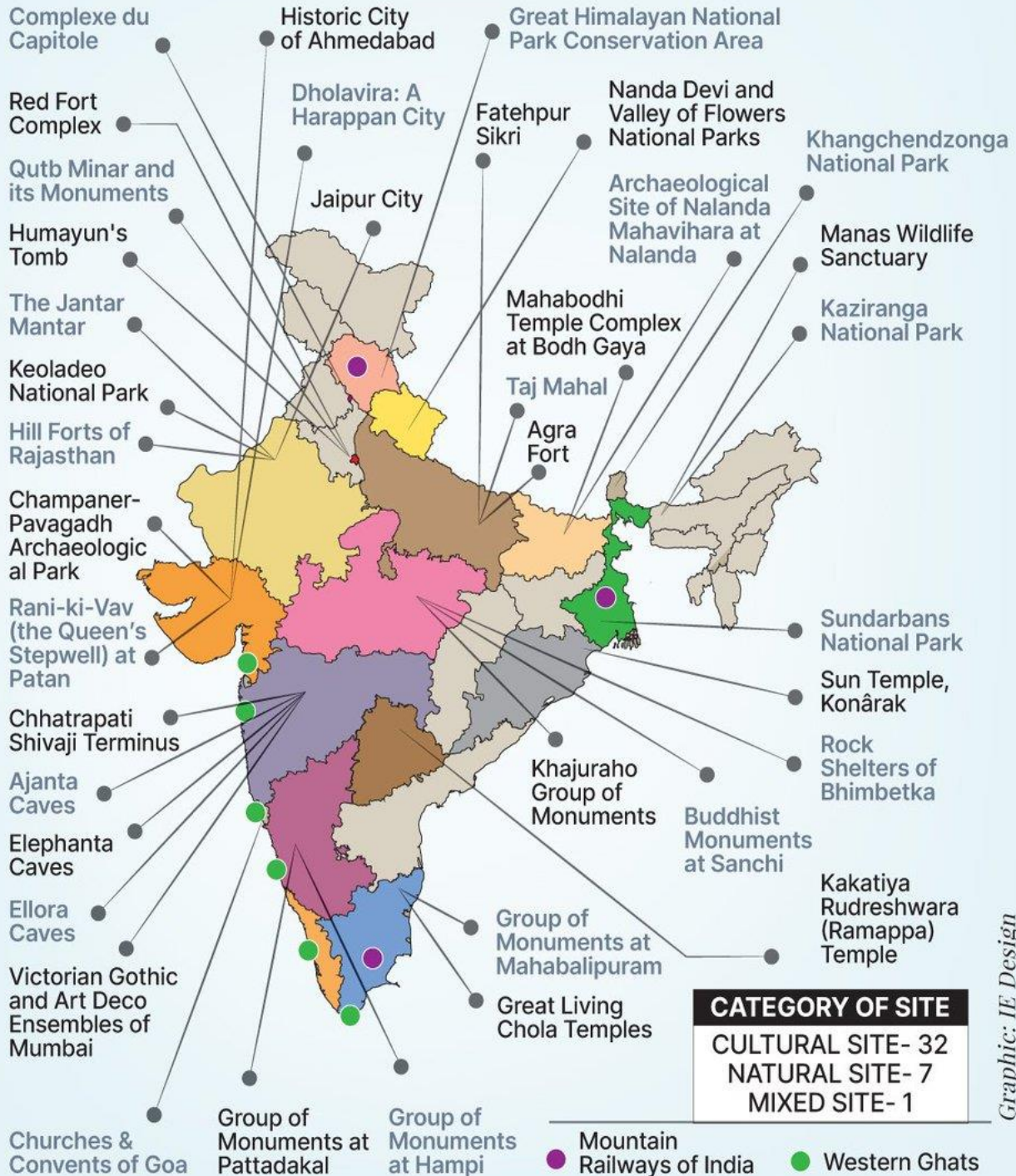
### UNESCO

1. United Nations Educational, Scientific and Cultural Organization (UNESCO) is a specialized agency of the United Nations (UN). It seeks to build peace through international cooperation in Education, the Sciences and Culture.
2. It is also a member of the United Nations Sustainable Development Group (UNSDG), a coalition of UN agencies and organizations aimed at fulfilling the Sustainable Development Goals (SDGs).
3. UNESCO's Headquarters are located in Paris and the Organization has more than 50 field offices around the world.
4. It has 193 Members and 11 Associate Members (As of April 2020) and is governed by the General Conference and the Executive Board.
5. Three UNESCO member states are not UN members: Cook Islands, Niue, and Palestine.
6. While three UN member states (Israel, Liechtenstein, United States) are not UNESCO members.





# List of UNESCO world heritage sites in India



Graphic: IE Design



## 8.4 SANTINIKETAN

### Context

In September 2023, Santiniketan has been designated as the 41st UNESCO World Heritage Site (WHS) of India.

### Facts about Santiniketan

- Historical Significance:** When Debendranath Tagore, the father of Rabindranath Tagore, spotted this scenic landscape in 1862, he made the decision to build an ashram and built a house known as Santiniketan, which means "abode of peace."
- Name Change:** The region was once known as Bhubadanga, but Debendranath Tagore renamed it Santiniketan because of its meditative atmosphere.
- Educational Legacy:** Rabindranath Tagore founded a school in 1901 using the Brahmacharya Ashram model after selecting a sizable plot of land. Later on, Visva Bharati University was formed from this institution.
- UNESCO World Heritage Site:** With a focus on Santiniketan's significance in human values, architecture, the arts, town planning, and landscape design, the Ministry of Culture suggested adding the city to the UNESCO World Heritage List.
- Archaeological Preservation:** In order to preserve Santiniketan's historical and cultural legacy, the Archaeological Survey of India (ASI) has been involved in the restoration of a number of buildings.

### Who was Rabindranath Tagore?

- Early Life:**
  - On May 7, 1861, in Calcutta, India, Rabindranath Tagore was born into a well-known Bengali family. Of the thirteen children, he was the youngest.
  - Being a polymath, Tagore was exceptionally talented in many areas. In addition to being a poet, he was also a painter, educator, philosopher, musician, dramatist, and social reformer.
- Nobel Laureate:** With his book of poetry named "Gitanjali" (Song Offerings), Rabindranath Tagore became the first Asian to win the Nobel Prize in Literature in 1913.
- Knighthood:** George V awarded a knighthood to Rabindranath Tagore in 1915 for his literary contributions. The 1919 Jallianwala Bagh Massacre led Tagore to renounce his knighthood.
- Composer of National Anthems:** He wrote the national anthems of two nations: "Amar Shonar Bangla" (the national anthem of Bangladesh) and "Jana Gana Mana" (the national anthem of India).
- Literary Works:**
  - He has written plays, essays, novels, short stories, and poems among other literary works. His famous works include "Gora," "The Home and the World," Gitanjali, Ghare-Baire, Gora, Manasi, Balaka, Sonar Tori, and "Kabuliwala."
  - His song "Ekla Chalo Re" is another reason for his notoriety.
- Social Reformer:** He supported social reform and the ideals of harmony, tolerance, and unification. He advocated for Indian independence while criticizing British colonial rule.
- Tagore's Philosophy:** His philosophy placed a strong focus on the value of spirituality, humanism, and the connection between nature and humanity.
- Literary Style:** Tagore's work was distinguished by its philosophical and poetic elements, frequently delving into topics of spirituality, nature, and love.
- Death:** He died on August 7, 1941, and left behind a significant literary legacy as well as a long-lasting influence on Indian and global culture.

### Conclusion

Rabindranath Tagore's beliefs continue to be widely disseminated thanks in large part to Santiniketan. By implementing his concepts into the educational system, the nation is carrying on his legacy.



### Banglar Mati

- West Bengal declared Rabindranath Tagore's Banglar mati, Banglar jol as its state anthem.
- West Bengal Assembly also passed resolution making Poila Baishakh (first day of the Bengali calendar i.e., April 15) as the statehood day
- Song was written during the Banga Bhanga movement against the partition and promotes communal harmony through Raksha Bandhan.
- Tagore also composed Amar sonar Bangla (national anthem of Bangladesh) and Vande Mataram (national song of India).

### UNESCO's World Heritage Sites

- A World Heritage Site is a place that is listed by UNESCO for its special cultural or physical significance.
- The list of World Heritage Sites is maintained by the international 'World Heritage Programme', administered by the UNESCO World Heritage Committee.
- This is embodied in an international treaty called the Convention concerning the Protection of the World Cultural and Natural Heritage, adopted by UNESCO in 1972.

## 8.5 NEWS IN SHORTS

### 8.5.1 RAMON MAGSAYSAY AWARD

1. **Context:** Recently, the Assam-based oncologist Ravi Kannan is among the winners of Ramon Magsaysay Award, 2023.
2. **About Ramon Magsaysay Award**
  - It is an annual award established to honour outstanding individuals and organizations in Asia for their exemplary contributions to the greater good of society.
  - Also referred to as the "Nobel Prize of Asia" and is named after Ramon Magsaysay, the third President of the Philippines.
  - The award was established in 1957 by the Rockefeller Brothers Fund, a philanthropic foundation, to commemorate the achievements and leadership of President Ramon Magsaysay. Magsaysay was known for his integrity and commitment to serving the people and promoting good governance.
  - The award recognizes contributions in various fields, including government service, public service, community leadership, journalism, literature, and creative communication arts. The awardees are selected based on their significant and selfless contributions to society.
  - The Ramon Magsaysay Award Foundation, based in the Philippines, is responsible for the selection process. Nominations are received from across Asia, and a board of trustees, with the help of experts, evaluates the nominations and selects the recipients.
  - Recipients of the award receive a medal, a certificate, and a cash prize.

### 8.5.2 "ADOPT A HERITAGE 2.0" PROGRAMME

1. **Context:** Recently, the Archaeological Survey of India (ASI) launched "Adopt a Heritage 2.0" Programme. It is an upgraded version of "Adopt a Heritage" programme.
2. **About Adopt a Heritage Programme:**
  - It was launched in 2017 and was implemented by the Ministry of Tourism, Ministry of Culture, ASI with cooperation of State/ UTs Government.
  - Objective was to involve private and public sector companies, as well as individuals, in the maintenance and upkeep of India's cultural and natural heritage sites.
3. **Need for revamp:**
  - **Lack of Transparency and Awareness:** Critics argue about the lack of transparency in the selection process of organizations and companies to adopt heritage sites. Lack of awareness about the prescribed guidelines was also felt.





- **Commercialization Concerns:** Many expressed concerns that the program might lead to excessive commercialization of heritage sites, potentially compromising their cultural and historical significance.
- **Cultural Sensitivity:** Another issue was the need to maintain the cultural sensitivity and integrity of heritage sites. Balancing the demands of tourism with the preservation of cultural heritage can be challenging.

#### 4. Key highlights of Adopt a Heritage 2.0

- **Smaraka Sarathi:** It's a name given to any private/ public sector company/ trust/ NGO/ society that has been selected by the ASI for the programme (formerly known as monument mitra).
- **Funding:** Companies in the private and public sector shall utilize their Corporate Social Responsibility (CSR) fund in conservation, while others may provide voluntary contribution.
- **Flexibility:** Now the flexibility will be there, either to adopt a monument in whole or provide a particular amenity such as drinking water facility, cleaning services, etc. for single or several sites.
- **Amenities:** Focus will be on four-pronged framework of amenities: Hygiene, Accessibility, Safety, and Knowledge.
- **Duration:** This programme will have a duration of 5 years.

### 8.5.3 'FUNCTIONING OF ARCHAEOLOGICAL SURVEY OF INDIA (ASI)' REPORT

1. **Context:** Recently, this report was presented by the Parliamentary Standing Committee on Transport, Tourism and Culture in the Parliament. This report included the challenges associated with the working of ASI. The recommendations to improve the working of ASI was also provided by the committee.

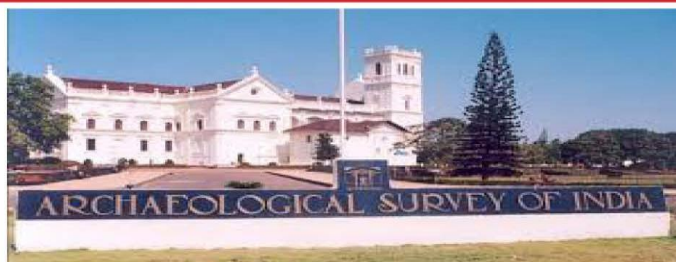
#### 2. Challenges are:

- The list of centrally protected monuments includes a large number of minor monuments too, with no national significance of them. For Ex: The list includes many graves of colonial era soldiers or officials.
- The provision of 300- meter regulated area and 100-meter prohibited area around all ASI-protected monuments is criticised by many locals as they find it difficult to carry out repair work or some new construction in their houses. This provision was added in 2010 by amending the Ancient Monuments and Archaeological Sites and Remains (AMASR) Act, 1958.
- At many sites, the restoration work is being done without taking consideration of original design/beauty of the Monument.

#### 3. Recommendations are:

- The ASI should rationally categorise the sites on the basis of their national significance, unique architectural value and specific heritage content.
- ASI can be divided into two wings namely ASI (which can look into core things like exploration, excavation and conservation aspects) and India Heritage Development Corporation (IHDC) which can deal with ASI's entire revenue.
- ASI should use latest technologies like LiDAR, ground-penetrating radar and others to increase accuracy and efficiency of excavations.

## Archaeological Survey of India (ASI)



- Function under Department of Culture (Ministry of Culture).
- ASI was founded in 1861 by Alexander Cunningham who became its first Director-General.
- It regulates all archaeological activities as per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- Post Independence, it's a Statutory body that now works under Ancient monuments and archaeological sites and remains act (AMASR Act), 1958.





### 8.5.4 MERI MAATI, MERA DESH (MMMD) CAMPAIGN

- Context:** In September 2023, the second phase of MMMD campaign was launched by the Government of India encouraging people from each District/Village to take part in Amrit Kalash Yatras.
- Amrit Kalash Yatras:** Soil and rice from villages will be collected in Kalash, which will then be sent to blocks and from blocks, the Kalash will travel to the capital city of the respective State/UT. Furthermore, the Amrit Kalash from across the country will then be transported to Delhi for the culmination of the campaign.
- About MMMD campaign:** It was launched in August 2023 to commemorate 75 years of India's independence and to encourage people to pay their tributes to the Veers and Veeranganas, who have sacrificed their lives for the country.

### 8.5.5 NEW PARLIAMENT BUILDING

- Context:** These days, gates of new parliament building are catching attention because of their guardians.
- Basically, the new parliament has 6 entry gates, each signifying a different role.
- Out of these 6 entrances, 3 are designed for ceremonial purposes, to welcome special guests and on the occasion of special events.
- These ceremonial entrances are named as Gyan, Shakti and Karma, representing the Indian knowledge system, patriotism and artistic traditions, respectively.

#### Public entrances and their guardians:

Name	About
<b>Makara Dwar</b>	<ul style="list-style-type: none"> <li>It is inspired by a similar statute at the Hoysaleswara Temple at Halebidu.</li> <li>It represents unity in diversity among the people of the country.</li> </ul>
<b>Shardul Dwar (Western Gate)</b>	<ul style="list-style-type: none"> <li>It represents the power of the people of nation.</li> <li>It is inspired by a similar statute at Shiva Temple at Sihonia in Morena (Madhya Pradesh).</li> </ul>
<b>Hansa Dwar(North East)</b>	<ul style="list-style-type: none"> <li>It reminds people the power of judgement and self-realisation as essential feature of Democracy.</li> <li>It is inspired by a similar statute at Vijay Vitthala Temple, Hampi (Karnataka).</li> </ul>

#### Ceremonial entrances and their guardians:

Name	About
<b>Garuda Dwar (Eastern Gate)</b>	<ul style="list-style-type: none"> <li>It is inspired by a similar statue of Nayaka period sculpture from Kumbhakonam, Tamil Nadu.</li> <li>It reflects the aspirations of the people and the administrators of the country.</li> </ul>
<b>Ashwa Dwar (Southern Gate)</b>	<ul style="list-style-type: none"> <li>It is inspired by a similar statue at the Sun temple, Konark (Odisha).</li> <li>This statue is symbol of strength, power, and speed.</li> <li>It also describes the quality of governance.</li> </ul>
<b>Gaja Dwar (North Gate)</b>	<ul style="list-style-type: none"> <li>It is inspired by a similar statue at Madhukeshvara Temple at Banabasi, Karnataka.</li> <li>It represents wisdom, wealth, intellect and memory.</li> <li>It also reflects the aspirations of the elected representatives of the democracy.</li> </ul>



### 8.5.6 CHAUSATH YOGINI TEMPLE

1. **Context:** On 17<sup>th</sup> September, the ongoing special House session of parliament moved to the new Parliament building and the old Parliament will now be turned into a museum. It is said that the design of the old Parliament building was inspired from Chausath Yogini temple.
2. **About Chausath Yogini Temple:**
3. It is located in Mitaoli village in Morena district of Madhya Pradesh.
4. As per an inscription dated back to 1323 CE, the temple was built by the Kachchhapaghata king Devapala.
5. As per ASI, the temple was the place of providing education in astrology and mathematics.
6. This temple is also known as Ekattarso Mahadeva Temple and it is standing on the top of an hill. This temple is so named because of the presence many shivalingas inside it. This circular temple is one among the very few such temples in India. This is a yogini temple dedicated to 64 yoginis.

### 8.5.7 STATUE OF ONENESS

1. **Context:** Recently, the Government of Madhya Pradesh inaugurated a 108-foot-tall statue of Adi Shankaracharya in Omkareshwar and named it as "Statue of Oneness".
2. **About Adi Shankaracharya**
  - He was born in the village of Kaladi in the present-day Kerala.
  - Also known as Shankara and was a renowned philosopher, who lived in the early 8th century CE.
  - He is credited with reviving and consolidating the Advaita Vedanta school of philosophy, which is one of the six orthodox schools of Hindu philosophy. Shankaracharya's teachings and commentaries on various ancient Hindu scriptures had a profound influence on the development of Hinduism.

### 8.5.8 ANCIENT STITCHED SHIPBUILDING METHOD (TANKAI METHOD)

1. **Context:** Recently, the Culture Ministry collaborated with the Indian Navy to reconstruct an ancient stitched ship.
2. A 21-metre "stitched ship" will be made using an ancient technique of constructing a ship by stitching the planks of wood using ropes, cords, coconut fibres, natural resins and oils.
3. This idea of ship design was taken from an Ajanta painting of a stitched ship.
4. **Ancient trade Routes:**
  - As early as the 3rd century BCE, the Indian Ocean trade routes used to connect Southeast Asia, India, Arabia, and East Africa.
5. **Important ancient ports:**
  - **West coast ports:** Barygaya, Suppara, Calliena, Semylla, Mandagore, Palaepatme, Malizigara, Aurranoobas, Byzantine, Naura, Tyndis, Muziris and Nelcynda.
  - **East coast ports:** Tamralipti, Charitrapur, Paluru, Dantapur, Kalingapatnam, Pithunda, Sopatma, Ghantasala, Poduca, Puhar, Korkai and Camara.

### 8.5.9 KOKBOROK LANGUAGE

1. **Context:** Recently, around 260 people were detained in Tripura during a 12-hour state-wide strike aimed to advocate for the adoption of the Roman script for Kokborok.
2. **About Kokborok Language**
  - It is a Tibeto-Burman language spoken primarily by the Borok people belonging to the State of Tripura.
  - It is one of the official languages alongside Bengali and English. It is also spoken in neighbouring states such as Assam, Mizoram, and parts of Bangladesh, where Tripuri communities are found.
  - Kokborok is written in the Bengali script, though there have been efforts to develop and promote a separate script for the language.
  - Kokborok has several dialects, with variations in pronunciation and vocabulary. Some of the major dialects include Debbarma, Noatia, Jamatia, Reang, and Kolo. First Kokborok Grammar was written by Doulot Ahammad in 1897.



### 8.5.10 SANGEET NATAK AKADEMI AMRIT AWARDS

1. **Context:** Recently, around 84 artists were awarded with the Sangeet Natak Akademi Amrit Awards.
2. **About the Award**
  - It is given to performing artists, teachers and scholars in the field of performing arts.
  - Its purpose is to honour the Indian artists aged above 75 years, who have not been given any national honour in their career so far.
  - This award is given by the Sangeet Natak Akademi and is a one-time award.
  - It has a cash prize of Rs 1 lakh, besides a 'Tamrapatra' and 'Angavastram'.
  - It is given by the Vice president of India.

#### About Sangeet Natak Akademi:

- The Sangeet Natak Akademi – India's national academy for music, dance and drama – is the first National Academy of the arts set-up by the Republic of India. It was created by a resolution of Government of India.
- It was set up in 1952.
- The academy functions as the apex body of the performing arts in the country to preserve and promote the vast cultural heritage of India expressed in music, dance and drama.
- It also works with governments and art academies in states and territories of the country.

### 8.5.11 RASHTRIYA VIGYAN PURASKAR

1. **Context:** Recently, the Department of Science and Technology introduced new awards named Rashtriya Vigyan Puraskar — which will be the highest recognition in the field of science, technology, and innovation in India.
2. **About Rashtriya Vigyan Puraskar:**
  - These awards will replace almost 300 awards, that were given in the field of science and technology, though most of these were internal awards.
  - These will be given in the following 13 domains: Physics, Chemistry, Biological Sciences, Mathematics and Computer Science, Earth Science, Medicine, Engineering Sciences, Agricultural Science, Environmental Science, Technology and Innovation, Atomic energy, Space Science and Technology.
  - They will be given by the President of India or the Vice President and there is no cash component; instead, awardees will receive a certificate and medallion.
3. **Selection Process:**
  - i. A Rashtriya Vigyan Puraskar Committee (RVPC) will be constituted by the Science & Technology Minister, and it will be chaired by the Principal Scientific Advisor to the government. This committee will recommend names for the award from the nominations placed before it.
    - This committee will comprise secretaries of the 6 departments and related ministries of the Government of India.
    - This committee will also have 6 scientists and technologists from different fields of science and technology, along with 4 presidents of science and engineering academies.
    - The awards will be announced annually on May 11 (National Technology Day) and will be awarded on National Space Day (August 23).
4. **Eligibility:**
  - Technologists, scientists working in government or private sector organizations or any individual working independently.
  - These will be open to Persons of Indian Origin (PIOs).



<b>RATIONALISATION OF SCIENCE AWARDS</b>			
<b>National Science Awards will be given in four categories</b>			
<b>Vigyan Ratna:</b> For lifetime achievements & contributions	<b>Vigyan Shri:</b> For distinguished contributions	<b>Vigyan Yuva-Shanti Swarup Bhatnagar:</b> Recognize & encourage young scientists up to the age of 45 years who made an exceptional contribution	
<b>Vigyan Team:</b> Award to be given to a team comprising three or more scientists/ researchers/ innovators who have made an exceptional contribution			
➤ There will be total 56 awards in these four categories put together	➤ There will be no cash component in these awards	➤ Awards will have a 'Sanad' and a medal each	➤ Awards will be given in the 13 domains of science

- Also allows candidates to nominate themselves.

#### 8.5.12 RAMON MAGSAYSAY AWARD

- Context:** Recently, the Assam-based oncologist Ravi Kannan is among the winners of Ramon Magsaysay Award, 2023.
- About Ramon Magsaysay Award**
  - It is an annual award established to honour outstanding individuals and organizations in Asia for their exemplary contributions to the greater good of society.
  - Also referred to as the "Nobel Prize of Asia" and is named after Ramon Magsaysay, the third President of the Philippines.
  - The award was established in 1957 by the Rockefeller Brothers Fund, a philanthropic foundation, to commemorate the achievements and leadership of President Ramon Magsaysay. Magsaysay was known for his integrity and commitment to serving the people and promoting good governance.
  - The award recognizes contributions in various fields, including government service, public service, community leadership, journalism, literature, and creative communication arts. The awardees are selected based on their significant and selfless contributions to society.
  - The Ramon Magsaysay Award Foundation, based in the Philippines, is responsible for the selection process. Nominations are received from across Asia, and a board of trustees, with the help of experts, evaluates the nominations and selects the recipients.
  - Recipients of the award receive a medal, a certificate, and a cash prize.





## 9.

## ETHICS

**9.1 CONSUMERISM: THE DRIVE FOR MATERIAL GOODS****Context**

Consumerism, primarily in the West, is increasing in developing countries like India, leading to excessive possession of gadgets and luxury accessories.

**Trend:**

1. Consumerism feeds on the idea that acquiring more will make us happier, yet it often leaves us feeling emptier than before.
2. In recent times, consumerism has been on the upswing, extending its influence beyond Western countries to emerging economies like India. This surge is visible in the fervent pursuit of an array of gadgets and luxury possessions that people crave, often regardless of genuine necessity.

**What is Consumerism?**

1. Consumerism is a prevailing ideology deeply rooted in the belief that continually increasing the consumption of goods and services from the market is an inherently desirable objective, with a person's well-being and happiness fundamentally hinging on acquiring consumer goods and material possessions.
2. Buying and using stuff is a big part of how our world works. The more we buy, the better the economy usually does. But it's changed a lot over time.
3. In the past, people bought what they needed to survive, like food and shelter. Today, especially among young people, buying things is often about reaching their dreams and goals, like having the latest gadgets. This change shows how our spending habits have shifted from basic needs to personal desires.

**Unveiling the Forces Behind Consumerism: What Fuels Our Desire to Buy?**

1. **Advertising:** Extensive advertising and marketing campaigns are designed to persuade and influence consumers to buy products and services. These campaigns often create desires and needs that may not have existed otherwise.
2. **Debt:** The availability of credit and loans makes it easier for individuals to spend beyond their current means. Credit cards, installment plans, and various financing options can fuel consumer spending.
3. **Obsolescence:** Many products are intentionally designed with a limited lifespan or planned obsolescence. This encourages consumers to replace their items with newer models, promoting continuous consumption. For instance, Smartphone manufacturers periodically release new models with improved features.
4. **Social and Cultural Influences:** Social pressures, trends, and cultural norms can drive consumer behaviour. People often buy products to conform to social expectations or to be part of a particular group or lifestyle. For example, the exchange of gifts on social occasions.
5. **Desire for Status and Self-Expression:** Consumerism is often tied to a desire for status and self-expression. People buy products and brands that they believe reflect their identity or social standing. For instance,
6. **Psychological Factors:** Someone feeling stressed or unhappy might buy items to boost their mood temporarily.
7. **Economic Factors:** Economic factors such as income, employment, and overall economic stability can influence consumer spending. In times of economic prosperity, consumer spending tends to increase.
8. **Peer Pressure and Social Comparison:** People often compare themselves to others, and the desire to keep up with or outdo peers can drive consumer choices.
9. **Globalization and Media:** The ease of access to products and information through globalisation and the media can contribute to consumerism. People are exposed to a wide array of goods and lifestyles, which can stimulate desire.
10. **Technology:** The rapid advancement of technology and the allure of the latest gadgets and innovations can fuel consumerism. Technological advancements often drive the "must-have" mentality.



### Unmasking the Ethical Dilemma: How Consumerism Undermines Our Core Values:

"Consumerism often blurs the line between wants and needs, leading us to forget what truly matters."

1. **Environmental Impact:** Consumerism frequently leads to overconsumption, resulting in resource depletion and environmental degradation. This undermines ethical values related to environmental stewardship. As the environmentalist and author Wendell Berry once said, "The care of the Earth is our most ancient and most worthy and after all our most pleasing responsibility. To cherish what remains of it and to foster its renewal is our only legitimate hope."
2. **Waste and Disposability:** Many products are intentionally designed for short lifespans, fostering a culture of disposability that clashes with sustainability and prudent resource management ethics. Economist Victor Lebow succinctly stated, "Our highly productive economy compels us to adopt consumption as our way of life."
3. **Social Inequality:** The pursuit of consumer goods can exacerbate social inequality, as those with greater resources can access more and better products. This challenge ethical principles of fairness and justice.
4. **Materialism vs. Well-being:** Consumerism often encourages materialism, which places a strong emphasis on the acquisition of possessions. This can overshadow ethical values centred on personal well-being, happiness, and the pursuit of non-materialistic goals. A quote attributed to the Dalai Lama highlights this: "Man sacrifices his health to make money. Then he sacrifices money to recuperate his health."
5. **Manipulative Marketing:** "In a culture where appearance determines identity, emotions, and worth, how you look becomes who you are." Some marketing techniques exploit consumers' vulnerabilities, such as insecurities and desires, undermining principles of transparency and fairness.
6. **Debt and Financial Stress:** Consumerism can lead individuals into financial debt and stress, which can impact their overall well-being. This raises ethical concerns about responsible lending practices and their impact on individuals and families.

### Harmonizing Necessities and Desires: Mastering the Art of Mindful Consumerism

1. **Maslow's Hierarchy of Needs:**
  - "A man is not just hungry; he is also a hungry animal. A hungry animal with a million desires." - Mahatma Gandhi
  - **Explanation:** Abraham Maslow's hierarchy of needs is a psychological theory that categorizes human needs into a pyramid. At the base are physiological needs like food, water, and shelter, followed by safety needs, social needs, esteem needs, and self-actualization at the top. The theory suggests that individuals must first satisfy lower-level needs before higher-level desires become relevant.
  - **Example:** If someone is struggling to meet their basic food and shelter needs, they should prioritize these necessities over desires like buying a new smartphone.
2. **Budgeting and Financial Planning:**
  - "Do not save what is left after spending, but spend what is left after saving." - Warren Buffett
  - **Explanation:** Budgeting involves creating a plan for how you'll allocate your income to different categories such as savings, essential expenses (like rent or groceries), and discretionary spending (wants or desires).
  - **Example:** By setting aside a portion of your income for savings and essential bills, you ensure that your needs are met while also allowing some financial flexibility for desires.
3. **Minimalism:**
  - **Explanation:** Minimalism is a lifestyle and design philosophy focused on simplicity and the intentional reduction of clutter and material possessions. It encourages individuals to own only what they truly need and value.
  - **Example:** Adopting minimalism might lead someone to declutter their home, selling or donating items they no longer need, and reducing their desire for excessive material possessions.
4. **Quality Over Quantity:**
  - **Explanation:** This principle emphasizes that it's often better to invest in high-quality, durable items that may be more expensive initially but can provide greater long-term value, as opposed to constantly replacing cheaper, lower-quality items.



- **Example:** Instead of buying multiple low-quality pairs of shoes that wear out quickly, investing in a high-quality pair that lasts for years aligns with this principle.
- 5. Environmental Consciousness:**
- "We won't have a society if we destroy the environment." - Margaret Mead
  - **Explanation:** This dimension considers the environmental impact of consumption choices. It encourages consumers to make choices that reduce harm to the planet, emphasizing the need to balance personal desires with the well-being of the environment.
  - **Example:** Opting for energy-efficient appliances or choosing products with minimal packaging to reduce waste demonstrates a focus on environmental consciousness.
- 6. Delayed Gratification:**
- **Explanation:** Delayed gratification involves the ability to resist immediate temptations and instead prioritize long-term goals or desires. It can lead to more substantial and fulfilling outcomes.
  - **Example:** Instead of buying an expensive designer handbag on a whim, someone might save for several months or years to purchase it, experiencing a greater sense of achievement when they finally do.
- 7. Mindfulness and Gratitude:**
- "Don't give up what you want most for what you want now."
  - **Explanation:** This dimension focuses on cultivating mindfulness and gratitude, encouraging individuals to appreciate and be content with what they have rather than constantly desiring more.
  - **Example:** Practicing gratitude daily, by acknowledging and appreciating the things you already possess, can reduce the intensity of your desires for additional material possessions.
- 8. Prioritizing Experiences:**
- "The best things in life are not things." - Art Buchwald
  - **Explanation:** Prioritizing experiences over material possessions involves valuing moments, adventures, and personal growth more than accumulating things. It often leads to richer life satisfaction.
  - **Example:** Instead of spending money on a new TV, someone might choose to invest in a vacation experience, creating memories that can last a lifetime.
- 9. Community and Sharing:**
- **Explanation:** This dimension emphasizes the benefits of sharing resources and experiences with others, which can reduce individual desires and foster a sense of community and connection.
  - **Example:** Rather than each neighbor owning a lawnmower, a community might share one lawnmower, reducing the overall desire for each household to own one.
- 10. Self-reflection:**
- "The unexamined life is not worth living." - Socrates
  - **Explanation:** Self-reflection involves examining your desires and the motives behind them. It's about understanding why you want certain things and whether they align with your values and well-being.
  - **Example:** Regularly asking yourself why you desire certain items or experiences can lead to more mindful consumer choices, helping you distinguish between genuine needs and fleeting desires.

**Conclusion:**

In the world of consumerism, as we navigate the tempting aisles of choice, let us remember the timeless words of Pope Francis, 'The emptier a person's heart is, the more they buy.' Our ethical compass should guide us toward mindful consumption, fostering a more meaningful and sustainable existence for ourselves and the planet we call home.



## 9.2 ETHICS OF MEDIA TRIAL

### Context

In September 2023, the Supreme Court has initiated the development of guidelines for police-media interactions during ongoing investigations to curb premature media trials.

### More about it

1. Fairness demands that we uphold the principle of 'innocent until proven guilty,' even in the era of instantaneous news and social media.
2. In today's media environment, individuals are often labelled as criminals even before the legal system reaches a verdict as we had observed in the Sushant Singh Rajput case. In response,

### What is a Media Trial?

1. A media trial, also known as a trial by media, refers to the practice of newspapers, television channels, or other media outlets covering a legal case in a manner that influences public opinion and potentially prejudices the outcome of the trial.
2. This can involve sensationalized reporting, biased commentary, or the premature declaration of guilt or innocence of the accused.
3. Media trials can have a significant impact on a defendant's right to a fair trial and the overall justice system.

### Examples of Media Trial:

1. **Aarushi Talwar Murder Case (2008):**
  - a) In the case of Aarushi Talwar, a teenage girl who was found murdered in her home in Noida, India, the media extensively covered the case. The media's speculative reporting and sensationalism had a substantial impact on the public perception of the case.
  - b) "The media trial in the Aarushi-Hemraj murder case was unprecedented, and it violated all norms of fair trial and justice." - Rebecca John, Senior Advocate
2. **Michael Jackson's Child Molestation Trial (2005):**
  - a) The trial of pop icon Michael Jackson on child molestation charges received widespread media attention. The media's constant coverage and commentary shaped public perception and raised concerns about the fairness of the trial.
  - b) "The media coverage of the Michael Jackson trial has been a prime example of the harmful effects of a media trial, where legal proceedings seem more like a reality show than a court case." - Alan Dershowitz, Legal Scholar

### Players in Media Trials: Inside the Drama of Media Trials:

In a media trial, there are several key stakeholders, each with their distinct roles and motivations:

1. **Media Outlets:** Media outlets aim to attract a larger audience and generate more revenue through extensive and sensational coverage of high-profile legal cases.
2. **Journalists and Reporters:** Journalists seek recognition and career advancement by breaking stories and providing exclusive coverage.
3. **Defendants and Their Legal Teams:** Defendants and their legal teams work to protect their client's reputation and ensure a fair trial, guarding against prejudicial information.
4. **Prosecutors:** Prosecutors strive for convictions in the interest of justice and public safety while navigating the challenges of biased juries and preconceived notions due to media attention.
5. **The Judiciary:** The judiciary's primary concern is to uphold a fair and impartial trial, sometimes necessitating restrictions on media coverage to protect this principle.
6. **Public:** The public seeks information about legal cases and a deeper understanding of the justice system, but also desires a fair trial free from media influence.
7. **Advocacy Groups and Activists:** Advocacy groups and activists leverage media trials to draw attention to their causes and influence public opinion.





8. **Government and Law Enforcement Agencies:** Government and law enforcement agencies strategically use media coverage, especially in cases involving national security or public safety, to shape public perception.
9. **Sponsors and Advertisers:** Sponsors and advertisers provide financial support to media outlets and may be concerned about the impact of media trials on their brand image.
10. **Legal Scholars and Experts:** Legal scholars and experts share their knowledge and insights with the public through media outlets, offering analysis and commentary on legal cases.

#### Ethical issues involved in Media Trials:

1. **Presumption of Innocence:** In the Aarushi Talwar murder case, media outlets portrayed the parents as guilty before a trial verdict was reached, potentially influencing public opinion and the legal process.
2. **Privacy Invasion:** The media's aggressive coverage of the Sunanda Pushkar case included airing private conversations and revealing personal details, which intruded upon the privacy of those involved.
3. **Sensationalism:** The sensational coverage of the Nirbhaya rape case with headlines like "The Brutal Beast" often prioritized dramatic elements over factual reporting.
4. **Subjudice Rule Violation:** The media's incessant coverage of the Sheena Bora murder case, including speculative commentary, raised concerns about prejudicing the trial.
5. **Conflict of Interest:** Media outlets with political affiliations have been accused of framing stories in a biased manner, such as framing certain individuals as corrupt or guilty without concrete evidence.
6. **Vigilantism:** The media's reporting of "cow vigilantism" incidents in India has at times incited public outrage and led to violent confrontations.
7. **Trial by Public Opinion:** Media trials in high-profile cases like the Salman Khan hit-and-run incident raised concerns about the potential influence of public sentiment on the judicial process.
8. **Stigmatization and Harassment:** In cases like the suicide of actor Sushant Singh Rajput, individuals connected to the case faced relentless harassment and character assassination in the media.
9. **Accuracy and Fact-Checking:** Media outlets have been criticized for rushing to be the first to break a story, leading to inaccurate reporting, as seen in the case of a premature report on the death of former Chief Minister Jayalalithaa.
10. **Long-term Impact:** Media trials can have lasting impacts, as in the case of the "Jessica Lal murder case," where even after conviction, the accused faced the enduring stigma of media coverage.
11. **Emotional Exploitation:** Media interviews with grieving families in cases like the Kathua rape and murder case were criticized for exploiting their pain and suffering for sensationalism.

These examples highlight the ethical dilemmas surrounding media trials in the Indian context, where responsible journalism and adherence to ethical standards are essential to uphold the principles of fairness and justice.

#### Striking the Balance: Ethics, Freedom, and Responsibility in Media Trials

1. Finding the right balance in media trials is a **complex and delicate** endeavour, demanding a careful interplay of fundamental principles.
2. **Freedom of the press**, a cornerstone of democracy, must be preserved while simultaneously upholding the **presumption of innocence** until an individual is proven guilty in a court of law.
3. **Ethical reporting** that respects the rights and dignity of all involved parties is paramount, requiring the media to exercise restraint, **avoid sensationalism and bias**, and ensure privacy and respect for personal boundaries.
4. Accuracy, responsibility, and adherence to legal and ethical guidelines are **non-negotiable**, as is transparency about information sources and potential conflicts of interest.
5. Distinguishing stories that serve the public interest from sensationalism, public education on the legal process, editorial responsibility, and self-regulation within media organizations all contribute to finding the equilibrium between press freedom and individual rights, ultimately promoting **responsible journalism** and a **fair legal process**.



### Regulatory Frameworks and Mechanisms to Address Media Trials in India

In India, there are regulatory mechanisms and legal provisions that aim to curb media trials and ensure responsible reporting. While they don't eliminate the possibility of media trials entirely, they do provide tools to address the issue. Key mechanisms include:

- 1. Self-Regulation:** News broadcasters, under the News Broadcasters Association (NBA), follow self-regulatory guidelines and codes of ethics to prevent sensationalism and biased reporting.
- 2. Press Council of India (PCI):** The PCI oversees print media, addressing complaints against newspapers and magazines. It emphasizes responsible journalism and can act against publications that violate ethical standards.
- 3. Cable Television Networks (CTN) Amendment Rules, 2021:** These rules establish a three-level regulatory mechanism for television broadcasting, where broadcasters are expected to self-regulate (Level I), and self-regulatory authorities ensure compliance (Level II). Oversight by the Central government (Level III) serves as a last resort.
- 4. Legal Framework:** Existing defamation laws and provisions can be used to hold media outlets accountable for false reporting or unfair treatment of individuals involved in legal cases.
- 5. Public Grievance Mechanisms:** Media outlets often have internal mechanisms to address public grievances and complaints about their content. These mechanisms encourage viewers to report concerns and seek redress.

While these mechanisms aim to curb media trials and promote responsible journalism, challenges persist, and their effectiveness can vary. Strengthening these mechanisms and promoting media ethics through education and awareness are ongoing efforts to address the issue of media trials in India.

### Conclusion

In the ethical dimension of media trials, our compass should always be guided by Joseph Pulitzer's words: 'Our Republic and its press will rise or fall together.' Ensuring a responsible, fair, and principled media is not just a moral duty but a safeguard for the very essence of our democracy.



## 10. SCHEMES IN NEWS

### 10.1 ATMANIRBHAR BHARAT ROZGAR YOJANA (ABRY)

#### Latest Context:

Recently, the Atmanirbhar Bharat Rozgar Yojana (ABRY) has crossed its initial employment generation target. Till 31<sup>st</sup> July 2023, the ABRY has enrolled almost 7.58 million new employees.

#### Atmanirbhar Bharat Rozgar Yojana

- About:** It was launched by the Government of India to promote employment generation in the wake of the COVID-19 pandemic. It is being implemented through the Employees Provident Fund Organisation (EPFO).
- Objective:** The main objective was to incentivize employers to create new employment opportunities and facilitate the re-employment of workers who may have lost their jobs during the COVID-19 pandemic.
- Duration:** The scheme was initially announced in November 2020 and was meant to run until June 30, 2021. The government later extended registration until March 31, 2022.
- Eligibility:** To be eligible for the scheme, the establishment had to be registered with the Employees' Provident Fund Organization (EPFO) and have a Universal Account Number (UAN) for its employees.

#### Benefits under the scheme:

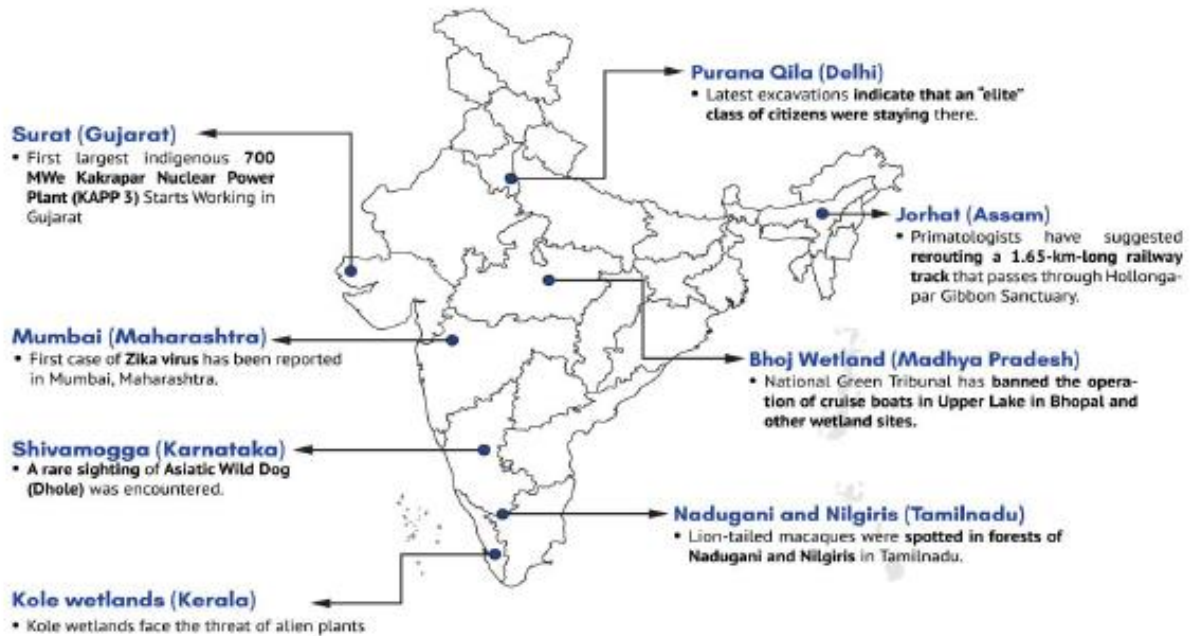
- The benefits will be available for a period of 24 wage months from the date of registration of the new employee working with the employer of the eligible establishment.
- In case of establishments employing less than or upto 1000 employees, the Government will pay both 12% of employees and 12% of employers' contribution of wages towards the Employees' Provident Fund (EPF).
- In case of establishments employing more than 1000 employees, the Government will pay only employees EPF contribution (12% of wages in respect of new employees).
- An organisation, initially with less than 1000 employees in September 2020, will still receive employer's share support, even if the EPF members with UAN exceed 1000 in any month during the scheme.
- An employee getting monthly wage of less than Rs.15000, who was not working in any organisation registered with the Employees' Provident Fund Organization (EPFO) before 1st October, 2020 and did not have a UAN or EPF member account number before 1st October 2020 is eligible for the benefit.
- Any EPF member having a UAN and is drawing a monthly wage of less than Rs. 15000, who made exit from employment during the Covid pandemic from 01<sup>st</sup> March 2020 to 30<sup>th</sup> September 2020 and did not join employment in any EPF-covered establishment up to 30<sup>th</sup> September 2020 is also eligible for the benefit.
- Employers had to claim the benefits under the scheme through the EPFO's online portal. The government would then transfer the funds to the employer's and employee's EPF accounts.

#### Exclusion:

- Any eligible new employee under this Scheme will become ineligible if his/her monthly wage exceeds Rs 14999/- at any point of time during this scheme period.
- If any new employee is already a registered beneficiary under Pradhan Mantri Rojgar Protsahan Yojana (PMRPY) / Pradhan Mantri Paridhan Rojgar Protsahan Yojana (PMRPY), no benefit in respect of such new employee shall be available under ABRY.



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