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PRELIMS CUM MAINS 2023 & 2024

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NOTE:

Dear Students,

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



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



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



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



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

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1. POLITY AND GOVERNANCE

1.1. CRIMINAL PROCEDURE (IDENTIFICATION) RULES, 2022

Why in news?

Ministry of Home Affairs (MHA) notified the Criminal Procedure (Identification) Rules, 2022 governing **The Criminal Procedure (Identification) Act (CPA), 2022** which was passed in March this year.

About Criminal Procedure (Identification) Rules, 2022

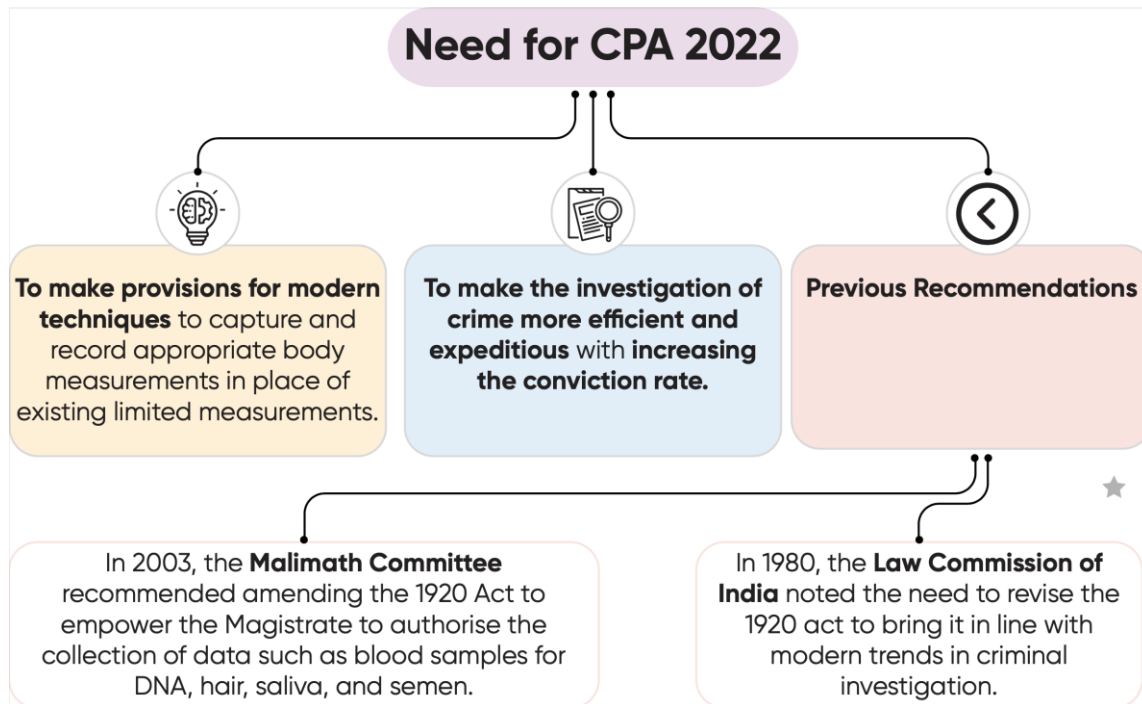
- 2022 Rules specify the details for CPA in order to **lay down the procedure for taking measurements of convicts and other persons for the purposes of identification and investigation** in criminal matters and to preserve records.
- **Key features of the rules**
 - **Taking Measurements:** The Rules specify that for certain persons measurements will not be taken unless they have been charged or arrested in connection with any other offence.
 - **Authorised persons to take measurements:** The Rules specify that an authorised user, or any person skilled in taking the measurements, or a registered medical practitioner, or any person authorised in this behalf may take such measurements.
 - **Rule-making power to National Crime Records Bureau (NCRB):** NCRB under MHA will direct states on how to collect and store the information.
 - **Punishment:** Any act of unauthorised access, distribution or sharing of data collected under the Act shall be punishable as per the provisions of the **Indian Penal Code, 1860 and the Information Technology Act, 2000.**

Concerns with the notified rules

- **Rules are restricting the grounds** under which a person's data may be collected.
- **Rules do not define who is a person skilled in taking measurements**, while expanding the list of persons who may take measurements.
- **Excessive Delegation of rule-making power to NCRB** may violate the principle of separation of roles between the entity that issues guidelines and the entity that has to follow such guidelines.
- **Records to be destroyed on request:** To destroy any record, a request has to be made to a nodal officer.
 - While the Act empowers NCRB for suo-moto destruction of records, **the rules put the onus on the individual to request for such destruction.**

About the Criminal Procedure (Identification) Act (CPA), 2022

- The Act **repealed the Identification of Prisoners Act, 1920** which was enacted to authorise the taking of measurements and photographs of convicts and other persons.
- 2022 Act **expands the scope and ambit of the "measurements"** which can be taken under the provisions of law.
 - It will **help in unique identification of a person involved in any crime** and will assist the investigating agencies in solving the criminal case.



- **Key Provisions of the 2022 Act**

- **Expands the ambit of certain provisions:** The Act expands the type of data called as **measurements** that may be collected, persons from whom such data may be collected, the authority that may authorise such collection and the rule making power.
- **Retention of details:** Act requires the details collected to be **retained in digital or electronic form for 75 years from the date of collection.**
 - ✓ The record **may be destroyed in case of persons who have not been previously convicted**, and who are released without trial, discharged, or acquitted by the court.
- **Resistance to giving details:** Resistance or refusal to give details will be considered an offence under the Indian Penal Code, 1860.
- **Role of the National Crime Records Bureau (NCRB):** Act empowers NCRB to collect the details about the persons covered under the act from state governments, UT administrations, or other law enforcement agencies.
 - ✓ Other functions of NCRB under the Bill include **storing, processing, disseminating and destroying those details.**

Comparison of key provisions of the 1920 Act and the 2022 Act

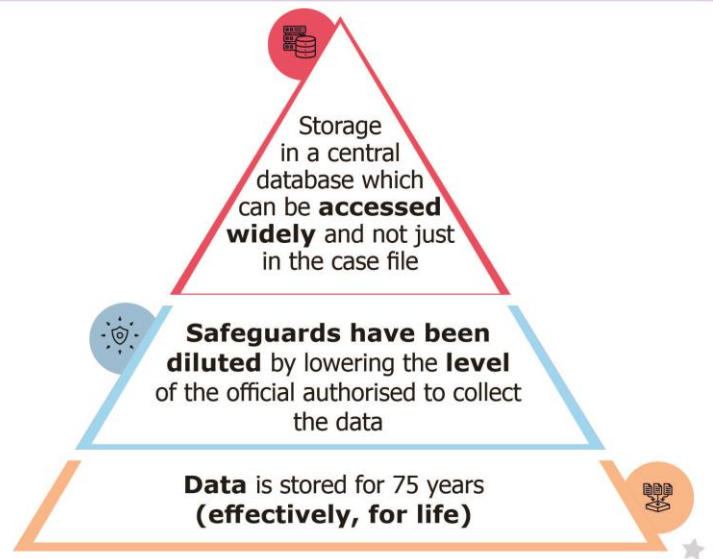
| Parameters | 1920 Act | Changes in the 2022 Act |
|--|--|---|
| Data permitted to be collected | <ul style="list-style-type: none"> • Fingerprints, foot-print impressions, photographs. | Adds: <ul style="list-style-type: none"> • biological samples, and their analysis, • Iris and retina scan. • behavioural attributes including signatures, handwriting, • examinations under sections 53 and 53A of CrPC (includes blood, semen, hair samples, and swabs, and analyses such as DNA profiling) |
| Persons whose data may be collected | <ul style="list-style-type: none"> • Convicted or arrested for offences punishable with rigorous imprisonment of 1 year or more. • Persons ordered to give security for good behaviour or maintaining peace. • Magistrate may order in other cases collection from any arrested person to aid criminal investigation. | <ul style="list-style-type: none"> • Convicted or arrested for any offence. However, biological samples may be taken forcibly only from persons arrested for offences against a woman or a child, or if the offence carries a minimum of 7 years imprisonment. • Persons detained under any preventive detention law. • On the order of Magistrate, from any person (not just an arrested person) to aid investigation. |
| Persons who may require/ direct collection of data | <ul style="list-style-type: none"> • Investigating officer under CrPC, officer in charge of a police station, or of rank Sub-Inspector or above. • Magistrate. | <ul style="list-style-type: none"> • Officer in charge of a police station, or of rank Head Constable or above. • Head Warden of a prison. • Metropolitan Magistrate or Judicial Magistrate of first class. Executive Magistrate in case of persons required to maintain good behaviour or peace, |
| Rule-making power with regard to manner of collecting details etc. | Vested in the state government. | Now vested to State as well as the Central government. |

Key concerns with the act

- **May violate right to privacy:** The information specified under the Act forms part of the personal data of individuals and several provisions (refer infographic) may not meet the **necessity and proportionality standards laid out by Supreme Court in 2017.**
- **Amounting to forcible extraction:** The act attaches criminal liability for resistance or refusal to allow taking measurements.
 - Such criminalization is in **violation of an individual’s right against self-incrimination** under Article 20(3).
- **Heightens the possibilities of misuse:** Act allows for measurements to be taken if a person has been convicted/ arrested for any offence, including **petty offences.**

- Further, there is **no limitations on the use** of the data collected.
- Such discretion is likely to **result in abuse of the law at lower levels and overburdening** of the systems used for collection and storage.
- Such collection can **also result in mass surveillance**, with the database under this law being combined with other databases such as those of the Crime and Criminal Tracking Network and Systems (CCTNS).
- **Limitations of NCRB:** NCRB is ill-equipped to deal with quality management for a database containing records of the proposed measurements, particularly of biological samples and their analysis.
- **Predictive policing:** The inclusion of derivative data such as “analysis” and “behavioural attributes” have raised concerns that data processing may go beyond recording of core “measurements for predictive policing.”

Provisions that may not meet the standards laid out by Supreme Court in Puttaswamy case



Conclusion

The 2022 Act is a welcome piece of legislation which is **targeted towards advanced prisoner identification techniques and a more efficient investigation process**. However, the 2022 Act had garnered heavy **criticism like excessive, disproportionate, violative of the right to privacy**, as well as raising data privacy concerns.

A law that restricts fundamental rights must **be sufficiently clear and precise in terms of the extent, scope and nature of the interference allowed**, along with the presence of sufficient safeguards to prevent abuse of powers by authorities.

1.2. PRISON REFORMS

Why in news?

National Crime Record Bureau (NCRB) has released **Prison Statistics in India (PSI) Report, 2021**.

About PSI Report 2021

- PSI is one of the 3 **annual flagship reports by the NCRB**.
- It provides data like **numbers and available capacity** of different types of jails, **strength** and training of jail officials and prison budget and expenditure.
- **Key findings of the report**
 - **High Undertrials:** Nearly **8 out of every 10 prisoners** in Indian jails are awaiting trial.
 - ✓ **Uttar Pradesh** jails record the **highest number of undertrials** followed by Bihar and Maharashtra.
 - **Disadvantaged sections prisoners:** 67.5% inmates belong to SC, ST and OBC communities.
 - ✓ **80% of undertrials** are from disadvantaged sections of society.
 - **Understaffed:** The sanctioned strength of jail-staff was 89,479 while the actual strength was 64,449 as due to **vacancies not being filled up**.
 - **Budget & infrastructure:** The sanctioned budget for the year 2021-22 has **increased by 13.0%** in comparison to the year 2020- 21.

About National Crime Record Bureau (NCRB)

- NCRB was set-up in **1986 under the Ministry of Home Affairs**.
- It functions as a **repository of information on crime** and criminals so as to assist the investigators.
- It was entrusted with the responsibility for monitoring, coordinating and implementing the **Crime and Criminal Tracking Network & Systems (CCTNS)** project in the year 2009.
- NCRB is also entrusted to maintain **National Database of Sexual Offenders (NDSO)** and share it with the States/UTs on regular basis.
- **Other reports released by NCRB:**
 - **Accidental Deaths & Suicides in India:** This report provides **age-group-wise and sex-wise details** of accidental deaths, traffic accidents and suicides including **farmer’s suicides** which is a crucial matter in India.
 - **Crime in India:** Information on **cognizable crimes as reported in police stations, police casualties, police firing, police & civilians’ casualties**.

- ✓ **Measures have been taken to improve the infrastructure** of the prisons like construction and renovation of jails, quarters for jail staff, installing CCTV cameras, etc.

OVERCROWDED PRISONS

Overall Occupancy Rate

130.2%

Male

134%

Female

77.9%

Transgender

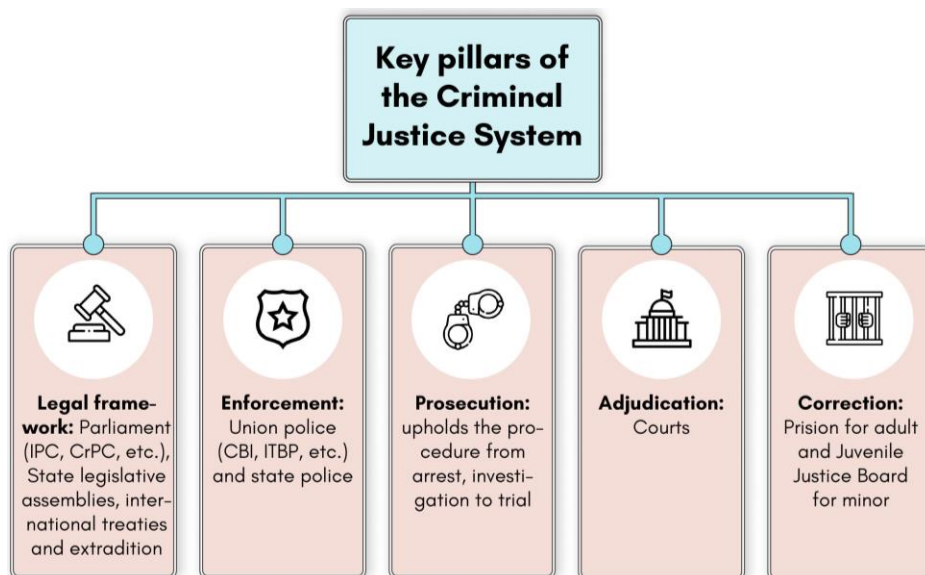
211.6%



*19 States/UTs have reported more than 100% occupancy rate

About Prisons in India

- 'Prisons'/'persons detained therein' is a **State subject**.
 - **Administration and management of prisons** is the responsibility of respective **State Governments**.
 - It is governed by the **Prison Act 1894** and the **prison manuals** of the respective state governments.
- **Ministry of Home Affairs** also provides regular guidance and advice to States and UTs on various issues concerning prisons and prison inmates.
- **Need for efficient governance of prison**
 - Prison is an **integral part of the criminal justice system (CJS)** that deals with crime prevention, investigation, prosecution, punishment and correction (refer the infographics).
 - **Prisons are correctional houses** as administration of prison has evolved from retributive approach to the concept of **reformation and rehabilitation of the offenders**.
 - It is **important to reintegrate prisoners with the society** after their release as potential contributors to the economy.



Challenges in prison governance

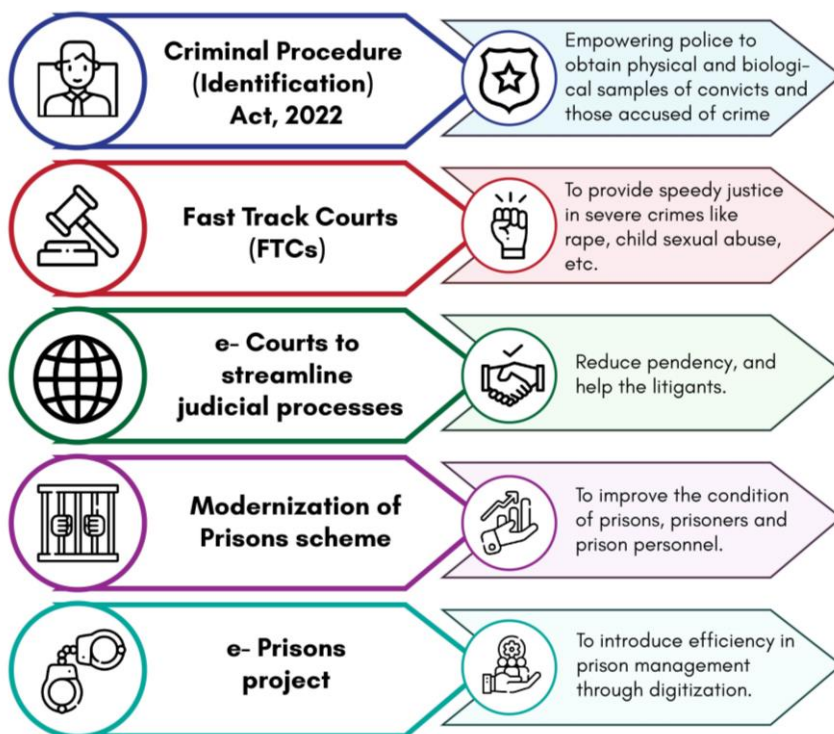
- **Overcrowding:** Overcrowded prisons adversely impact on hygiene, management, mental and physical health of inmates.
- **Insufficient legal aid:** Majority of prisoners, who are in prisons have not been tried, the absence of legal aid until the point of trial reduces greatly the value of the India's system of legal representation to the poor.
- **Staff Shortage:** Prisons in half of the states and Union Territories at the end of last year were functioning with one-fourth positions vacant.
 - 14 states have more than 40% vacancies for health staff including doctors, lab technicians, pharmacists and compounders. Hence, healthcare in prisons remains low-quality and difficult to access.
- **Custodial Tortures /Deaths:** Brutal physical treatment in custody by police official is another major problem of jails in India.
 - According to the National Human Rights Commission (NHRC) in the last decade (2010-2020) on an average 5 people died in judicial custody every day.
- **Corruption:** Due to the closed nature of imprisonment and the inherent risk of insufficient public scrutiny possibilities of corruption remains high among prison staff.

- **Activities like trafficking of mobile phones, drugs or weapons** inside the prison walls in exchange for bribes poses threats to national security also.
- **Vulnerability of women:** Most of the women inmates are illiterate who are arrested on petty charges and they are not aware about legal procedures. They also remain particularly vulnerable to **custodial sexual abuse**.

Way Ahead

- **All India Prison Service:** The All-India Committee on Jail Reforms (1980– 1983), under **Justice A N Mulla** recommended establishing an **“Indian Prisons and Correctional Service”** as a **professional career service** with appropriate job requirements, sound training and proper promotional avenues.
- **Adherence of Model Prison Manual 2016 by all the States and UTs:** The manual aims at bringing in basic uniformity in laws, rules and regulations governing the administration of prisons and the management of prisoners all over the country.
- **Prison Infrastructure:** Technological up-gradations such as biometric identification facilities, prisoner information system, provision of CCTVs, video conferencing facilities along with critical infrastructure such as hospital, sanitation systems are needed.
- **Reducing undertrials:**
 - **Timely and complete production of under trials before the court** so that a trial is not prolonged.
 - Introducing the **system of plea bargaining** which refers to negotiation where the accused agrees to plead guilty in exchange for certain concessions by the prosecution.
 - **Capacity building in lower judiciary** to reduce the number of adjournments while hearing bail pleas.
- **Proper prison inspection:** Regular and timely inspection from judicial officers must be conducted.
 - **Lok Adalat could be involved for constant monitoring of prisons** to identify inadequacies and shortcomings in the prison administration.
- **Improving investigation methodologies:** The currently applied methods use torture as a tool for investigation which can be altered by giving a priority to Human Rights.
 - This can be done through ratification of the **1987 UN Convention Against Torture** as well as enactment the anti-torture bill proposed by the legal advisory body of the government.

Initiatives taken for improving Governance of Prison



Related news



SC on bail of life convicts

- The SC said that convicts **who have completed 10 years of their life sentence and whose appeals would not be heard in the near future** by the High Court (HC) **should be released on bail** unless there exist cogent reasons to deny the relief.
 - It also asked **all high courts to provide details of life convicts who have served 14 years of their sentence** so that they can be considered **for premature release** as per the existing remission policies in states.
 - In India, **serving 14 years in jail is mandatory** for such convicts to apply for remission.

Conclusion

Since, prison is also a correction house the basic dignity of an arrested person or convicted person must be given proper respect. It is need of the hour that provisions of security of prisoners mentioned in jail manuals must be followed strictly and also well-equipped and trained prison staff should be appointed to look for safety measures.

To know more about **Criminal Justice System**, please refer to our following Weekly Focus Document.

| | | |
|--|---|---|
|  <p>India's Criminal Justice System: Reforming Institutions For Delivering Justice</p> | <p>The entire existence of the orderly society depends upon sound and efficient functioning of the Criminal Justice System. Understanding the evolution and various components of criminal justice system in India, the document examines various maladies and faults with which the existing criminal justice system is affected. It further pinpoints various alternatives and suggestions for strengthening the system in order to achieve equity and prompt delivery of justice in the country.</p> |  |
|--|---|---|

1.3. INTERNAL PARTY DEMOCRACY

Why in News?

Election Commission is pushing for internal democracy within political parties in India.

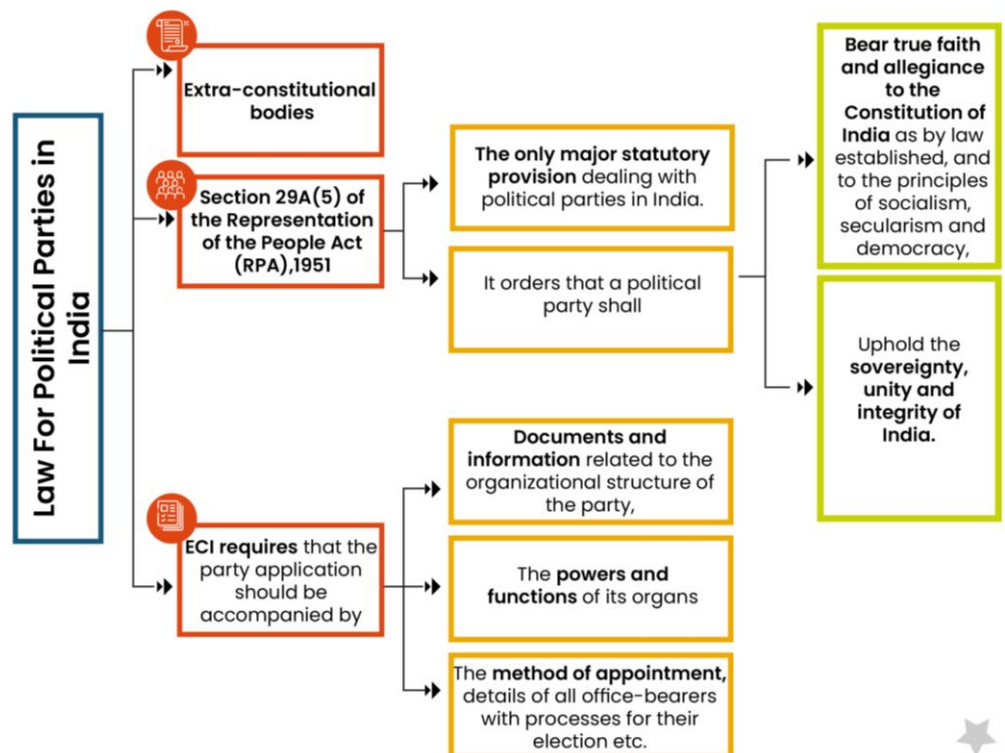
About Internal Party Democracy

- Internal democracy in political parties **also known as Intra-party democracy** refers to the **level and methods of including party members in the decision making** and deliberation within the party structure.
- It **helps to nurture citizens' political competencies** and **producing more capable representatives** which in turn ensures that the party produces better policies and political programmes.
- In India, there are **no explicit provisions in the Constitution** that lays down guidelines for regulating the conduct of the political parties in India.

- Only **Section 29 (A) of the Representation of the People Act, 1951** mandates the registration of political parties. (refer infographics)
- Election Commission of India (ECI) is also not equipped** to regulate the functioning of the political parties.

Need for Internal Party Democracy in India

- Ensuring equal representation:** The procedure for determining the leadership and composition of the parties are not completely open and inclusive.
 - This adversely **impacts the constitutional right of all citizens to equal political opportunity** to participate in politics and contest elections.



- **To prevent Dynasty Politics:** The lack of intra-party democracy has contributed to the growing nepotism in political parties.
 - Data suggest that all MPs below the age of 30 in the 15th Lok Sabha are from political families.
- **To reduce criminalization of Politics:** As there is no well-defined process for the distribution of tickets to candidates, candidates with adequate social and financial resources are given primacy.
 - This has led to a problem of **candidates with criminal backgrounds contesting elections.**
- **Decentralisation of Power:** Every political party has State and local body units, an election at each level will allow creation of power centres at different levels.
 - This will **facilitate decentralisation of power** and the decision making.
- **Healthy functioning of democracy:** As political parties are the most crucial actors of Indian democracy, their democratic functioning, **transparency and accountability becomes inextricably inter-linked** to the health and vibrancy of the democracy.



Challenges for setting up Internal-Party Democracy

- **Inadequate power with Election Commission:** In the case of '**Indian National Congress vs Institute of Social Welfare & Others**', 2002, SC held that ECI cannot take punitive action against registered political parties for violating the principles of inner-party democracy.
- **Absence of a credible regulatory framework:** There is no legal ground on which elections can be mandated within political parties.
- **Stringent anti-defection law:** The Anti-Defection Act of 1985 requires the party legislators to act according to the party whip.
 - It therefore deters them from voting in the national and state legislatures according to their individual preferences.
- **Resistance by Dynastic, Caste and Religion parties:** Most of the parties are openly caste- or religious-based and also their finances are dubious and opaque.
- **Elitism in parties:** Leadership in political party is mostly decided by a coterie of party functionaries who holds sway over the party administration.

Way Forward

- **Constitutional status for parties:** Political parties can be given Constitutional status.
 - **Ex:** Germany gives constitutional status to political parties. As per its law, their internal organisation must conform to democratic principles.
- **Proper rules:** There should be a specific provision in the Constitution/rules and regulations/memorandum of the party regarding organisational elections at different levels and the periodicity of such elections and terms of office of the office-bearers of the party.
- **Internal elections for leadership positions:** This should be carried out through debates, campaigns, meetings and discussions within the party. A responsible body within Political parties can solve this purpose.
 - **For instance,** in the U.K., the Conservative Party has a Central Council and an Executive Committee which elects its President, a Chairman and Vice Chairmen at its annual meeting.
- **Empowering the ECI** to deregister parties that fail to comply with the rules.
- **State funding of political parties** could bring in equity and accountability among parties.
- **Implement suggestions from committees etc:**
 - Committees like **Dinesh Goswami Committee, the Tarkunde Committee and Indrajit Gupta Committee,** has strongly argued for more transparent working of the political parties in the country.
 - **1999 Law Commission Report** strongly recommended the introduction of a regulatory framework for governing the internal structures and inner party democracy of the political parties.
 - **Draft Political Parties (Registration and Regulation of Affairs) Act, 2011** aims to regulate the constitution, functioning, funding, accounts and audit, and other affairs of political parties participating in elections.

To know more about **Electoral Reforms**, please refer to our following Weekly Focus Document.

| | | |
|--|---|---|
|  <p>Electoral Reform: An Approach to Effective Democracy</p> | <p>Elections have become India’s great festivals—festivals which have been marked since the seventies by rigging, booth capturing, threat to voters and violence in a large number of constituencies in several states. The need for electoral reforms has been recognised by all political parties and many suggestions have been made in this regard. This document explains the basics of free and fair elections, shortcomings of the entire election process and takes one on the journey of electoral reforms in India.</p> |  |
|--|---|---|

1.4. CORPORATE SOCIAL RESPONSIBILITY AMENDMENT RULES, 2022

Why in News?

According to a recent notification issued by the Ministry of Corporate Affairs, the government has amended rules governing corporate social responsibility (CSR).

Changes brought by the Amendment Rules

- **Establishment of a CSR committee for unspent CSR amount:** Companies can set aside unused funds for CSR in designated account as long as they use them within **three financial years**. Its utilisation is to be monitored by the **CSR committee**.
- **Change in Expenditure for Impact Assessment:** The Amendment Rules provide that the cost of social impact assessments, which can be considered as CSR spending, **cannot be greater than 2% of all CSR expenditures for the applicable financial year or Rupees 50 lakh**, whichever is higher.
- **Revised format for annual report on CSR activities:** The Amendment Rules provide for a new format for the annual report on CSR activities.
 - For instance, companies have to give brief explanation of its **CSR policy**, Information about the **members of the CSR committee** and web links for the impact assessments of CSR projects.



Corporate Social Responsibility (CSR) and its significance

- CSR require certain companies to mandatorily **spend at least 2% of their average net profit of the immediately preceding three financial years** on CSR activities under Section 135 of the Companies Act, 2013. A company having
 - a **net worth** of Rupees **500 crore or more**.

- a turnover of Rupees 1000 crore or more.
- a net profit of Rupees 5 crore or more.
- Foreign companies having a branch office or project office in India fulfilling criteria mentioned above.
- The qualifying company will be required to **constitute a CSR Committee consisting of 3 or more directors.**

Significance of CSR



For Companies

- Bolstered brand image and Increased customer loyalty.
- Enhanced access to capital and markets.
- Attracting new talent, employee retention and better productivity.
- Better risk management/reduced systemic risk.
- Minimized environmental impact.



For local community

- Better income and Employment opportunity.
- Increased standard of living.
- Promotion of indigenous culture.
- Empowerment of minorities, women.



For Government

- Speedy and smooth attainability of sustainable outcomes.
- Free up existing resources and harness new resources through partnerships.
- Enhanced public welfare and trust.

Challenges faced in implementation of CSR

- **Geographical Bias:** Firms tend to fund those projects that are **closer to where they are based**. This results in industrialized areas getting preference over the poorer and underdeveloped areas that are more in need of some development and aid.
- **Lack of reporting:** Most firms don't mention the exact amount of expenditure spent by them on the CSR activities. Hence, it becomes **difficult to estimate the exact amount of funds spent by the firms**.
- **Spending skewed towards some areas:** Of the nine different schedules prescribed by The Companies Act, 2013, two schedules- **combating various diseases and promotion of education accounted for 44% of the total CSR expenditure**.
 - While **reducing child mortality received no funding** and eradicating **extreme hunger and poverty** received only 6% of the total CSR expenditure.
- **Lack of Community Participation in CSR Activities:** This is largely attributable to limited awareness about CSR and minimal outreach efforts by companies.
- **Issue of Transparency:** Companies have complained that there exists lack of transparency on the part of the local implementing agencies as they **do not make adequate efforts to disclose information on their impact assessment, utilization of funds etc.**
- **Narrow Perception towards CSR Initiatives:** NGOs and Government agencies usually possess a narrow outlook towards the CSR initiatives of companies.
 - Often CSR initiatives are defined being more **donor-driven than local in approach**. As a result, they find it hard to decide whether they should participate in such activities at all in medium and long run.

Spending by companies through CSR

- During the period from **2014-15 to 2020-21**, companies spent around **Rs 1.09 lakh crore towards CSR activities**.
- The **reporting rate** among eligible companies in the last four years **has been 64 per cent**.

Way forward

- **Embrace a participatory approach with communities and NGOs:** Companies should engage with NGOs and communities as partners across program design and implementation.
- **Prioritize marginalized populations** within their existing programs by explicitly taking efforts for communities such as scheduled castes/scheduled tribes, women, or people with disabilities.
- **Hire a professional CSR team:** Companies should hire professional CSR teams that bridge corporate and social sectors, and create advisory boards with expertise that complements their corporate boards.
- **Involving the beneficiaries in CSR spending:** CSR spending could be discussed and deliberated so that awareness is generated among the stakeholders – poor people and those living in deficient conditions for whom CSR spending was instituted.
- **Dedicated department:** There could be a dedicated Department of CSR in the Ministry for Corporate Affairs at the Central level and the one in the Finance Ministry of the State.

1.5. NEWS IN SHORTS

1.5.1. SOCIAL DEMOCRACY

- The **Nordic (Scandinavian) Model of Social Democracy** is in discussion due to recent Sweden elections.
- The Nordic model of social democracy is the **combination of social welfare and economic systems** adopted by Nordic countries (Sweden, Norway, Finland, Denmark, and Iceland).
- The **features of social democratic system** include;
 - **Reliance on representative and participatory democratic institutions** where separation of powers is ensured;
 - **Comprehensive social welfare schema with emphasis on publicly provided social services** and investment in child care, education and research among others, that are funded by progressive taxation.
 - **Presence of strong labour market institutions** with active labour unions and employer associations.
 - ✓ This allow for significant collective bargaining, wage negotiations and coordination besides an active role in governance and policy.
- This model has **helped these countries achieve significant outcomes** like:
 - high levels of international trade and participation in globalisation,
 - economic progress,
 - low levels of inequality,
 - high living standards
 - highest labour participation rates in the world.
- **Key reasons for the thriving social democratic model** in the Nordic countries has been their **relatively smaller and more homogenous populations** enabling focused governance.
- But **aging populations and immigration are posing recent challenges** to Nordic model of social democracy.

1.5.2. LIVE STREAMING OF CONSTITUTION BENCH HEARINGS

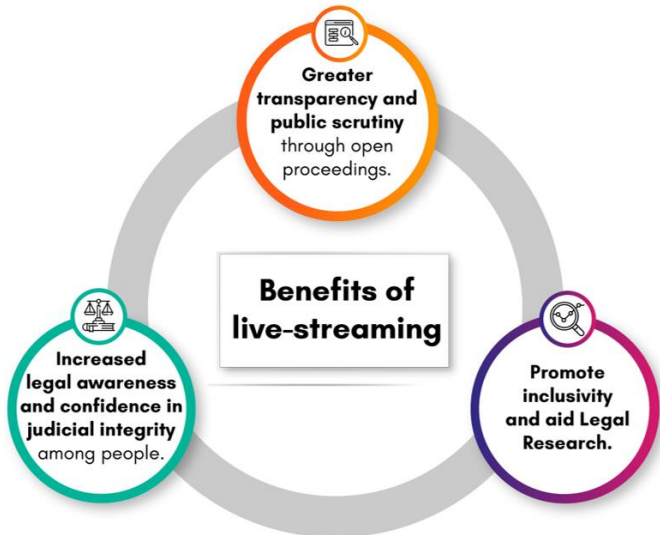
- Supreme Court (SC) will Live Stream Constitution Bench Hearings from September 27.
- In **2021, SC's e-Committee**, came out with **model rules for live-streaming and recording** of court proceedings in India.
 - Earlier, in **2018 (Swapnil Tripathy vs Supreme Court)**, the Supreme Court declared **live telecast of court proceedings** part of the **right to access justice** under **Article 21** of the Constitution.
 - Currently, **six high courts**, namely **Gujarat, Orissa, Karnataka, Jharkhand, Patna, and Madhya Pradesh**, live-stream court proceedings through their channel on YouTube.
 - Live-streaming of SC proceedings is part of **third phase of e-courts project**, an initiative to **implement use of information and technology in judiciary**.
- **Challenges and Issues**
 - **Lack of Information and Communication Technology (ICT) infrastructure.** E.g. use YouTube instead of their own platform.
 - **Lack of trained manpower and Digital Divide** in India.
 - **High Data Security and privacy requirements** to ensure safety of victims and witnesses.
 - **Risk of sensationalism by the media** and greater influence of public opinion on judges.

About Constitution Bench

- When a significant legal dispute has to be resolved or a provision of the Constitution needs to be interpreted, **Article 145(3) of the Constitution permits the establishment of a constitutional bench of 5,7 or 9, etc. judged to do so.**

1.5.3. CHILD WELFARE COMMITTEE (CWC)

- Government has notified **Juvenile Justice (Care and Protection Amendment) Model Amendment Rules, 2022** that bar a person associated with an organization receiving foreign funds to be a part of CWC.
- CWCs were established under Juvenile Justice (Care and Protection of Children) Act, 2015 for Children in need and care of protection.
- They are constituted for every district or group of districts by state government for care and protection of children who are abused, exploited, abandoned or orphaned.
- It consists of a chairperson and four other members of whom at least one shall be a woman and another, an expert on child matters.



SMART QUIZ

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



फाउंडेशन कोर्स सामान्य अध्ययन

प्रारंभिक एवं मुख्य परीक्षा 2023

इनोवेटिव क्लासरूम प्रोग्राम

- प्रारंभिक परीक्षा, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक को विस्तृत कवरेज
- मौलिक अवधारणाओं की समझ के विकास एवं विश्लेषणात्मक क्षमता निर्माण पर विशेष ध्यान
- एनीमेशन, पॉवर प्वाइंट, वीडियो जैसी तकनीकी सुविधाओं का प्रयोग
- अंतर - विषयक समझ विकसित करने का प्रयास
- योजनाबद्ध तैयारी हेतु करंट ओरिएंटेड अप्रोच
- नियमित क्लास टेस्ट एवं व्यक्तिगत मूल्यांकन

- सीसेट कक्षाएं
- PT 365 कक्षाएं
- MAINS 365 कक्षाएं
- PT टेस्ट सीरीज
- मुख्य परीक्षा टेस्ट सीरीज
- निबंध टेस्ट सीरीज
- सीसेट टेस्ट सीरीज
- निबंध लेखन - शैली की कक्षाएं
- करेंट अफेयर्स मैगजीन

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DELHI: 15 SEPT | 2 AUG
1 PM | 9 AM

LUCKNOW: 7 JULY
9 AM

GS FOUNDATION 2024

10 JAN | 9 AM

JAIPUR: 16 AUG
4 PM

लाइव/ऑनलाइन कक्षाएं भी उपलब्ध

2. INTERNATIONAL RELATIONS

2.1. INDIA-SAUDI ARABIA

Why in news?

Minister of External Affairs recently had his first visit to Saudi Arabia.

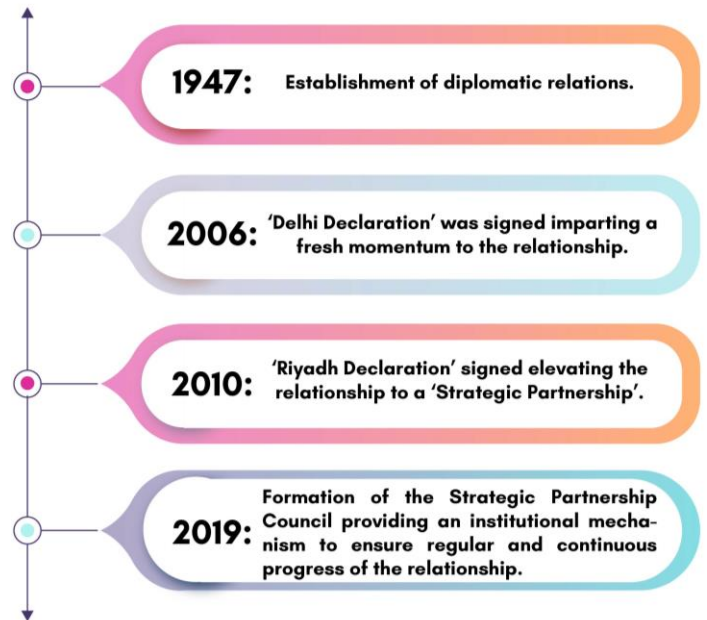
Highlights of the visit

- India initiated talks with Saudi Arabia for **Rupee-Riyal trade**.
- Both countries agreed to **cooperate in joint projects** such as a west coast refinery, LNG infrastructure, and strategic petroleum storage facilities.
- **MoU on Mechanism of Consultations between India and Gulf Cooperation Council (GCC)** was signed for institutionalisation of annual dialogue between India and the GCC.

Significance of India-Saudi Arabia Relations

- **Geostrategic ally:** Saudi Arabia's strategic location in West Asia and the political and economic power that it leverages alongside global oil reserves makes it **crucial to India's foreign policy priorities** in the region.
- **Major trade and investment partner:** Saudi Arabia is India's **fourth-largest trading partner** with bilateral trade valuing at \$42.86 billion in FY 22.
 - **Saudi Investments from companies** like ARAMCO and others amounting to US\$3.13 billion are important for India.
- **Securing India's Energy Needs:** Saudi Arabia is a key supplier of hydrocarbons to India, supplying 18% and 30% of India's crude oil and LPG requirements respectively.
 - Given **India's growing energy demands, and US sanctions over India's traditional oil suppliers like Iran**, having alternative suppliers is crucial for India.
- **Home to India's overseas community:** There are over 2.8 million Indian expatriates gainfully employed in the Kingdom who send valuable foreign exchange remittances.
- **Collaboration in tough times:** Throughout the COVID pandemic, both nations have been sharing national experiences and supporting each other to ensure continued flow of food, medicines and other essential items.
- **Cultural convergence:** Saudi Arabia is home to the holy cities of Mecca and Madinah where thousands of Indians visit for the annual **hajj and umrah pilgrimages**.

Timeline of India-Saudi Arabia Relations



SAUDI ARABIA



- **Shared interests at multilateral cooperations:** Both countries discuss regional and international issues of mutual interest including their cooperation at platforms like UN, G20 and GCC.
- **Cooperation in dealing with terrorism:** The Saudi government has regularly helped India to apprehend key terror suspects. In 2012, Saudi Arabia helped India arrest 2008 Mumbai attacks suspect.
- **Increasing Convergence in Defence and Security:** Growing self-sufficiency through indigenisation has prompted both sides to have closer security and defence related contacts, such as sharing of information, military exercises and military training, etc.

Recent developments in relationship

- **Defence and Security:**
 - **First-ever bilateral naval exercise “AL MOHED AL HINDI”** was held in 2021.
 - Both countries aim to establish a **‘Comprehensive Security Dialogue’** at the level of National Security Advisors and set up a Joint Working Group on Counter-Terrorism.
- **Culture:**
 - On International Yoga Day 2021, an **MoU on Yoga Cooperation** was signed for the establishment of formal Yoga standards and courses. **(first time by any country in the Gulf region)**
 - The **Haj Quota was increased** by 24,975 in 2019, enabling 2, 00,000 Indians to perform Hajj in 2019.
- **Diaspora: Integration of India’s e-Migrate system with the Kingdom’s e-Thawtheeq system** to streamline the migration process for workers.

Challenges in the relationship

- **Regional Instability:** The complex and multidimensional politics of the Middle East region involving the Saudi Arabia-Iran rivalry, US-Iran hostility and the Palestine issue make it difficult for India to balance relations for ex- with Iran.
- **Inordinate Delays in Saudi Investments in India:** Aramco’s plans to purchase a 20-percent stake in Reliance Industries was called off and its involvement in the Ratnagiri integrated refinery and petrochemicals complex project was stalled.
- **Diaspora Issues:** Directives issued by Saudi government for promoting ‘Saudization’ policy to provide more jobs to its citizens is likely to affect Indian expatriates.
 - Also, the **‘family tax’ has further caused added financial burden** as it requires an employed expatriate to pay a fee of 100 riyals (Rs 1,700 approx) per dependent each month.
- **Issues related to crude oil:** OPEC countries where Saudi Arabia is a de facto leader charge **Asian Premium** (extra charge) from Asian countries when selling oil in comparison to western countries.
- **Influence of Pakistan:** Pakistan maintains close military ties with Saudi Arabia, providing extensive support, arms and training for the Saudi armed forces.

Significance of India for Saudi Arabia

- India is a **major exporter of labour** to Saudi Arabia which contributes to the development of Saudi Arabia.
- India is Saudi Arabia’s **second-largest trade partner** and Indian businesses are vital for joint ventures and large scale investments.
- India is a **viable destination for medical tourism, education and tourism.**
- Saudi Arabia’s quest towards modernisation path and domestic policy under **‘Vision 2030’ has made India a potential partner** due to its market potential, demographic structure, infrastructure, defence capabilities, soft power capabilities etc.
- Also, **India’s development programmes** such as Skill India, Digital India, Smart Cities, and Infrastructure development are **potential initiatives to learn for Saudi Arabia.**

Way ahead for strengthening the relations

- **Enhancing Cultural engagement:** Cultural exchanges and interaction should continue to be the focus area of strengthening the bilateral relations.
- **Balancing trade relations:** India should focus more

Emerging Concept
INDO-ABRAHAMIC ALLIANCE

→ Growing convergence of strategic interests between



→ Leading to the emergence of a new geostrategic coalition between them.

→ Can reshape the region's geopolitics and geoeconomics by filling the gap left by the United States in the Middle East. ★

upon **promoting exports in various sectors to maintain the trade balance with the kingdom** while building healthy trade relations.

- **Addressing diaspora disputes:** Saudi Arabia may revisit the existing policies that are likely to impact the Indian Diaspora.
- **Collaboration in climate change mitigation:** Both countries can synergise their efforts by **increasing cooperation in the fields of renewable energy and clean energy technologies.**
 - As India, Saudi Arabia is also willingness to play a leading role through the Saudi Green Initiative and the Middle East Green Initiative.
- **Exploring other areas of cooperation such as:**
 - Health, information technology, space science and other frontier technologies.
 - Enhancing maritime security, technical cooperation on cyber space; promote reformed multilateralism, global governance etc.
- **Ensuring regional peace and stability:** The alignment of Saudi Arabia and India under the Indo-Abrahamic framework is critical to the development of a West Asian system that ensures long-term peace and stability.

Conclusion

India-Saudi strategic collaboration holds the promise of shared growth, prosperity, stability, security and development at a time when the world is at crossroads.

2.2. INDIA-BANGLADESH RELATIONS

Why in News?

On Bangladeshi PM’s recent visit, India and Bangladesh **announced several initiatives** to further cooperation between two nations.

Key decisions/initiatives announced

| | |
|--|--|
| Comprehensive Economic Partnership Agreement (CEPA) | <ul style="list-style-type: none"> • Both sides will soon commence negotiations on a CEPA. <ul style="list-style-type: none"> ○ CEPA is a bilateral agreement that covers trade in goods and services, investment, competition and intellectual property rights (IPRs). |
| Water sharing | <ul style="list-style-type: none"> • Signed MoU on sharing of waters of Kushiyara river, first such pact since signing of Ganga water treaty in 1996. <ul style="list-style-type: none"> ○ Pact will benefit people residing in southern Assam and Sylhet division of Bangladesh. ○ Kushiyara forms on India-Bangladesh border as a branch of Barak River, when Barak separates into Kushiyara and Surma. |
| Connectivity projects | <ul style="list-style-type: none"> • Inauguration of Rupsha bridge, a key part of Khulna-Mongla Port rail project. • Khulna Darshana railway link project upgrading existing infrastructure from Gede-Darshana (India) to Khulna (Bangladesh). • Parbatipur -Kaunia railway line will connect to existing border rail at Birol (Bangladesh)-Radhikapur (West Bengal). |
| Others | <ul style="list-style-type: none"> • Maitree power plant at Rampal, Khulna unveiled. It is being set-up as Indian Development Assistance under Concessional Financing Scheme (CFS). <ul style="list-style-type: none"> ○ Under CFS, Government of India has been supporting Indian Entities bidding for strategically important infrastructure projects abroad. |

Significance of India-Bangladesh relationship

- **Economic and commercial:** Bangladesh is India’s biggest trade partner in South Asia and fourth largest destination for Indian exports with bilateral trade rising from \$2.4 billion in 2009 to \$10.8 billion in 2020-21.
 - India is Bangladesh’s second biggest trade partner.
 - Bangladesh is the biggest development partner of India today. India has **extended 3 Lines of Credits (LOC) to Bangladesh in the last 8 years amounting to US\$ 8 billion.**
- **Geopolitical significance:** Bangladesh is a natural pillar of Act East policy. It can act as a ‘bridge’ to economic and political linkages with South East Asia and beyond.

- Bangladesh's geo-strategic location in the Bay of Bengal (BoB) **provides the country with a significant strategic maritime vantage point.**

- **Connectivity:** Seamless transport connectivity between India and Bangladesh has the potential to **increase national income by as much as 17 percent in Bangladesh and 8 percent in India**, says a World Bank report.

- Transit agreement with Bangladesh will spur socio-economic development and integration of North-East India.

- ✓ North eastern states are land-locked & have shorter route to sea through Bangladesh.

- **Security:** India sees Bangladesh as the closest partner in **ensuring security in its geographically disadvantaged northeast states.**

- Bangladesh has taken significant steps in dealing with major Indian insurgent organizations and maintained close cooperation with India in terms of **intelligence sharing and security matters.**

- **Balancing China:** Chinese inroads into the neighbourhood have been a cause of worry for India. A neutral Bangladesh would ensure containment of an assertive China in this region, and help in countering its string of pearls policy.

Challenges in relations

- **Trade barriers:** Cost of trading remains very high, mostly associated with

- lack of appropriate trade facilitation as well as logistical difficulties and

- the consequent high lead time that discourages traders.

- **China factor:** China's growing engagement with Bangladesh might challenge India's position in the region and hampers its strategic ambition.

- **River disputes:** India shares 54 trans-boundary rivers with Bangladesh.

- Some of the major disputes include: Teesta River water sharing issue, Tipaimukh Hydro-Electric Power Project on the Barak River, Ganga river dispute etc.

- **Border management:** Indo-Bangladesh border is of porous nature with causes challenges like illegal migration, smuggling, trans-border movement of insurgents, which are serious threats to the security of the country.

- **Rising Radicalization:** Radicalization in Bangladesh is on a rise, and the influence of the radicals is believed to have increased in the country's politics.

- **Spill over of India's Citizenship Amendment Act (CAA) and National Register of Citizens (NRC):** Radical groups in Bangladesh are using these developments to fuel both anti-India sentiments in the country.

Recent initiatives for improving connectivity

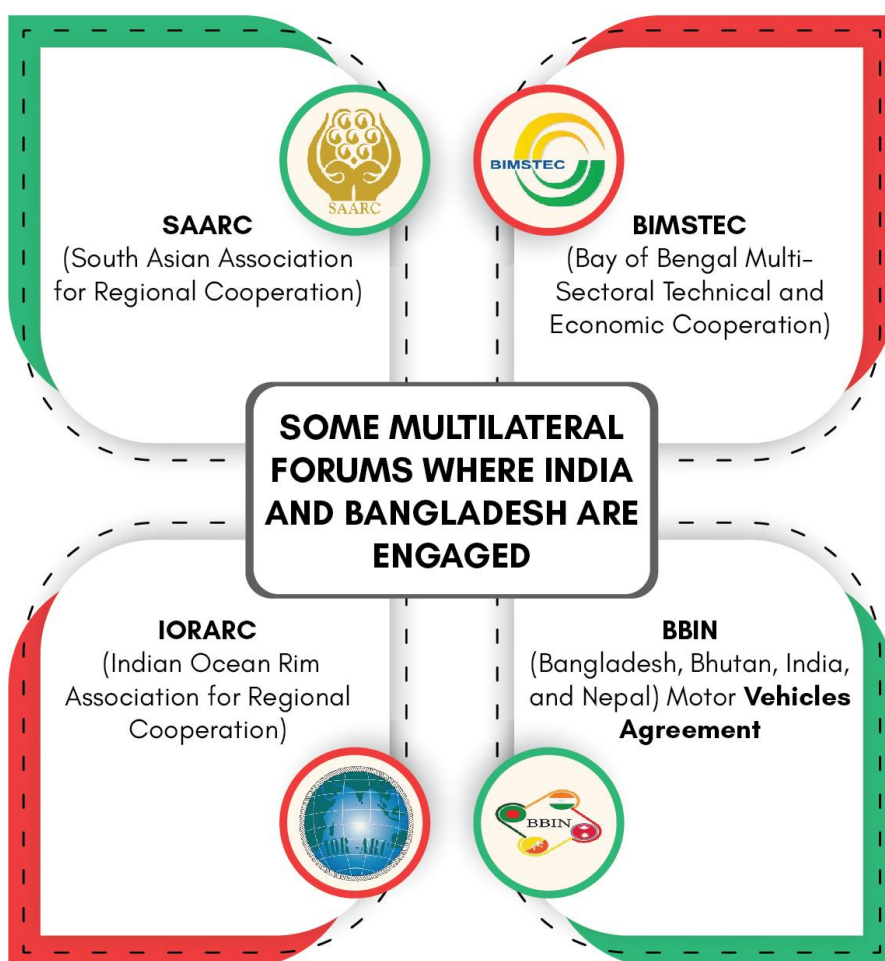
- **Second addendum to the Protocol on Inland Water Transit and Trade (PIWTT)** was signed in May 2020 for including two new India-Bangladesh Protocol Routes (Sonamura-Daudkandi on river Gomti and extension of Dhulia to Godagiri up to Aricha on river Padma), five new ports of call and two extended ports of call.

- **Successful trial run of transshipment of Indian goods** from Kolkata to Agartala via Chattogram.

- **Restored railway link** between Chilahati (Bangladesh) and Haldibari (India).

- **Dhaka-Siliguri-Gangtok-Dhaka and Dhaka-Siliguri-Darjeeling-Dhaka bus service** to enhance people to people contacts.

- **Feni Bridge** (Maitree Setu) connecting LCS Subroom (Tripura) and LCS Ramgarh (Bangladesh) has been jointly inaugurated.



- **Illegal migrants issue:** According to a government reply in Parliament, there are about 20 million illegal immigrants from Bangladesh in India. However, Bangladesh consistently claimed that no illegal Bangladeshi is present in India.
 - Also, the situation is further complicated by influx of Rohingya refugees, originally from Myanmar, into India through Bangladesh.
- **Joint Production of Defence Equipment:** Our defence cooperation has not progressed, though India offered USD 500 mn line of credit.

Way forward

- **A fine balance:** India and Bangladesh have more or less agreed on most issues and this stability must be maintained.
 - Important issues like the Teesta river issue and the Rohingya issue needs to be dealt with carefully by India and India must make sure it doesn't offend Bangladesh on these issues.
- **Include Bangladesh in Quad:** India should explore the possibility of including Bangladesh in Quad plus to contain China's rising belligerence in the Indo-Pacific region.
- **Encouraging people-to-people interactions:** Regular exchanges between younger entrepreneurs and civil society based on areas such as culture, music, sports, films needs to be pursued to counter propaganda and misinformation.
- **Climate change:** Climate change could be used as a strategic area for further cementing a genuine and substantive collaboration.
 - There is a need for strengthened cooperation to curb pollution of different types and to protect marine resources, coral reefs, and biodiversity in the Bay of Bengal.
- **Trade and Investment:** Explore potential areas of investments, like Textiles, Jute products, Leather & Footwear, APIs for Pharmaceuticals, Medical Equipment, Digital Health & Education Services, Agribusiness, Electronics, Renewable Energy, etc.

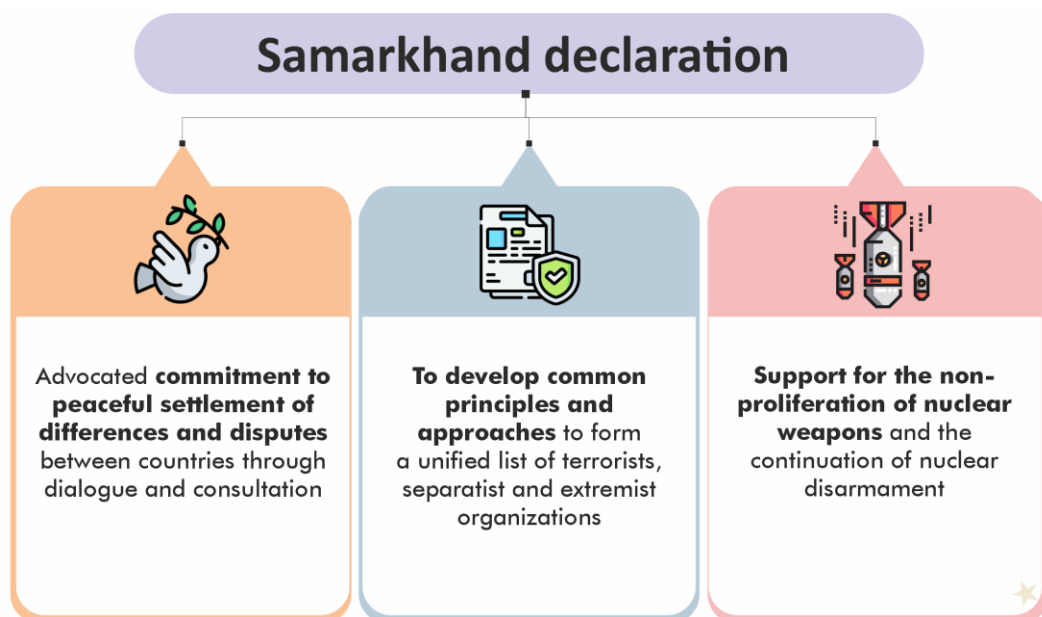
2.3. SHANGHAI COOPERATION ORGANISATION (SCO)

Why in news?

22nd Meeting of the Council of Heads of State of the Shanghai Cooperation Organisation (SCO) took place in Samarkand, Uzbekistan.

Key highlights of the meeting

- **Samarkand declaration** was adopted.
- **SCO Presidency was handed over to India** and India will host the SCO 2023 summit.
- **Varanasi, was declared as the SCO Tourism and Cultural Capital for 2022-2023** to promote the rich heritage and the tourism potential of SCO member states.
- **Iran was accepted as a permanent member of the SCO.**
- **India's take in the Summit:**
 - **Food Security:** India emphasised the initiative to promote millets and address issues related to food security.
 - **Traditional Medicine:** India to take initiative for new SCO working group on traditional medicines.



Major Goals of SCO

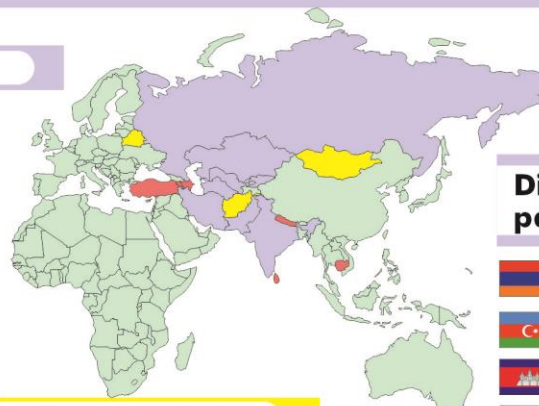


SCO represents



The Shanghai Cooperation Organisation

Member States



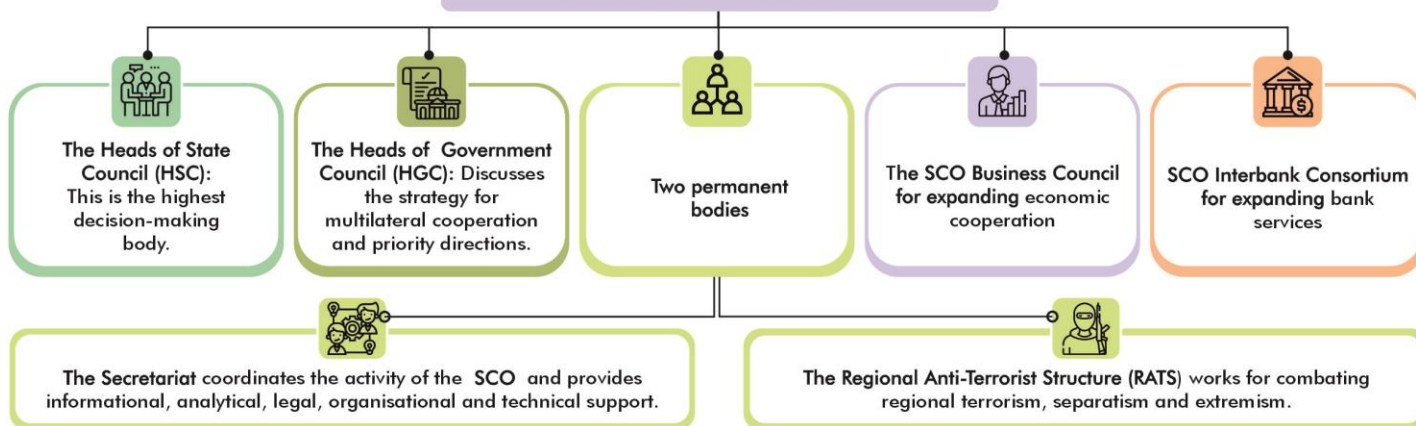
Observer States



Dialogue partners



WORKING STRUCTURE



Relevance of SCO for India

- Push effective action in combating cross border security issues:** The SCO provides India with an opportunity to initiate multilateral and regional initiatives on counter-terrorism and deal with the illicit drug trade.
 - Regional Anti-Terrorist Structure (RATS)** is a permanent body of the SCO and is intended to facilitate coordination and interaction between the SCO member states in the fight against terrorism, extremism and separatism.
- Cross border connectivity:** SCO is a **potential platform to advance India's Connect Central Asia policy** and formulate an **appropriate Eurasian strategy**.
 - India can push for the Chabahar port project and International North-South Transport Corridor (INSTC).
- Leveraging other bilateral relations:** India can also leverage its time-tested bilateral relations with Russia, Iran, and the Central Asian Republics (CARs) to enhance its role within the forum.

India's contributions in SCO

Since joining SCO as a full member in 2017, India has been making positive contributions to the SCO processes, deliberations and its outcomes. This includes-

- Holding a virtual exhibition of shared Buddhist heritage** in SCO member states.
- Translation of 10 books of regional Indian literature** into the official languages of the SCO.
- Hosting the first SCO Start up Forum**, the first SCO MSME forum and the first SCO Young Scientist Conclave in virtual format.
- India after assuming the chairmanship of the executive council of RATS, has been **focusing on promoting practical cooperation in combating the problem of terrorism in our region**.

- It also provides a platform to **manage relations with China**.
- **Stabilising Afghanistan:** SCO member States expressed their support for Afghanistan as an independent State, free of terrorism, war and drugs which will benefit India.
- **Increase India's share in regional trade:** Central Asian Region is rich in **iron-ore, coal, oil, gas, uranium** etc. Frequent meeting of leaders and the India-Central Asia Business Council under the SCO would give fillip to the economic cooperation.
- **Energy Cooperation:** SCO can unblock India's access to Eurasia and provide a fillip to projects like Turkmenistan-Afghanistan-Pakistan-India(TAPI) pipeline.

Challenges for India in the SCO

- **Dominant position of China:** Barring India, the Belt and Road Initiative (BRI) of China has been endorsed by all the members.
 - China's belligerent approach and border disputes with India further complicate India's position in the SCO.
- **India-Pakistan Rivalry and the growing China-Pakistan relations:** China is Pakistan's 'all weather friend' and supports Pakistan to maintain the balance of power in South Asia.
- **Growing strategic proximity between Russia and China:** Amid Ukraine conflict, Russia may continue to seek a closer partnership with China in the face of increasing hostilities between Russia and the West.
- **Weak decision making:** The rich diversity in members' history, backgrounds, language, national interests and forms of government, wealth and culture make the SCO decision making process challenging.
 - SCO has not taken any visible counterterrorism measures against threats emanating from Af-Pak region.
- **Differences over definition of terrorism:** India's definition of terrorism is different to the definition of SCO under RATS.
 - For SCO, terrorism coincides with regime destabilisation; whereas for India it is related to state sponsored cross border terrorism.
- **Security concerns:** The emergence of Taliban forces in Afghanistan, rise in the activities of extreme fundamentalist religious groups, growing influence of terrorist organizations like ISIS, Al-Qaeda Lashkar-e-Taiba are the major and common concerns among SCO member countries.
- **Lack of a unified approach for dealing with Taliban:** The trust deficits and divergences within the SCO has resulted in most member countries using bilateral channels to establish ties with the Taliban for geostrategic, socioeconomic and individual security guarantees .

Way ahead for India

- **Maintaining strategic autonomy:** India should retain its **independent voice against** dominance of other members in the grouping.
 - This is also reflected in India being a part of QUAD and SCO at the same time.
- **Revitalise connectivity projects:** The opening of Chabahar port and entry into Ashgabat agreement should be utilized for a stronger presence in Eurasia.
- **Improving relations with China and Pakistan:** It will promote economic cooperation, trade, energy and regional connectivity.
- **Play a constructive role in CAR:** India could play a role in de-radicalisation of youths in Central Asia and leverage its soft power.
- **Coherent policy for Taliban:** SCO countries must revisit their divergent policies and goals and come together through a joint mechanism to deal with the Taliban.
- **Multilateral cooperation:** The SCO should hold more anti-terrorism drills and also cooperate with the Financial Action Task Force to choke the finances of terror outfits.

SCO vs QUAD: Is India at crossroads?

India being a member of both organisations with apparently conflicting stance, is often seen as India attempting to put its foot in two boats.

- While prima facie, SCO seen as counter-NATO organisation and Quad is seen as a coalition to counter China.
 - The **purpose of the two organisations is majorly securing regional peace and stability**.
- If going by the real purpose, **SCO deals with India's Continental neighbourhood** to ensure peace, security, and stability in the region.
 - **Quad deals with India's Maritime neighbourhood** working towards ensuring a free and open and prosperous Indo-Pacific region.
- India being a member of both organisations is a **reflection of India's strategy of multi alignment or strategic autonomy** in the emerging multipolar world order.
 - This entails **putting India's national interests on priority while engaging with multiple global players**.

2.4. EASTERN ECONOMIC FORUM (EEF)

Why in news?

Prime Minister virtually attended the seventh Eastern Economic Forum (EEF) hosted by Russia in Vladivostok.

More about news

- This year marks the **30th anniversary of the establishment of the Consulate of India in Vladivostok.**
- PM reiterated the **need to end the conflict in Ukraine**, through dialogue and diplomacy and highlighted that India is keen to **strengthen its partnership with Russia on Arctic issues.**

About Eastern Economic Forum (EEF)

- The EEF was established in 2015 to **encourage foreign investments in the Russia's Far East (RFE) region.**
- EEF displays the **economic potential, suitable business conditions and investment opportunities** in the region.
- As of 2022, **almost 2,729 investment projects are being planned** in the region.
- The agreements **focus on infrastructure, transportation projects, mineral excavations, construction, industry and agriculture.**
- The forum aimed at **connecting the Far East with the Asia Pacific region.**
- **About Russia's Far East (RFE) Region:**
 - Far Eastern Federal District (FEFD) is the **easternmost part of Russia and borders the Pacific and the Arctic ocean, and five countries** (China, Japan, Mongolia, the United States and the North Korea).
 - The region encompasses **1/3rd of Russia's territory** and is **rich with natural resources** such as fish, oil, natural gas, wood, diamonds, coal and other minerals.
 - The Russian government has strategically developed the region with **the aim of connecting Russia to the Asian trading routes.**

India's opportunities and Interest in RFE

- **To boost the strategic partnership between India and Russia** by strengthening cooperation in trade, economics and investment.
 - India's '**Act Far-East**' policy has become a key pillar of the 'Special and Privileged Strategic Partnership' of India and Russia.



Major actors and their interests in the RFE region

- **China:** It is the biggest investor in the region (account for 90% of the total investments).
 - It is promoting the Chinese Belt and Road Initiative and the **Polar Sea Route** in the RFE.
 - It is also looking **to develop its Heilongjiang province** which connects with the RFE.
 - **Collaborating with Russia** on connecting the cities of Blagoveshchensk and Heihe, supplying **natural gas, and a rail bridge** connecting the cities of Nizhneleninskoye and Tongjiang.
- **South Korea:** It has invested in shipbuilding projects, manufacturing of electrical equipment, gas-liquefying plants, etc.
- **Japan:** Japan seeks to depend on Russian oil and gas resources after the 2011 meltdown in Fukushima. It also sees **RFE as market for its agro-technologies.**

- **Complementing India's Indo-Pacific Vision:** Act far east policy also helps India to take a more considered stand regarding the South China Sea since the proposed maritime route with Russia goes through it.
- **Employment and investment opportunities for Indians:** Indian professionals like engineers and teachers can help in the region's development.
- **Resource Rich Region:** The region has an abundance of energy and land suitable for agriculture, two resources that India will need in to sustain economic growth.
 - It also offers India **an alternative source of energy supplies** with the fluctuating situation in the Middle East.
- **Connectivity:** The plans to **connect the port of Chennai with Vladivostok**, the largest city in the Russian Far East, would provide both India and Russia **an alternative sea-route with respect to the Suez Canal**.
- **Geopolitical interests:** Involvement in RFE will help India to **counterbalance China's influence** in Russia and in the Indo-pacific region.

Initiatives by India in RFE region

- **NITI Aayog and Ministry for Development of the Russian Far East and Arctic** are working on a plan to develop the Arctic and Russia's Far East between 2020 and 2025.
- **India offered a \$1 billion line of credit** to develop infrastructure in the region.
- **Oil and Natural Gas Corporation** purchased stakes in the Sakhalin-1 project in the region.
- **India, Japan and Russia concluded their first Track II negotiations** about joint Far East projects.

Way ahead for India

- **Harness the soft power potential** to gain leverage in the Far East and enhance its engagement.
- **Labour migration:** The implementation an initiative of **temporary placement of skilled manpower** from India to the Far East (highlighted in the EEF 2019 joint statement) is a crucial step in strengthening India's engagement in the FAR.
- **Explore the possibility of investing in infrastructural projects** like Chahbahar port project in the Far East to gain leverage in commercial benefits.
- **Examining prospects in other areas:** Timber, tourism, healthcare and pharmaceuticals hold potential for future cooperation.
- **Balancing in the Indo-pacific:** Russian opposition to the Indo-Pacific and the Quad as a containment strategy needs to be dispelled through more significant Russian involvement in the Indian Ocean Region through India's Security and Growth for All in the Region (SAGAR) initiative.

Related news

Indo-Pacific Economic Framework (IPEF)

- Recently, India has not **yet agreed to the commitments of the trade pillar of the 14-member IPEF**.
 - The framework is structured around 4 pillars relating to **trade, supply chains, clean economy, and fair economy**.
 - India has agreed to the remaining 3 pillars (supply chains, clean economy, and fair economy).
- IPEF seeks to **strengthen economic partnership among participating countries** with the objective of enhancing resilience, sustainability, inclusiveness, economic growth, fairness and competitiveness in the region.
- **14 members of the IPEF:** Australia, Brunei, Fiji, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, Vietnam and the US.
- The U.S.-led IPEF and the EEF are **incomparable based on its geographic coverage and the partnership** with the host-countries.
 - India has vested interests in both the forums and has **worked towards balancing its involvement**.
 - India perceives the US-led IPEF as a vital platform to **strengthen its presence in the Indo-Pacific region**.
 - IPEF presents an ideal opportunity for India to act in the region, **without being part of the China-led RCEP**.

2.5. REGIONAL COOPERATION FOR DISASTER RISK MANAGEMENT IN INDO-PACIFIC

Why in news?

Recently, Quad countries signed **Humanitarian Assistance and Disaster Relief (HADR) Agreement**.

More about news

- This partnership was announced by Quad Leaders in Tokyo in May 2022, as part of a shared vision for a free, open, inclusive and resilient Indo-Pacific region.

- The Partnership has been designed to
 - **respond to the vulnerabilities** of the Indo-Pacific region.
 - **serve as a dedicated framework** to coordinate their disaster response operations in the region.
 - **augment their capacity and capability**, interoperability and operational synergy to undertake HADR operations.
 - **promote inclusion** by ensuring that vulnerable sections of society are agents and beneficiaries of humanitarian action.

Vulnerabilities of the Indo-Pacific Region

- The Indo-Pacific region is highly disaster prone accounting for **more than three-quarters of the global number of** tsunamis, earthquakes, floods, landslides, cyclones etc.
 - People in Asia and the Pacific were displaced more than 225 million times due to disasters triggered by natural hazards from 2010 to 2021.
- The **region faces a wide array of challenges** such as higher temperatures, abnormal fluctuations in rainfall, home to small island states and developing littoral countries etc

Significance of regional cooperation in disaster risk management

- **Critical for reducing the risk:** Sharing of data and forecasts on severe weather, monsoons, floods, and tropical cyclones is critical to make risk-informed decisions for disaster risk reduction, which helps save lives, reduce property losses, and minimize economic impact.
- **For better response post disaster:** Through the coordination and sharing of information, expertise, and resources, countries can help one another during the critical 48 hours following a disaster.
- **Crucial for support in recovery phase:** Partnerships and networks in the region can share approaches, tools, technologies, and good practices that can lead to more viable development outcomes.
- **Betterment of diplomatic ties:** In addition to the direct benefits, cooperating HADR operations and response plans can build confidence and improve diplomatic ties in the region.
- **Emerging need:** As climate change is a cross-border issue, making regional cooperation even more important in the present time to better deal with natural hazards.

DID YOU KNOW?

Quad cooperation traces its origin from the 2004 ad hoc Tsunami Core Group which catalyzed international response efforts in the aftermath of the tsunami that devastated many countries in the region.

Other supporting initiatives by QUAD countries

- **NASA-SERVIR** by US to provide satellite and geospatial information to developing countries.
- **Asia-Pacific Climate Change Adaptation Information Platform (AP-Plat)** by Japan.
- **Climate and Oceans Support Program in the Pacific (COSPPac)** by Australia.

DISASTER MANAGEMENT PROCESS: FOUR STAGED EFFORTS

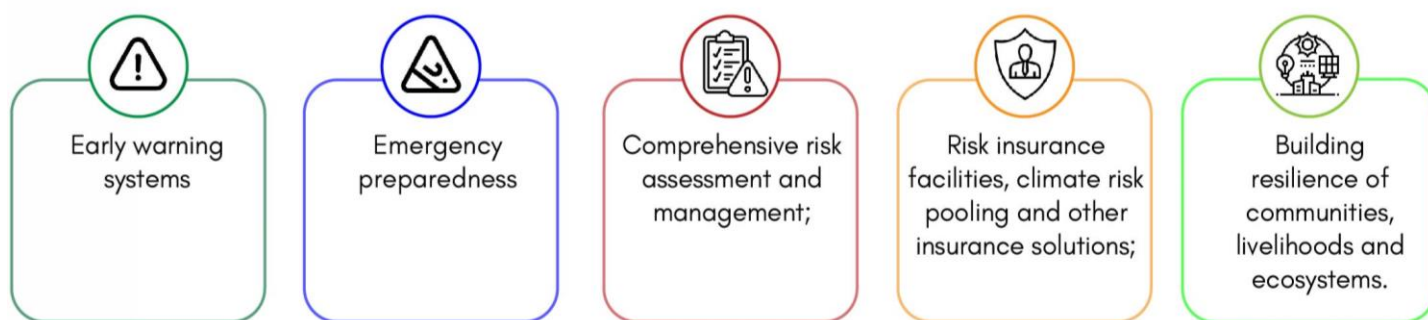


Challenges in effective cooperation in the region

- **Sovereignty issues:** Competitive and complex geopolitical realities leads to an aversion to data sharing brought about by concerns of sovereignty.

- **Capacity constraints:** A lack of resources and training continues to be a challenge in implementing policies to achieve the goals.
 - Consequently, **disaster management remains focused only on preparedness and emergency response.**
- **Pre-dominance of armed forces:** Disaster preparedness and emergency response in South Asia are dominated by the national armed forces as they possess capabilities not available to other agencies.
 - This **hinders regional cooperation**, as each country is wary of inviting neighboring armed forces into their territory.
- **Developmental priorities restrict needed investment:** Investing resources in strengthening the existing disaster management frameworks and agencies, limits the resources available for socioeconomic development of south Asian nations.
- **Presence of China:** China has been scaling up its presence in the Indo-Pacific with implications for both disaster response and maritime security.
 - The extent of China’s role and willingness to provide disaster relief—or countries’ receptiveness to it—is not yet known.

AREAS OF COOPERATION MAY INCLUDE

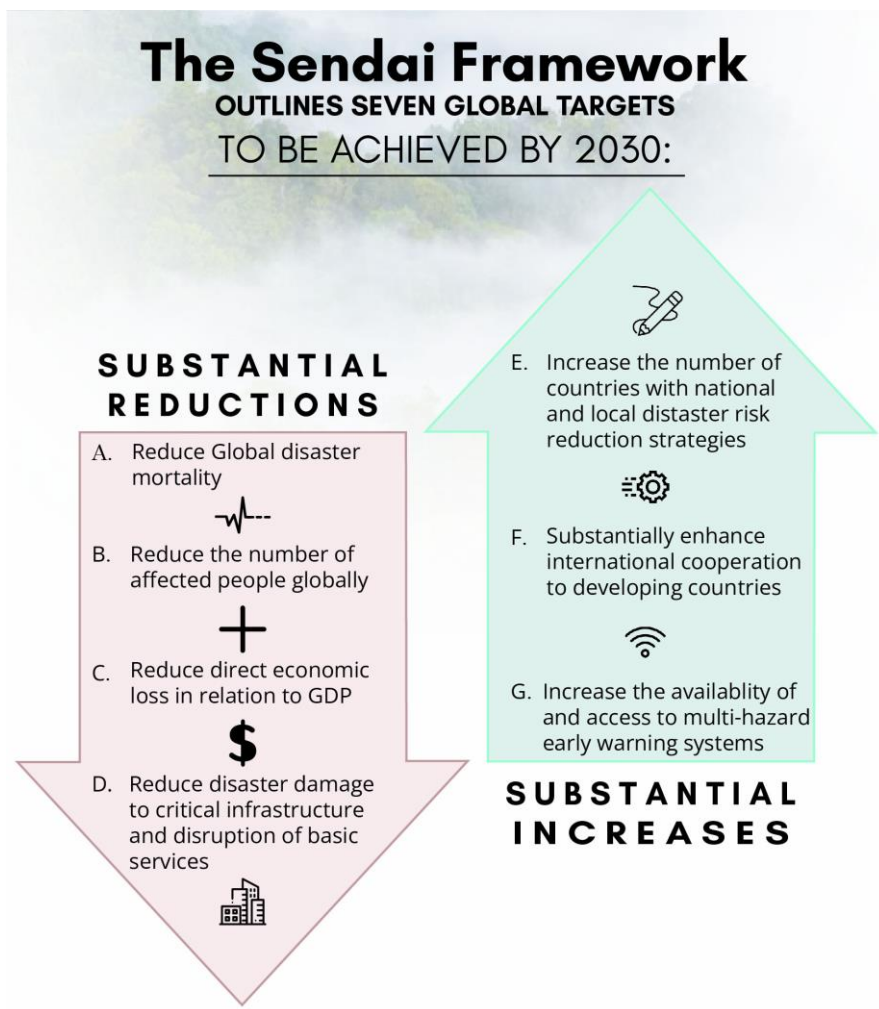


India’s presence for regional cooperation for disaster management

- **Global initiatives**
 - **Sendai Framework for Disaster Risk Reduction 2015–2030** outlines seven clear targets and four priorities for action to prevent new and reduce existing disaster risks.
 - **Disaster Risk Management under IORA**, to facilitate and enhance regional cooperation on preparedness and response strategies to fragile and unpredictable situations.
 - **Asia Pacific Disaster Resilience Network (APDRN)** has been established by ESCAP.
- **India’s leadership role**
 - **Coalition on Disaster Resilient Infrastructure (CDRI):** To conduct country-specific and global activities and serve as a platform for generating and exchanging knowledge to facilitate and encourage investment in disaster-resilient infrastructure systems.
 - India is a **signatory to the Sendai Framework** and is committed to achieve the priorities and the objectives through systematic and institutional efforts.
 - India is taking a leading role in **strengthening regional cooperation among South Asian countries for reducing disasters**. For example- SAARC Agreement on Rapid Response to Natural Disasters, BIMSTEC identifies “environment and disaster management” as a priority sector of cooperation.
 - India has **partnership with various International Agencies** in the field of Disaster Management such as United Nations Office for Disaster Risk Reduction (UNISDR), The World Conference on Disaster Risk Reduction (WCDRR), Global Platform for Disaster Risk Reduction (GPDRR) among others.
 - India had **signed bilateral/ multilateral agreements with the several countries** like Switzerland, Russia, Japan and Tajkistan for cooperation in the field of disaster management through exchange of ideas and expertise.

Way Forward

- **Building Trust:** Countries must balance the challenges of both current perceptions and historical precedents, and the tradeoffs that they can lead to diminished trust.
- **Sharing of critical data:** Establishing a cooperative means of sharing critical data meteorological data, vehicle geolocations or cell phone data before disasters.
- **Integrating technology:** Technology can help automate the process of managing the various disciplines, such as quick processing of large amounts of data and the establishment of a centralized/accessible database.
- **Enhancing climate resilience:** Preparedness strategies, with long-term recovery plans considering climate security and sustainability against future risks such as sea-level rise, marine heatwaves, and increased flux between floods and droughts need to be created.
 - **Nature-based solutions** are needed to promote resilient systems and infrastructure in a response to climate change.
- **Incorporating pandemic learnings:** Increasing input from health experts and combine their consultations with disaster experts to improve the effectiveness of disaster recovery.
- **Realising potential role of private citizens and local groups:** This can be facilitated by creating coordination and response frameworks that will allow ad hoc groups and volunteers to interface with the formal organizations and agencies.
 - An example of such a training program is the **Citizen Emergency Response Training (CERT)** program implemented across various communities in the United States.



Conclusion

The engagement of multiple stakeholders at the regional level to effectively manage natural disasters would not only help in devising a functional system of collective disaster management; in the long run, presents great opportunities for achieving sustainable development in the Indo-Pacific.

2.6. MULTILATERAL FINANCIAL INSTITUTIONS

Why in news?

India's Union Finance Minister highlighted that **multilateral financial institutions need to recalibrate** their functioning to remain relevant in the post-pandemic world.

About Multilateral Financial Institutions (MFIs)

- **Multilateral Financial Institutions** also known as **International Financial Institutions (IFIs)** are financial institutions established by two or more countries **to encourage international cooperation in managing the worldwide financial system.**

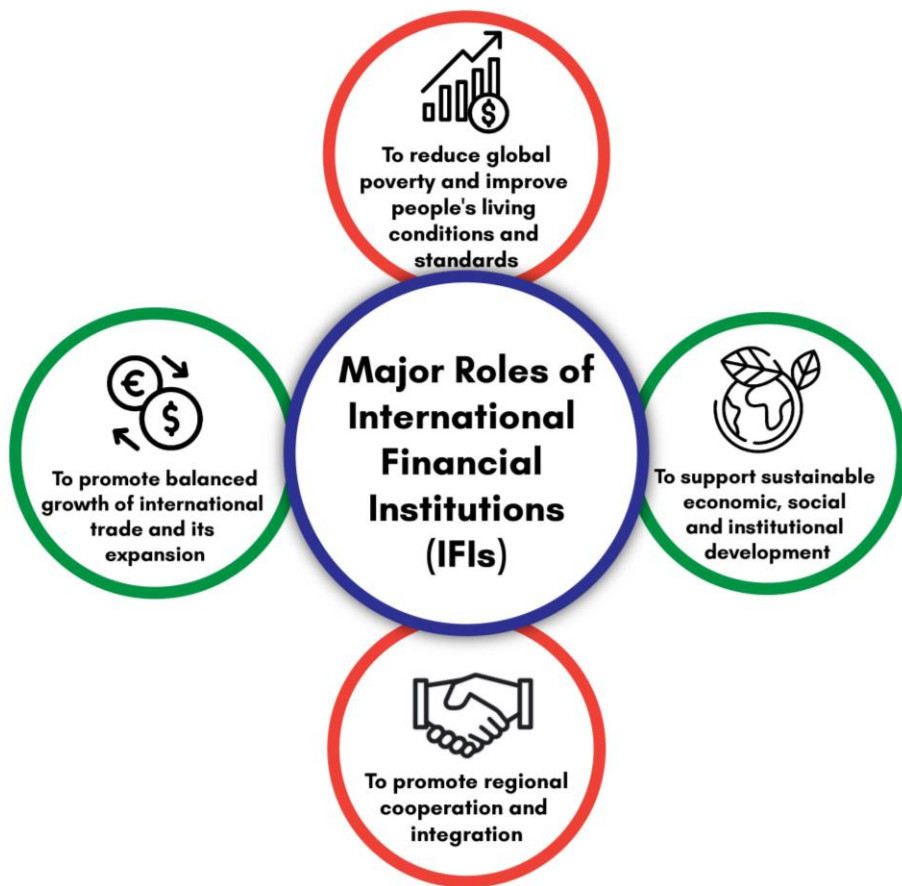
- Most prominent IFIs were **set up after the second world war** and were established to aid the reconstruction of Europe.
- Eminent International Financial institutions include **Bretton Woods institutions** such as IMF and WTO and **Multilateral and Regional Development Banks** such as World Bank, Asian Development Bank, New Development Bank etc.

Relevance of IFIs for developing countries like India

- **Financing of Development Projects:** IFIs help developing countries to fund capital intensive activities like infrastructure, energy, education, and environmental sustainability.
 - **India is the largest borrower from AIIB.**
- **Source of Technical Assistance:** IFIs provide technical and advisory assistance to their borrowers and conduct extensive research on development issues.
 - **IMF policy-based loans** helped Indian economy to move from the **License-Quota-Permit (LQP) regime** to **Liberalisation-Privatisation-Globalisation (LPG)**
- **Overcome disadvantages suffered due to low credit ratings:** IFIs borrow funds from international capital markets to lend it to developing countries.
- **Responding to challenges:** IFIs provide support to developing countries in coordinating responses to regional and global challenges.
 - **For instance,** IFIs approved billions of dollars for COVID-19- related support especially among the low- and middle-income countries.
- **Support to Investors:** IFIs help the investors and business leaders in expansion through new, fast-growing markets.

Concerns related to Multilateral Financial Institutions

- **Skewed nature:** Ownership structure and policy making powers of IFIs are skewed in favour of the Developed Countries due to which their advice is perceived as partial and biased.
- **Imposition of Conditionality:** Some funding agencies have special terms for financing or sourcing of equipment, which infringes sovereignty and are detrimental to interests of domestic industries.
- **Inefficiency in meeting expanded mandates** due to a bureaucratic organisational structure, undercapitalisation, and underperformance in the case of the WBG.
- **For instance,** funds under climate financing mandate as promised by developed nations are yet to flow.
- **Non representative of present realities:** There is a long-pending issue of under-representation of the Emerging Market and Developing Economies (EMDEs) and the dynamic economies in the IMF's quota shareholding.
- **Lack of Transparency and Accountability:** IFIs are mainly driven by self-regulatory frameworks with no external oversight.
- **Nonperforming Dispute Settlement mechanisms:** The biggest structural challenge facing the WTO today is the atrophy of the Appellate Body (AB) of the WTO dispute settlement system, due to the United States blocking consensus on appointments to the AB



- **Growing political influence of China over major multilateral development bank (MDB):** Recently, World Bank's Doing Business' report was discontinued due to allegations of data irregularities, which helped manipulate China's rankings in the publication.

Way Forward to retain relevance of IFIs

- **Phasing out of direct and indirect conditionalities** with no one-size fit all approach from by World Bank and IMF.
- **Introduce changes in internal administrative laws** and subject themselves to **external oversight** for better transparency and accountability.
- **Governance Reforms:** Institutions need to increase representation of developing nations for a greater diversity of perspective and a more balanced approach.
- **Strengthening of new financial institutions** like New Development Bank to diversify options and promote South-South cooperation.
- **Post COVID recovery: IFIs should focus on development of local markets**, building self-reliance for developing countries, resulting in a resilient and sustainable recovery from pandemic.

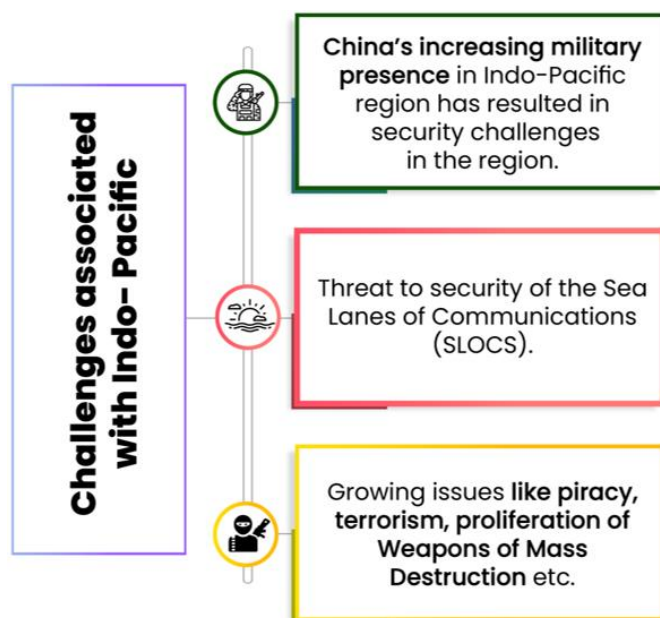
Conclusion

The current health and economic crisis have put unprecedented pressure on the IFIs. Prioritized action supported by mature political leadership at the IFIs is the need of the hour.

2.7. NEWS IN SHORTS

2.7.1. INDO-PACIFIC TRILATERAL DEVELOPMENT COOPERATION FUND

- **Key development in India-France for Indo-Pacific region:**
 - Both countries expressed their interest in **resuming cooperation under the India-France-Australia Trilateral mechanism.**
 - As part of their cooperation in the Indo-Pacific, both countries agreed to **work towards the establishment of an Indo-Pacific Trilateral Development Cooperation Fund**
 - ✓ This fund aims to support **India-based innovators and start-ups** in taking their innovations to third countries, particularly in the Indo-Pacific region.
 - ✓ It will also **explore opportunities to undertake development projects** under the framework of the International Solar Alliance and its STAR-C project.
 - Expansion of bilateral relations to **new areas like the Blue Economy and Ocean Governance.**
- **Significance of Indo- Pacific for India and France**
 - **Trade and Economy** accounts for 62% of world GDP and contributes to 46% of world merchandise.
 - **Enhance Trade and Investment Cooperation** by encouraging greater flow of goods, services, technology between India and other countries.
 - Promote **sustainable development through development of blue economy.**
 - **93% of France exclusive economic zone (EEZ)** is located in Indian and Pacific Oceans.



2.7.2. FINANCIAL INTERMEDIARY FUND (FIF)

- A new FIF for **pandemic prevention, preparedness, and response (PPR)** has been established internationally, with **financial commitments from multiple countries including India.**
- **Hosted by World Bank** and with technical support from WHO, FIF will:
 - Provide **long-term financing to strengthen PPR capabilities** in low- and middle-income countries
 - Address **critical gaps at national, regional, and global levels.**

- FIF will help in **strengthening PPR capacity in areas such as zoonotic disease surveillance, laboratories, emergency communication, critical health workforce capacities etc.**

2.7.3. DEMISE OF FORMER SOVIET PRESIDENT MIKHAIL GORBACHEV

- Mikhail Gorbachev was the leader of the **Soviet Union from 1985 until its collapsed in 1991.**
- He was a young and dynamic soviet leader who **wanted to reform the communist regime along the lines of democratic principles by giving freedom to citizens.**
- **His achievements include**
 - **Policy of glasnost, or openness or freedom of speech, allowing people to criticise the government** in a way which had been previously curtailed.
 - **Program of economic reform called Perestroika or Restructuring** which was necessary as the Soviet economy was suffering from both hidden inflation and supply shortages.
 - **Seen as an architect of reform who created the conditions for the end of the Cold War in 1991** - a time of deep tensions between the Soviet Union and Western nations.
 - **Cultural freedoms** were granted to the press and the artistic community during his time.
 - **Nuclear disarmament** agreement with the then United States President Ronald Reagan which won him the Nobel Peace Prize. The agreement eliminated for the first time an entire class of nuclear weapons.

Mikhail Gorbachev's close relations with India



Offered India some **state-of-the-art military technology** like MiG-23 fighter and MiG-29 interceptor aircraft, T-72 tanks etc.



India was the first "Third World" country to **lease nuclear submarines** from the Soviet Union.



Signed the **Delhi declaration with India in 1986** which focussed on complete nuclear disarmament and echoed the concept of non-violence as practised by Mahatma Gandhi.



In 1988, he was awarded with the **Indira Gandhi Prize for Peace, Disarmament and Development.**



2.7.4. WAR CRIMES

- According to the **Rome Statute of the International Criminal Court (ICC)**, war crimes refers to **serious violations of humanitarian laws during a domestic conflict or a war** between two states.
 - **Genocide and crimes against humanity can happen in peacetime** or during the unilateral aggression of a military towards a group of unarmed people.
- This definition is derived from the **1949 Geneva Conventions** (regulates the conduct of armed conflict and seeks to limit its effects).
- It is based on the idea that **individuals can be held liable for the actions of a state or its military.**



SMART QUIZ

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



3. ECONOMY

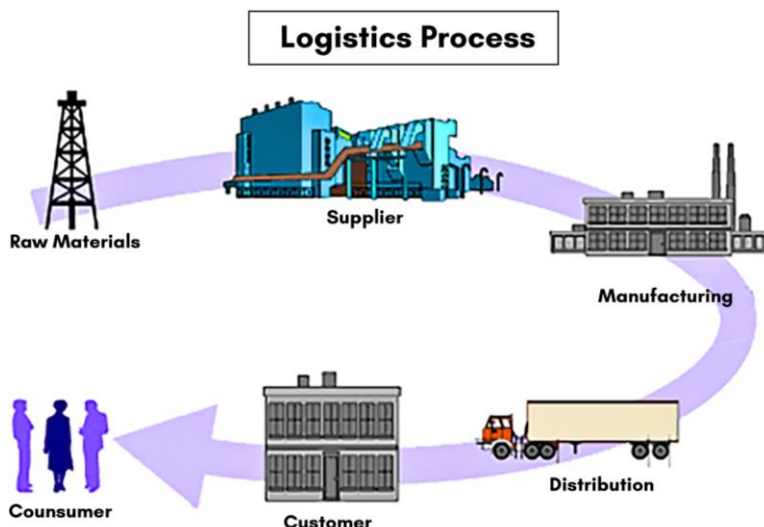
3.1. NATIONAL LOGISTICS POLICY (NLP)

Why in News?

The PM unveiled the **National Logistics Policy (NLP)** to promote **seamless flow of goods** across the country and **improve Indian goods competitiveness** in domestic as well as global markets.

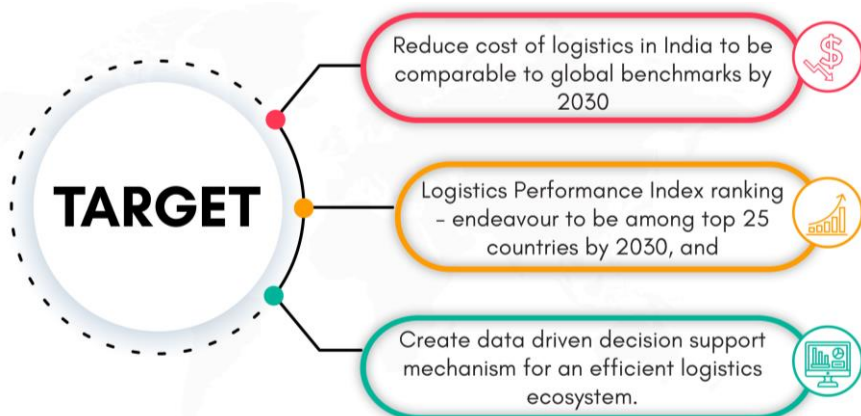
Logistics Ecosystem in India

- Logistics, i.e. the **overall process** of managing how resources are acquired, stored and transported to a final destination, has become an important part of the economy (see image).
- The Indian Logistics sector is estimated to be over **\$250 billion** in 2021 and expected to reach **\$380 billion** by 2025.
- To improve **infrastructure** and **logistics services**, government has taken several initiatives for **systematic infrastructure development for improved efficiency** such as:
 - PM Gati Shakti – National Master Plan** to build world class infrastructure and fill the missing gaps for a holistic and integrated development. It encompasses ongoing initiatives like **Bharatmala Pariyojana, Sagarmala** etc.
 - National Rail Plan** to create a ‘future ready’ Railway system by 2030.
 - The **Logistics Ease Across Different States (LEADS) Index** to assess logistics performance of States and UTs and further improve their logistics performance.
 - Several other reforms** were introduced in the last decade such as: **paperless EXIM trade process** through **e-sanchit**, faceless assessment for customs, **e-way bills, FASTag, GST** etc.; for increasing efficiency and other benefits.



Need for National Logistics Policy (NLP)

- High Logistics Cost:** When compared to global benchmarks, the **cost of logistics** in India is **extremely high - 13-14% of GDP** as compared to other major economies with **8-9% of GDP**.
 - Within it, transportation accounts for most of India’s logistics costs (around 53%), followed by warehousing (12%), and material handling (10%).
- Poor Logistics Performance Ranking:** India ranked **44th** in **2018 Global Logistics Performance Index** (given by World Bank).
- Low Competitiveness:** Due to high logistics cost, **Indian goods lack competitiveness** both in domestic as well as export markets.
- Over Dependence on Roads:** Despite nearly **double cost** of road transport in comparison to **railways** and **waterways**-
 - 64.5%** of goods are transported through roads compared to **25%** globally.
- Low Investments:** High-cost inefficiencies in intra-modal logistics act as a hurdle in attracting large scale investment in India to turn it into a manufacturing powerhouse.



- **Governance Issues:** In India, the logistics sector involves **20 government agencies, 40 Partner Government Agencies, 37 Export promotion Councils, 500 certifications with over 10,000 commodities**, reducing Ease of Doing Business.
- **Disintegrated Network:** India has about **200 shipping agencies, 36 logistics services, 129 inland Container Depots, 168 Container Freight Stations, 50 IT ecosystems, banks and insurance agencies** largely working in silos.

National Logistics Policy (NLP)

- **Vision** - To develop a technologically enabled, integrated, cost-efficient, resilient, sustainable, and trusted logistics ecosystem in the country for accelerated and inclusive growth.
- **Pillars of NLP:** It is based on **four major pillars** as given in the image.

- NLP also includes **Comprehensive Logistics Action Plan (CLAP)** to implement the policy with **eight key action areas:**

- **Integrated Digital Logistics System** to develop a system of unified logistics interface.
 - **Standardization of physical assets and benchmarking service quality standards.**
 - **Logistics Human Resources Development and Capacity Building** to develop an overarching logistics human resource strategy.
 - **State engagement** by supporting development of state/city level logistics plans, set up institutional framework at city/state level, measure and monitor action by states.
 - **EXIM (Export-import) Logistics** to address infrastructure and procedural gaps in connectivity and create efficient and reliable logistics network.
 - **Service Improvement Framework** for improving regulatory interface to enable seamlessness between sectors.
 - **Sectoral Plan for Efficient Logistics** to be developed for each sector.
 - **Facilitation of Development of Logistics Parks.**
- **Implementation:** NLP will be implemented by the **Empowered Group of Secretaries (EGoS)** created under the PM Gati Shakti.

FOUR PILLARS OF NLP



Unified Logistics Interface Platform (ULIP)

ULIP is a **3-tier*** structure to bring **all the digital** services related to transportation sector on a **single portal**, freeing the exporters from a host of very long and cumbersome processes.



Integration of Digital System (IDS)

Under the **IDS, 30 different systems** of **7 departments** are **integrated** including **data** from the **road transport, railways, customs, aviation** and **commerce departments.**



Ease of Logistics (E-Logs)

E-Logs is a **digital platform** for **industry associations** to take up any operational and **performance issue** with the **government directly.**



System Improvement Group (SIG)

SIG will **monitor all logistics** projects regularly through a **group of officers** from ministries concerned.

** - 3-tiers of ULIP are Application Layer, Governance Layer and Presentation Layer.*

Potential challenges to NLP

While promising a holistic transformation in **operational** and **functional aspects** of logistics sector, the successful implementation of NLP faces challenges such as:

- **Cooperation** from all states for timely regulatory approvals falling under States' jurisdiction. E.g., presently, only about half the states have developed their respective logistics policies.
- **Inadequate trained manpower** due to lack of courses and programs on logistics and supply chain management, no proper system for job role identification, competency mapping and curriculum approval.
- **Ensuring Digital connectivity** to compliment the logistics policy.
- **Acceptance of Digital technologies** by transporters due to issues of digital literacy and anti-competitive practices by transport unions.
- **Limited alternatives to first & last mile connectivity** provided by roads.

Way Forward

The recent All India Council for Technical Education (AICTE) initiative of forming a task force to focus on developing and implementing technical and skilling courses on logistics and supply chain management with premier institutions across the country is a good step. Further, work could be done on:

- **Aligning States policy** with NLP and ensuring that all states have a logistics policy in practice.
- **Encouraging Private Sector Investment** in warehousing infrastructure.
- **Engaging Transport Unions** to move towards a new work culture.
- **Creating a Support System** (financial, educational and technological) to **reduce logistics cost**.

3.2. MAKING INDIA A MANUFACTURING HUB

Why in News?

Recently Prime Minister shared India's aim to become a **manufacturing hub** while participating in the **Shanghai Cooperation Organisation (SCO) Summit, 2022**.

Manufacturing Sector of India

- Manufacturing is defined as **the process of production of goods in large quantities by processing the raw materials into more valuable products**. E.g. production of paper from wood, clothes from cotton etc.

- India is the **amongst the top 10 manufacturing nations of the world**, and it is:

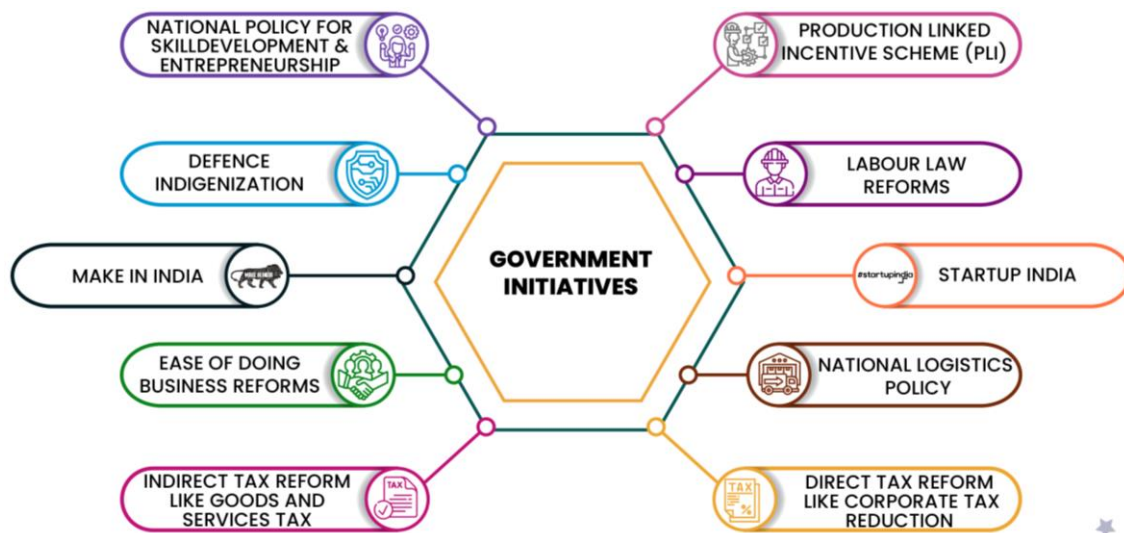
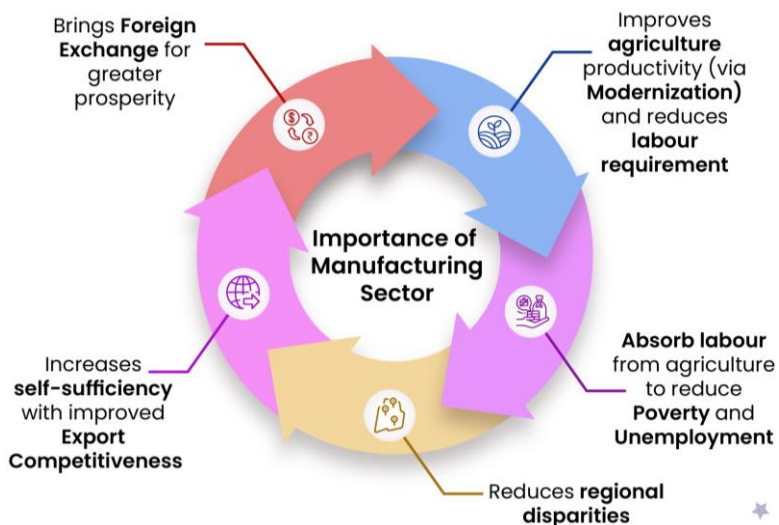
- **Second-largest** mobile phone manufacturer in the world, **third-largest** startup environment etc.

- It employed **6.24 crore** people in **2019-20** (as per the **economic survey reports**) and received **US\$ 58.77 billion** of **FDI** in **2021-22**.

- Also, its performance on international

benchmarks has improved significantly to attract manufacturer's interest. E.g.

- **63rd** rank on **Ease of Doing Business** in **2020** (79 places jump from 2014),
- **2nd most sought after** manufacturing destination of the world in **Global Manufacturing Risk Index** from Cushman & Wakefield's etc.
- ✓ The growing interest can be seen from the example of toy sector (with **imports decreasing by 70% while exports increasing by 61%** since the pandemic).



Realizing its importance, the centre and state government has taken number of **legal, policy, regulatory, financial, and other reforms** since the adoption of **New Economic Policy** in **1991**, also known as **Liberalization, Privatization and Globalization (LPG)**.

Factors Supporting India's rise as Manufacturing Hub

| Factors Supporting India's rise as Manufacturing Hub | |
|--|--|
| Internal Situation | <ul style="list-style-type: none"> • Industry Confidence: India's Manufacturing PMI (Purchasing Managers Index, which measures manufacturing health and industrial output) is above 50 for the 15th straight month. <ul style="list-style-type: none"> ○ It shows the good shape of India's manufacturing, despite global headwinds and rising recession fears elsewhere. • Large workforce: India will add 22% of the new global workforce in next three decades, i.e., between 2020 and 2050 (UN population Fund, 2019). • High Economic Growth: Indian economy is the fastest growing major economy and is expected to become world's 2nd biggest economy by 2047. • Large Domestic Market: The rising incomes and decreasing rural-urban divide supports domestic demand rise. |
| External Circumstances | <ul style="list-style-type: none"> • Supply chain disruptions due to pandemic and other reasons. This has led to Supply Chain Resilience Initiative (SCRI). E.g., SCRI between India, Japan and Australia. • US-China Trade War or change in relationship from 'co-operating rivals' to 'competing rivals' adds to supply chain disruptions, forcing companies to diversify their manufacturing sector (also known as China+1 approach). <ul style="list-style-type: none"> ○ E.g., Apple has moved a significant share of its production to India. • Situation in China: The ageing population and rising labour costs of China has also forced companies to look for more sustainable alternatives. |

Constraints in India's rise as Manufacturing Hub

- Though India **attracted global interest** to take advantage of low production costs and growing manufacturing competitiveness, its **total share in global manufacturing is still limited**.
 - It is just above South Korea which is almost **33 times smaller than India** and has population almost **27 times lesser**.
- In terms of **contribution** of to India's GDP, the manufacturing sector is almost stagnant at **15-17%** since **1991** and Agriculture still remains the **biggest employer** (around 45%).
- A number of internal bottlenecks and external risks drags India's target to **expand exports, localize imports, create internal demand** and **manufacture** for world as given below:

| | |
|-----------------------------|---|
| Internal Bottlenecks | <ul style="list-style-type: none"> • Slow and incomplete Economic Reforms: The pace of reforms or opening of the Indian market is still ongoing and lacks complementary reforms. E.g., Slow labour reforms due to differences between union and state policies. • Legal Issues: It includes legal issues such as restrictive labour laws, lengthy compliance, poor Intellectual Property Rights (IPR) protection, lengthy litigation of disputes, delays in clearance due to environmental concerns, corruption etc. • Low Competitiveness: India's exports suffer on cost and quality due to high logistics cost, high fluctuations in raw material prices due to high inflation, dominance of informal or MSMEs sector, obsolete technology, no assured power supply etc. • Poor Capital Access: Access to formal capital is limited due to the large number of informal enterprises with poor financial records, lack of business plan etc. • Skilled Manpower: In India, only 4.69% workers are formally skilled as compared to 24% in China, 75% in Germany, and 96% in South Korea. • Lack of entrepreneurial economy or risk taking from the private sector due to little supporting ecosystem for high-end tech manufacturing, etc. |
| External Risks | <ul style="list-style-type: none"> • Cyclical Slowdowns in Global Markets leading to decline in fresh investments and demand constraints. The global demand slump due to high inflation and increased recession risk in advanced countries adds to it. • Slow Progress on Trade Agreements with European Union, UK, and others, giving benefits to those with such agreement. E.g., EU-Vietnam Free Trade Agreement. |

- **Increasing Spillover Risk** from geopolitical tensions such as ongoing Russia-Ukraine war and Tensions between USA-China.
- **Uncertain Currency Markets** due to strengthening of dollar against rupee and most other currencies.
- **Increasing Challenges to Globalization and WTO's multilateralism** due to shift of focus towards bilateral trade and investment treaties among nations.

Way Forward

India has the potential to become a **global manufacturing hub** and add more than **US\$ 500 billion** annually to the **global economy** by **2030** through:

- **Policy harmonization between Centre and State government** for effective implementation of government initiatives and bringing required legal reforms to reduce compliance cost.
- **Improved coordination between government and private sector** to create a globally competitive manufacturing sector.
- **Capacity Building** through promotion of **innovation, entrepreneurship, and skilling initiative** to utilize the demographic dividend in a sustainable manner.
- **Ensure energy self-sufficiency** and adopt an **integrated approach to the supply chain** to reduce logistics cost with higher speed, flexibility, and resilience.
- **Regular review of scheme** to track its progress and address supply concerns over availability of raw materials, funds, skilled workforce, payments etc.
- **Increase India's exports** by reducing trade barriers (e.g., through trade agreements) and revitalization of **WTO multilateralism** to provide global market access to manufacturers.
- **Domestic Demand Generation** to create value and resilience in the Indian market to attract global manufacturer's interest.

3.3. DRAFT INDIAN TELECOMMUNICATION BILL, 2022

Why in News?

The **Ministry of Communications** has released the **draft Indian Telecommunication Bill, 2022** for public comments.

About Indian Telecom Sector

- India has the world's **2nd largest** telecommunication ecosystem with **117 crore** telephone subscribers (April 2022), contributing nearly **8% of GDP** with **direct employment generation over 4 million**.
- In the last few decades, it has gone through **rapid transformations** (4G, 5G, Internet of Things etc.), creating new opportunities for India's **socio-economic growth**.
 - This covers sectors such as education, healthcare, FinTech, Agriculture and Livestock, Logistics, Disaster Management, etc.
- But it has an **outdated regulatory framework** with multiple **structural, functional, and operational issues** plaguing its functioning and profitability.

Purpose of Draft Indian Telecommunication Bill

- **To consolidate and amend the existing laws governing the provision**, development, expansion and operation of telecommunication services, telecom networks and infrastructure, in addition to assignment of spectrum.
 - The existing regulatory framework includes **Indian Telegraph Act, 1885, Wireless Telegraphy Act, 1933 and Telegraph Wires (Unlawful Possession) Act, 1950**, i.e., even the latest is over 70 years old.
- It also seeks to amend the **Telecom Regulatory Authority of India Act (TRAI Act)** to dilute the sectoral watchdog's function of being a recommendatory body.
 - It removes the current mandate to seek TRAI views before issuing a new license to a service provider and TRAI's power to request the government to furnish information or documents necessary to make this recommendation.

Key Provisions of the Bill

- **It replaces outdated concepts with new comprehensive and relevant definitions** for telecommunication, telecommunication services and telecommunication networks.

- E.g., the new definition of telecommunication services includes OTT or Over-the-top communication services, internet-based and satellite-based communication services besides in-flight, maritime, broadcasting, internet, and broadband services etc.

- It recognizes exclusive sectoral privilege of the Central Government and provides structure to exercise its privileges through the grant for licenses, registrations, authorization for the possession of wireless equipment, assignment of spectrum, effective spectrum utilization and power to take back spectrum.

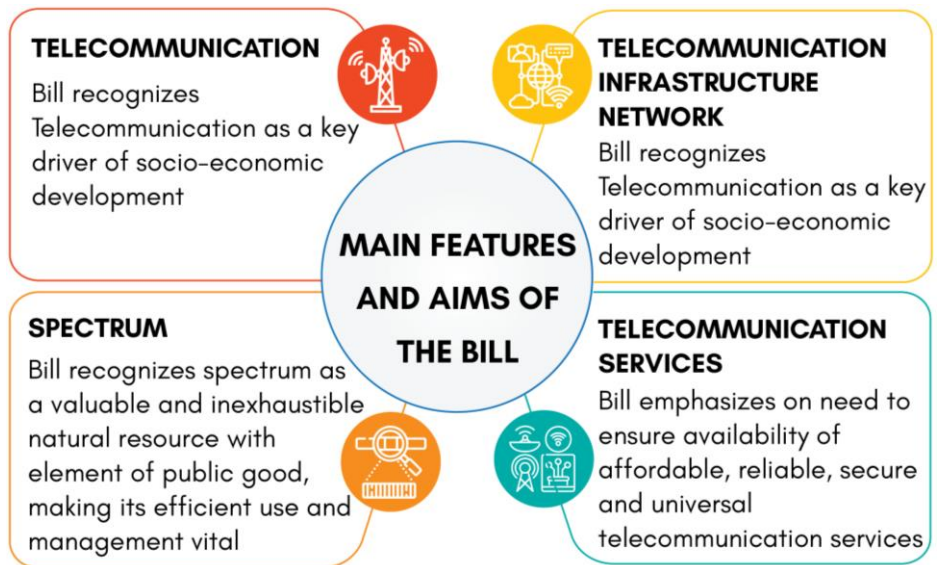
- Also, it empowers the central government to set an Alternate Dispute Resolution Mechanism for disputes.

- Robust Right of Way (RoW) for Telecommunication Infrastructure within the federal structure, to obtain RoW in a uniform, nondiscriminatory manner.
 - Current Right of Way Rules, 2016 suffer from multiple issues (such as denial of access, non-uniformity, lack of centre-state coordination etc.) which limits rapid expansion of telecommunication infrastructure.

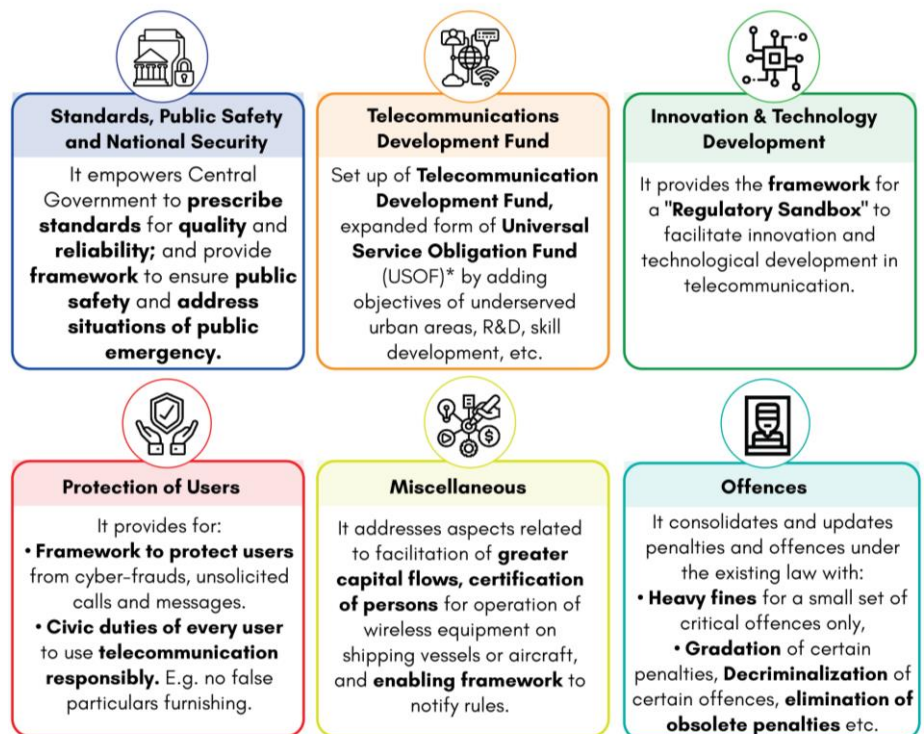
- Simplifies Restructuring Framework, i.e., mergers, demergers, acquisitions, or other forms of restructuring, by complying with Companies Act, 2013 and informing the Department of Telecommunications, as required.
 - In case of default payment by a licensee, registered entity, or assignee, identified by government as extraordinary circumstances, government can allow full or partial relief, write-off or deferment or conversion of the amount into shares, through a special enabling framework.

Potential benefits of the Bill

- Aligns Indian telecommunication standards with international standards and best practices.
- Broadens Telecom Service Providers (TSPs) Definition to provide level playing field with OTT platforms such as WhatsApp, Telegram, Google Meet etc.
- Stops Harassment from Spam Calls and Frauds by communicating identity (name) of the caller to receiver.
- Increased Legal Certainty on spectrum management for its optimum utilization with greater clarity on companies' operation and restructuring.



Other Provisions



*USOF current objective is to provide access to telegraph services (including mobile services, broadband connectivity and ICT infrastructure creation) in rural and remote areas

- **Ease of Doing Business** by easing regulatory regime, decriminalization of certain offences, elimination of obsolete penalties and other measures to boost investments.

Issues associated with the Bill

- **Increased Government control** over internet shutdowns through framework on Internet Shutdown.
 - It raises concerns over availability on an **open and free internet** to its users.
 - Also, it doesn't clearly outline the availability of **safeguards** like **judicial oversight**, rising privacy concerns etc.
- **Moves Away from International Practice on Regulatory Independence** by diluting TRAI powers. It can hurt investors and consumer confidence by increasing interference in regulation of the sector.

Conclusion

The Bill places emphasis on the development of telecom infrastructure while covering new-age services to keep up with the times. Although, there are apprehensions regarding some provisions, the proposed legal framework seeks to be future-ready and provides certainty regarding spectrum management.

3.4. INDIA'S FOREX DYNAMICS

Why in News?

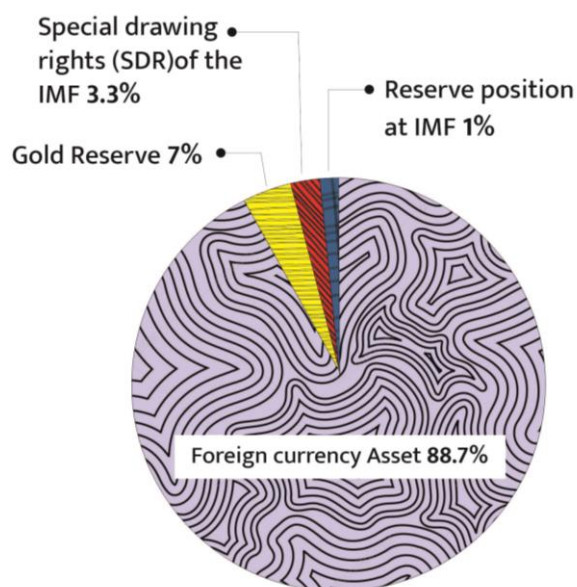
In the face of continued dollar strength, India's Foreign Exchange Reserves declined to over two-year low of \$532.66 billion.

Foreign Exchange Reserves: its Composition and Management

- Foreign Exchange Reserves, also known as **Forex Reserves**, are assets held on reserve by a central bank in foreign currencies.
- Dominated by **Foreign Currency Assets (FCA)**, it can also include **other instruments** like bonds, treasury bills, Gold Reserves, Special Drawing Rights at IMF etc.
 - Some of the common FCA's are **US dollar, Euro, British pound, Japanese Yen** and **Chinese Yuan**.
 - The **US dollar** is most common due to its use in **settlement of all international transactions**.
- The **four components** of India's forex reserves and their share are as given in image.
- As the Central Bank of India, India's forex reserves are managed by the **RBI** under:
 - **Reserve Bank of India Act, 1934** and
 - **Foreign Exchange Management Act, 1999**

Need of Forex Reserves and India's Forex Trends

- Vital for **International trade and commerce**, forex reserves help in:
 - **Supporting and maintaining confidence** in the **exchange rate** and **monetary policies** including interventions to support national currency.
 - **Handling external market risks** by absorbing economic shocks from external market crisis.
 - **Gain investors' confidence** to meet external obligations through Forex against any sudden disruption in foreign capital flows (liquidity crisis).
 - **Assist the government** in meeting its foreign exchange needs and external debt obligations.
 - Maintain a **reserve to withstand** domestic financial system shocks or any other national disaster/emergency.
- Before the current decline, India's forex reserves **almost doubled** in the last 7 years.
- In terms of **import coverage**, today, it has fallen to **8-9 months** from **peak coverage of a year** of India's import.



INDIA'S FOREX RESERVES ITEMS

FOREX RESERVES



Reasons behind Forex Reserves Fall

- **Decline in Foreign Currency Assets (FCA):** According to RBI, 67% of the slump in forex reserves is because of decline in relative value of non-dollar to dollar-based assets and US bonds.
 - For instance, the **Dollar Index**, which gauges **US Dollar (Greenback)** strength against a basket of six currencies, advanced 0.67 per cent to 113.94. The Euro and Yen have fallen to two-decade low against the US dollar.
- **RBI Forex Interventions:** RBI has intervened in the foreign exchange market to **curb excessive volatility of Indian rupee (INR)**, i.e., sales or purchases of dollars to **smoothen** the INR fall, helping to avoid any market turmoil.
- **High Capital Outflow:** Due to a series of rate hikes by Central Banks to curb inflation, especially by the US Federal Reserve, emerging markets like India are facing higher capital flight to safe havens.
- **Weak Global Outlook:** The escalation of geopolitical risks since the Russia-Ukraine war and subsequent commodity price rise, the investors risk appetite has declined.
 - E.g. the rise in oil prices has a significant impact on India's current account deficit as it imports around 85% of its crude-oil demand.
- **Lag from RBI:** In comparison to others, RBI has lagged in interest rate hikes. E.g. against a 300 basis points rise from the U.S. Federal Reserve since March, RBI has increased the repo rate by just 190 basis points; increasing the outflow of Foreign Portfolio Investments (FPIs).

Potential Impact of Falling Forex Reserves

- **Rupee Depreciation:** Through **capital controls** or RBI's intervention has helped in reducing the trade volatility in INR, still it has depreciated by almost 10% to touch all-time lows against US Dollar.
- **Risk of Rating Downgrade:** The **sustained currency reserves decline** could lead to downward pressure on Sovereign Credit Ratings.
- **Reduced Capital Inflow:** Already low on account of global slowdown, the **investors' confidence** may further **reduce** due to increased external vulnerabilities and reduced ability to withstand them due to **rise in current account deficit (CAD) and fall in reserves**.
- **Increased Vulnerability to Economic Risks:** The debt on Indian companies with high exposure to foreign currency loans will increase. Unless having earnings in dollars to compensate, it can hurt the companies as well as the Indian economy. The decline in forex reserves limits ability to face such vulnerabilities.
- **Limits India's ability to help its neighbors:** The reduced forex reserves reduce India's ability to open currency swap lines for others, especially our neighbors facing tough times. E.g., Sri Lanka

Winners and Losers of Rupee Depreciation

- Generally, the **currency depreciation** impact is **positive on net exporters** and **negative on net importers**.
 - But it depends on **factors** such as **export markets and relative currency decline** against dollar if export is to other countries like UK or China.
- It **hurts companies with foreign loans in dollars** while it may benefit those having foreign loans in other currencies if rupee fall is less than the other currency.
- In terms of sectors, provided the demand stays, the clear winners from India will be- **Information Technology, Tea and Garments** among others.
- The sectors stand to lose includes **Oil and Gas, Consumer Electronics, Renewable Energy, FMCG and Aviation** etc.
- Impact on sectors such as **Pharmaceuticals** and **Automobile** will depend on respective countries of export and import dependence.

Way Forward

With **inflation** expected to **remain high** in the **near-term future**, the **INR** and the **forex reserves** are also likely to remain weak. The rising probability of a global recession and India's Current Account Deficit (CAD) warrants:

- **Increase in resilience** of the Indian economy through **fiscal discipline** in **near-term future**.
- **Building Solid Foundations** through **export competitiveness** for **long-term growth**.
- Maintaining **overall stability** and ensuring a **healthy coffer of forex reserves**.

3.5. STRENGTHENING STATE FINANCES

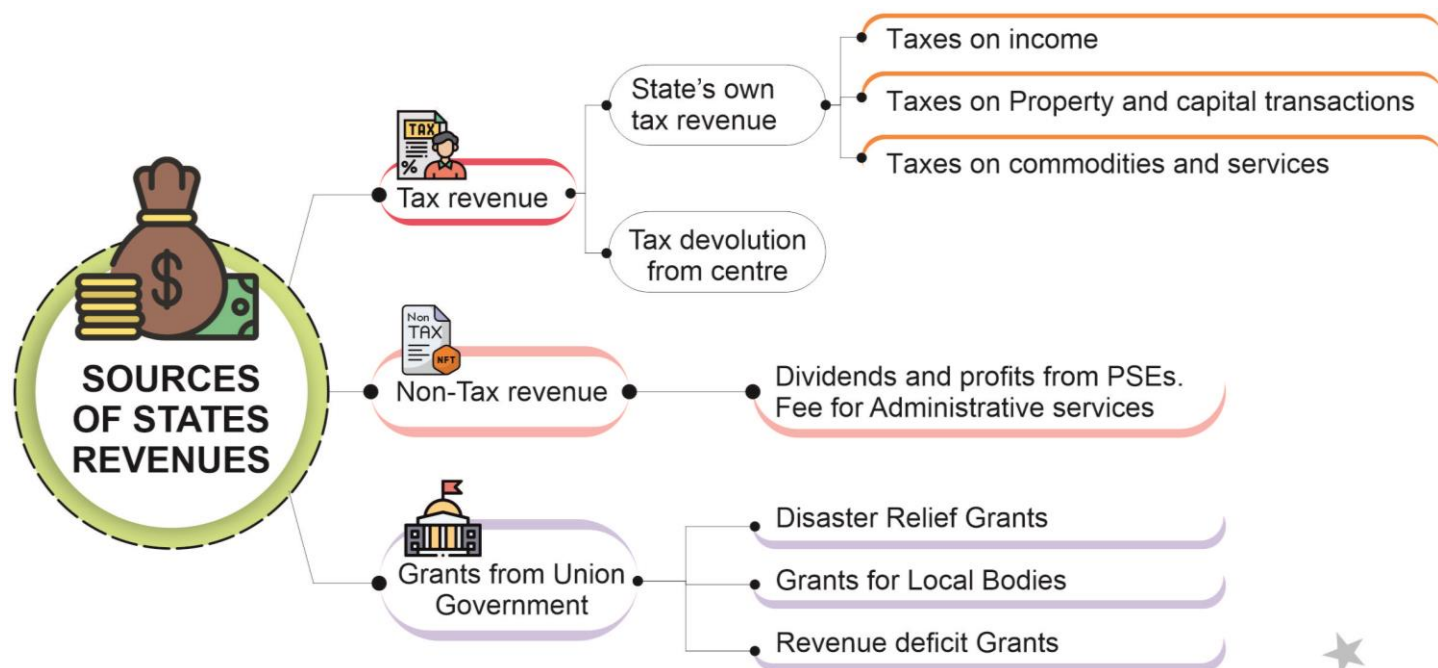
Why in News?

Recently, the Central government raised alarm on the mounting debt burden and the deteriorating fiscal situation in some States due to excessive doling out of freebies.

India's Fiscal Federalism and State Finances

The **Constitution of India** follows **Fiscal Federalism**. Based on it, it follows certain principles to ensure stability such as:

- **Fiscal Equivalency**, i.e. separation of jurisdiction for each public service. The **seventh schedule** allocates areas of responsibility under **Union, State** and **Concurrent List**.
 - E.g., **List II - State List** includes areas such as **agriculture, power, health, social welfare** etc. with financing provisions by empowering them with specific resource mobilization (taxation) powers.
- **Principle of Subsidiarity**, i.e., functions and autonomy should be allotted at the lowest possible level of government. It enhances **revenue generation** and **spending efficiency**. E.g.
 - **73rd** and **74th** amendment which allocated **specific functions** to **Panchayati Raj Institutions (PRIs)** and **Urban Local Bodies (ULBs)** under **11th** and **12th** Schedule.
- Further, **Part XII** of the constitution (**Article 268-293**) covers in detail the provisions of **Centre-State Financial Relations** through:
 - **Distribution of tax revenue**,
 - **Grants-in-Aid**, i.e. **Statutory Grants (Article 275)** and **Discretionary Grants (Article 282)**,
 - **Net divisible pool** distribution based on the **Finance Commission** recommendations (**Article 280**) etc.; leaving states with different sources of revenue as given in **image**.



What are the issues arising in State Finance and their potential impact?

Vital for **sound sub-national fiscal health**, number of states in India is facing challenges of **deteriorating fiscal situation** and **mounting debt burden** due to issues in revenue collection and expenditures such as:

- **Declining Own Revenues** due to slow pace of tax revenue growth. E.g. the share of states' own revenue has declined from **69%** in **1955-56** to below **38%** in **2019-20**.
 - The **loss of autonomy** on tax rates under the **Goods and Services Tax (GST) regime** and negative impact of Covid-19 pandemic has further impacted it.
- **Problems in State-level Expenditure Patterns** due to high share of **committed expenditure (leaving limited fiscal room)** for socio-economic development and increasing expenditure on **populist schemes**. E.g.
 - Increasing farm loan waiver, free electricity schemes etc. which increases non- developmental expenditure and is detrimental in long-term for State Finances.
- **Shrinking of Net Divisible Pool** due to increased cesses and surcharges in Centre's gross tax revenues. Kept outside the divisible pool, they have increased from **9.43%** in 2012 to **15.7%** in 2020.

- **Conception and Implementation of Centrally Sponsored Schemes** which increases burden on states to allocate their share.
- **Spillover of central pay revisions** such as pay commission, dearness allowances etc.
- **Increased Contingent Liabilities** due to growing trend of using State PSUs, Special Purpose Vehicles (SPVs), and other equivalent instruments for **off-budget borrowings**. (The entities do the borrowing and the state governments act as a guarantor.)
 - E.g., the contingent liabilities of **Telangana** have grown by over 150% between FY18 to FY21. Similarly, for **Uttar Pradesh**, it increased by 136% from FY17 to FY21.

Key Term

Contingent liabilities are the guarantees which can become a liability in case of defaults by borrowers for whom the guarantees have been extended.

Important for **macroeconomic stability**, **stressed state finances** increase risks of **sub-national bankruptcy** with other negative impacts (see image).

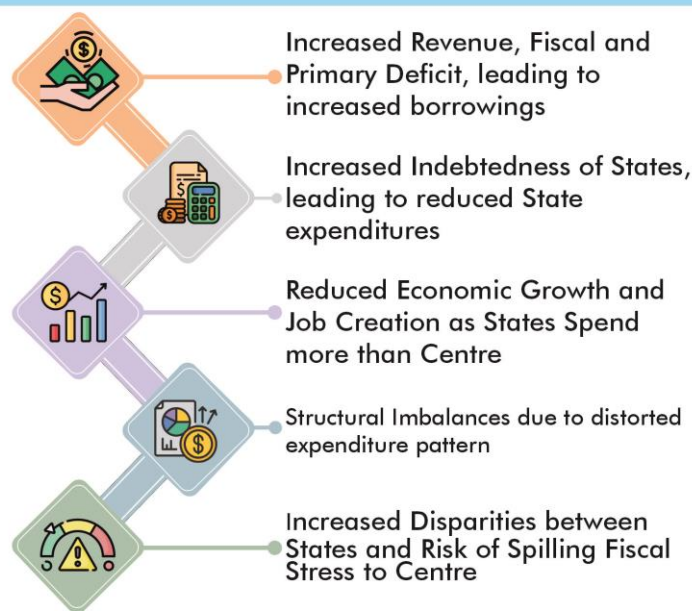
High State Borrowings can also reduce the funds availability for private businesses and **increase disparities** within states, leading to **increased migration** and **frictions** between Centre and States.

What are the initiatives taken to Support State Finance?

In the wake of Covid-19, the Centre as well as RBI has taken a number of initiatives to support State Finance. These steps are now slowly rationalized with new measures to ensure fiscal discipline:

- **Reduced Borrowing Limits:** The Centre has reduced borrowing limits for states from **5% of gross state domestic product (GSDP)** during Covid-19 to **3.5%** for FY 2022-23.
- **Inclusion of Off-Budget Borrowings:** The off-budget borrowings will be considered as borrowings made by the State itself.
- **Lower Ways and Means Advances (WMA):** RBI has lowered WMA limit for States and Union Territories to ₹47,010 crore from ₹51,560 crore.
 - WMA are temporary advances given by the RBI to help the government to overcome any mismatch in receipts and payments.
- **Overdraft (OD) Facility:** The maximum numbers of OD days for State Governments/Union Territories (UTs) are reverted to **36 days in a quarter from 50 days** by RBI.

NEGATIVE IMPACTS OF POOR STATE FINANCES



Steps that can be taken to improve State Finances in long-term

- **Improving fiscal discipline** through expenditure prioritization, debt consolidation and Fiscal Responsibility Legislation (FRL) compliance.
- **Relooking Fiscal Equivalency** (Seventh Schedule) to ensure that the government that is responsible for the provision of a particular good or service can finance it in full as well to **avoid moral hazards**.
- **Cap Excessive Spending and Borrowing at Sectoral Levels** to avoid excessive populism and its negative spillover on other areas. Also, **discuss Freebies in terms of its long-term impact** as well rather than just populism.
- **Further Rationalization of Centrally Sponsored Scheme** or allow more flexibility to states and UTs in their implementation to meet domestic needs.
- **Overall resources and distribution: Raising additional resources** at the sub-national and national levels to increase tax-GDP ratio which is largely constant at 17%. Also, **addressing issues** on GST compensation continuity, shrinking of Net Divisible Pool etc.

- **Participatory Review on funds** required and revenues generated from different items or functions as states tend to underestimate revenues and inflate expenditures in their respective forecasts while Finance Commission tends to have vice-versa analysis.

Related News

Guidelines on Scheme for ‘Special Assistance to States for Capital Investment (SASCI) for 2022-23’ launched

- The scheme launched in 2021-22 provides **50-year interest-free loans for capital investment projects** to states.
- For the 2022-23 Financial Year (FY) a **total financial assistance of Rs 1 lakh crore** would be given to states.
- **Key features**
 - The loan under the scheme would be **over and above the normal borrowing** ceiling allowed to states for the FY 2022-23 and should be spent in the same year.
 - ✓ **Funds not used by a state** within a reasonable time period may be allocated to another state.
 - **7 parts of the scheme:** For capital works (PM Gati Shakti Master Plan will receive priority); PM Gati Shakti related expenditure; PM Gram Sadak Yojana; Incentives for digitisation; Optical Fibre Cable; Urban reforms; Disinvestment and monetisation.
 - **Eligible projects:** New or ongoing projects or for settling pending bills in ongoing capital projects. **States may submit projects of higher value** than the funds allocated, indicating their preference/priority.
 - **Exclusion:** Projects with capital outlay of **less than 5 crore** (2 crore for North East) and **repair and maintenance projects** irrespective of capital outlay are not eligible.
- **Significance of the scheme:** Capital expenditure has a multiplier effect, enhancing the future productive capacity of the economy and results in a higher rate of economic growth.

To know more about **Fiscal Federalism**, please refer to our following **Weekly Focus Document**.

| | | |
|--|--|---|
|  <p>Changing Dynamics of Fiscal Federalism in India</p> | <p>Fiscal imbalances, both vertical and horizontal, are common to federations and India is no exception.</p> <p>This document discusses various dimensions of Indian fiscal federalism, the changing contours of union-state fiscal relations and several existing key concerns that have a major impact on achieving India’s development goals. Can these concerns be resolved? Read more to know what experts suggest.</p> |  |
|--|--|---|

3.6. BANKING SYSTEM LIQUIDITY

Why in News?

After remaining in **surplus mode** since May 2019, the Indian **banking system liquidity** turned into a **deficit mode** in **September 2022**.

About Banking System Liquidity and its Significance

- **Banking System Liquidity** refers to ‘readily available cash that banks need to meet short-term business and financial needs.
- It is understood through **Liquidity Adjustment Facility (LAF)**, the **primary instrument** of the RBI’s operations to **inject or absorb liquidity** into the banking system.
 - On a given day, if the banking system is a net borrower from the RBI under LAF, the system liquidity can be said to be in deficit and if the banking system is a net lender to the RBI, the system liquidity can be said to be in surplus.
- It is an important **prerequisite** for **smooth operation** of banking businesses and an important **determinant of growth, development, and survival of banks**.

- **Adequate liquidity** boosts growth, investment and ensures stability of interest rates and exchange rate.
- The liquidity requirements of banks are based on the **reserve requirements imposed on banks** by RBI, **excess reserves** held by them and **autonomous factors** or RBI balance sheet items which impact banks' liquidity needs but are not under the direct control of RBI.
 - E.g., Banknotes in circulation, government deposits or net foreign assets come under autonomous factors while Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) come under reserve requirements.

Major reasons behind the Banking System Liquidity deficit

- **Disparity between credit growth and deposit growth at banks, i.e.,** higher growth in bank credit against slower deposit growth in the last few months.
- **Hefty outflow of money** due to advance tax payments by companies.
- **Aggressive RBI measures** to stem the fall in Rupee against the US dollar, swallowing rupee from the banking system.
- **Ballooning government cash balances** (estimated around ₹3 trillion).
- **Rise in balance of payments deficit at capital account** as well as at current account level.
- **Rise in discretionary spending by people** due to the festive season among other reasons.

Impact of Banking Liquidity Deficit

- **Increase in Deposit rates or Special Deposit Schemes** from banks to get money,
- **Increased cost of borrowed funds** due to rise in **Money Market Rates**. E.g. Yields on Treasury bills or T-bills spiked recently due to tighter liquidity conditions.
 - T-bills are **short-term debt instruments** issued by the government. They are presently issued in three tenors—91 days, 182 days and 364 days.
- **Potential Repo rate change from RBI** which will increase banks **repo-linked lending rates and the marginal cost of funds-based lending rate (MCLR)**, resulting in higher loan interest rates for consumers.
- **Reduced Demand** which can further lead to **contraction of economic activities**.
- **Increased Difficulties for RBI** to maintain borrowing costs for growth as well as to continue with its monetary tightening cycle.

Way Forward

The current liquidity deficit may be attributable to temporary factors like advance tax flow. But if it is long-term in nature, a skillful management of system liquidity becomes crucial for sustained growth. Along with RBI's open market operations, reducing the government's cash balance can help in stabilizing yields as well as ensure proper liquidity in the system.

3.7. TOKENISATION

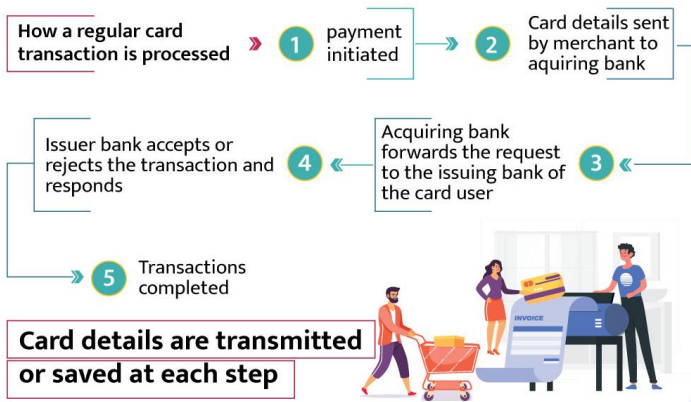
Why in news?

Reserve Bank of India's **card-on-file (CoF) tokenisation norms are effective from 1st October**.

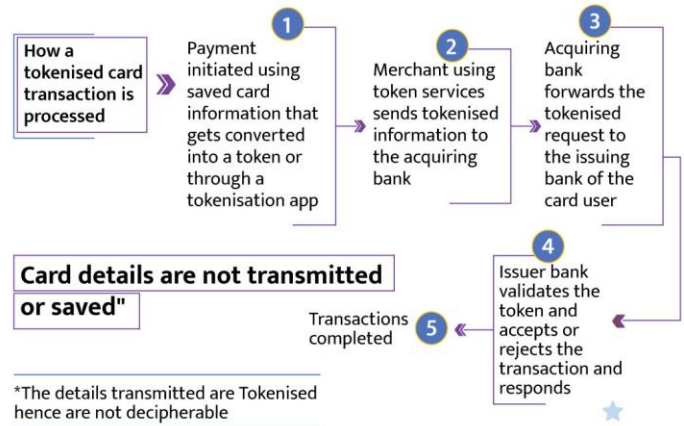
About Card-on-File (CoF) Tokenisation

- Tokenisation is a **process by which card details in a CoF transaction are replaced by a unique code** or token allowing purchases to go through without exposing sensitive details.
 - A **CoF transaction** is one in which a cardholder has authorized a merchant to store his or her Mastercard or Visa payment details, and to bill the stored account.
 - A token is a **unique for a combination of card, token requestor and the device**.
- Under the process of tokenisation, **online players or merchants are not allowed to store card number, CVV and expiry date** for processing online transactions.
 - **Any existing details** that were saved by merchants **will be deleted**.
- Tokenisation and de-tokenisation (conversion of the token back to actual card details) **can be performed only by**
 - the card issuing Bank or
 - Visa / Mastercard / Rupay who are referred as authorised card networks.
- **More than 10 crore tokens have already been generated** covering 60-70% of the Indian cardholders.

HOW IS A TOKENISED TRANSACTION DIFFERENT?



Processing of a Tokenised Transaction



Significance of card tokenisation

- **Payment security:** Tokenisation reduces the chances of fraud as it restricts the storage of sensitive card data, making the payment ecosystem more robust and secure.
- **Fast and easy payments:** Tokenisation speeds up online payment processing and makes it easier for customers to make online transactions.
- **Eliminates the issue of data breach** due to server hacking which substantially reduces the chances of cyber-attacks.
- **Decreases merchant liability** as the merchant no longer has to stay compliant with various regulations related to card storage.

Challenges in implementation

- **Impact on small merchants:** Small merchants who do not possess the necessary resources and know-how would need to depend on payment aggregators for their integration in the new mandate.
- **Lack of clarity over integration with various backend systems** and network/service providers involved for a seamless transaction experience.
- **Lack of awareness** in customers about the process of tokenisation.
- **Inconvenience to the customer:** If merchants do not adhere to the card tokenisation, they will be forced to obtain the card information from the customer each time they use the merchant portal.

Conclusion

The back-end infrastructure for processing payments using tokens **has to be robust to avoid failures in transactions and enable smooth shifts.**

Fact Check

| | | |
|--|---|-------------------------------------|
| | Tokenisation of card is mandatory. | <input type="checkbox"/> |
| | Tokenisation of card is required for offline purchases also. | <input type="checkbox"/> |
| | There will be one token for all online merchants. | <input type="checkbox"/> |
| | Customer can request for tokenisation of any type and number of cards. | <input checked="" type="checkbox"/> |
| | Customers have the option to register / de-register their card for a particular use case, i.e., QR code based, in-app payments, etc. | <input checked="" type="checkbox"/> |
| | A card issuer can refuse tokenisation of a particular card based on risk perception. | <input checked="" type="checkbox"/> |
| | Customers have the option to set and modify per transaction and daily transaction limits for tokenised card transactions. | <input checked="" type="checkbox"/> |
| | Customer can request for tokenisation of card on any number of devices. | <input checked="" type="checkbox"/> |
| | Customer do not have to remember the token number. | <input checked="" type="checkbox"/> |

3.8. HUMAN DEVELOPMENT REPORT

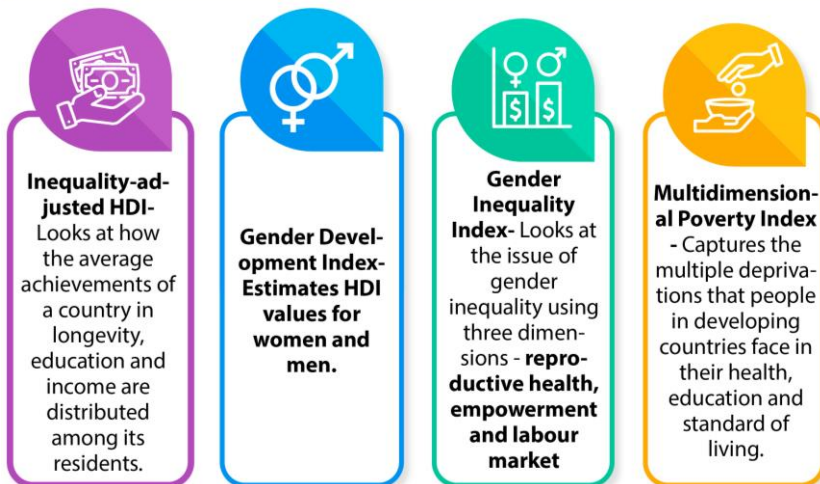
Why in news?

The report for 2021/22 was released with the theme 'Uncertain times, unsettled lives: Shaping our Future in a Transforming World'.

More on news

- Human development is **defined as the process of enlarging people's freedoms and opportunities and improving their well-being.**
 - Human development is about the **real freedom people have to decide who to be, what to do, and how to live.**
- To guide towards and assess the status of this concept, the HDI Report is released **by United Nations Development Programme (UNDP).**
 - It was released for the **first time in the year 1990.**
- It is a measure of achievements in **three key dimensions of human development:**
 - Long and healthy life (Life expectancy),**
 - Access to knowledge (expected and mean years of schooling) and**
 - Decent standard of living (GNI per capita).**

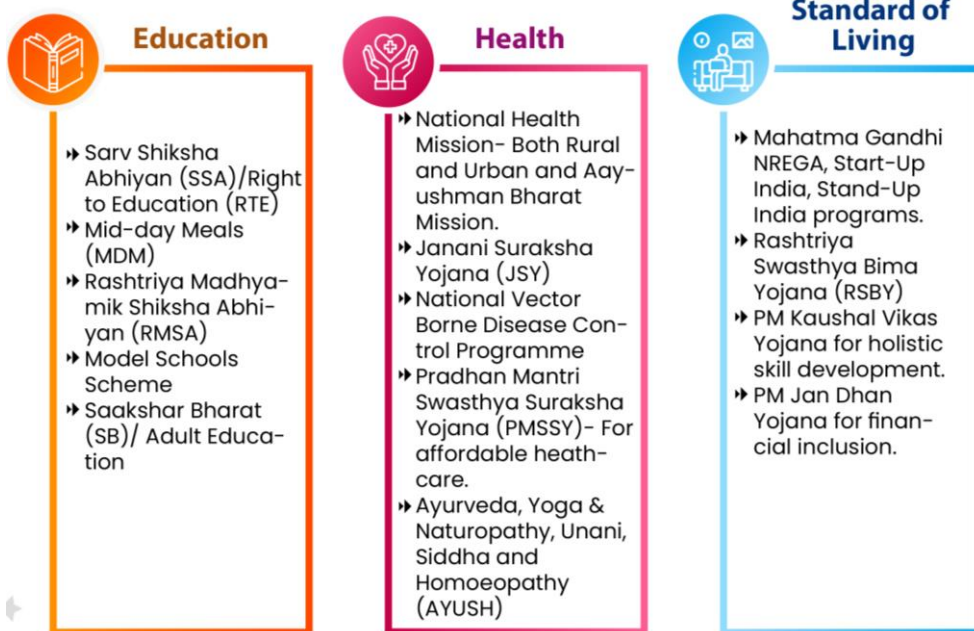
Set of indices under the HDI report



Key Findings of the report

- Decline in global HDI** - For the first time the index declined for two consecutive years in a row (2020 and 2021, reversing five years of progress).
 - Global human development stalled for 1st time in 32 years.
- India is ranked **132 out of 191 countries**, after registering a decline in its score **over two consecutive years for the first time in three decades.**
- Among India's neighboring countries, **Sri Lanka (73, 0.782), China (79), Bangladesh (129) and Bhutan (127) have fared better** than India.
 - However, compared to 2019, the **impact of inequality on human development is lower.**
 - India is bridging the human development gap between men and women faster than the world.
 - ✓ **India's investment in health and education, access to clean water, sanitation and affordable clean energy was lauded by UNDP.**

Government Schemes to improve HDI



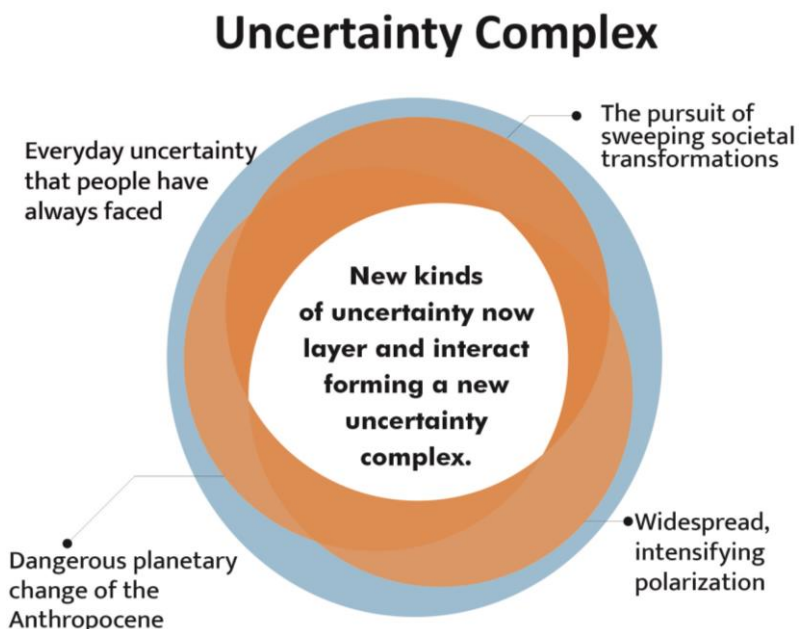
Reasons behind this decline

• Underlying Factors

- **Global:** A combination of the **COVID-19 pandemic, Russia's invasion of Ukraine and climate crises** dragged down the human development score.
 - ✓ Globally, **life expectancy dipped to 71.4 years in 2021** from 72.8 years in 2019.
- **India** India's human development value **fell to 0.633 in 2021-22 from 0.645 in the 2020**, placing the country in **medium human development category**.
 - ✓ **Reason for downfall –**
 - **Life expectancy dropped** to 67.2 years from 69.7 years.
 - India's expected years of schooling stand at **11.9 years, and the mean years of schooling are at 6.7 years.**
 - India's **per capita income in terms of purchasing power parity has gone down by 5 per cent** compared to a 2 per cent increase for the developing countries during 2019 and 2021-22.

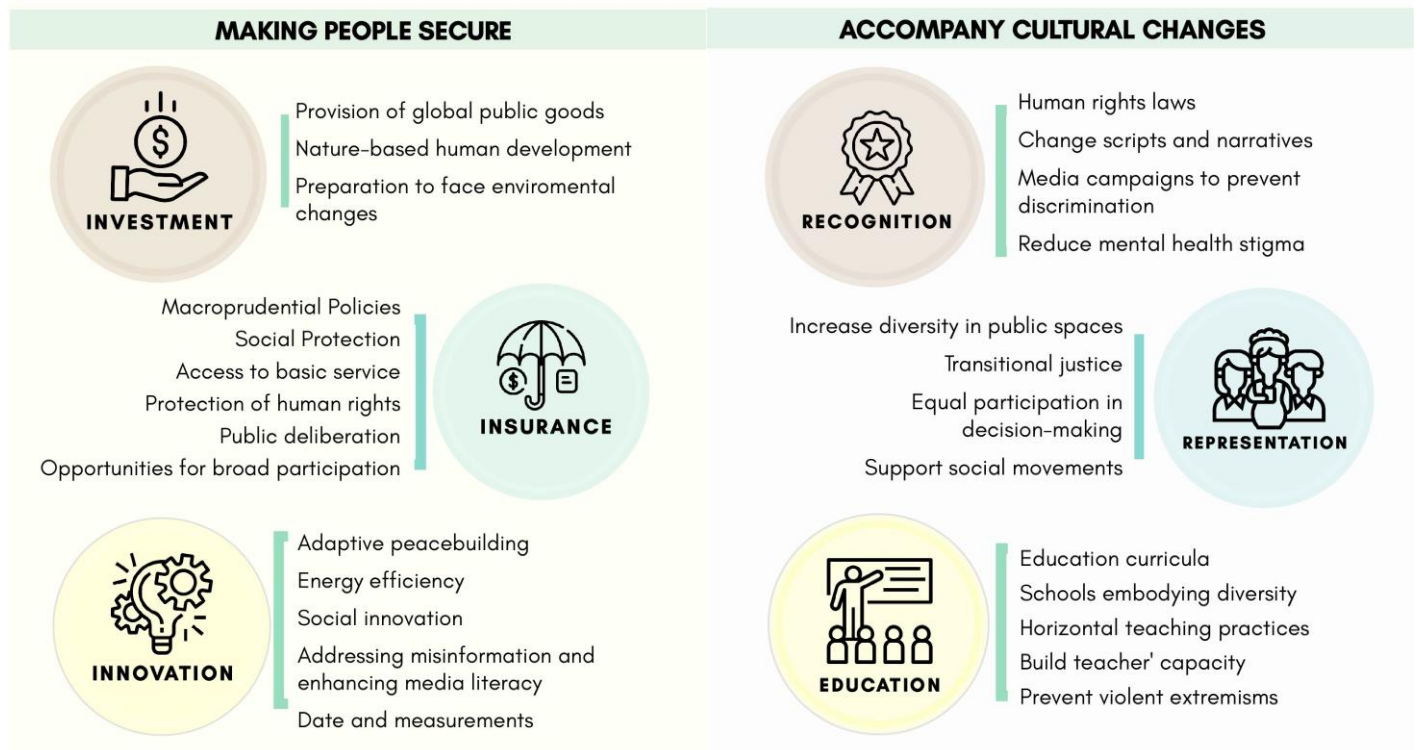
• Dynamic Factors

- **Uncertainty Complex:** The report iterated that **The "New Uncertainty Complex" facing humans in 'Human development' progress.**
 - ✓ Report showed that **six in seven people worldwide were plagued by feelings of insecurity** even before the COVID-19 pandemic captured our psyches.
 - This was the case in even in the richest countries.
- **Causes of uncertainty** which are hindering human development-
 - ✓ **Factor one: the Anthropocene and its inequalities** – It is the age where for the first time in our history the most serious and immediate risks are human-made. Also, there is growing inequality and power imbalances.
 - ✓ **Factor two: Social transformation to ease planetary pressures** – Owing to challenges posed by anthropocene, societies need to transform the ways in which they operate which has led to transitional uncertainty and technology transformation related uncertainty.
 - ✓ **Factor three: Increase in polarization in the backdrop of rising misinformation online and democratic backsliding** has led to another layer of uncertainty- not knowing what to believe.



Way forward

- India has lifted **271 million out of multidimensional poverty**. India has also boosted access to social protection for vulnerable sections of society, **especially during and after the pandemic, with a 9.8 percent increase in the budgetary allocation to the Social Services sector in 2021-22 over 2020-21.**
- For continued progress on HDI, **government should focus on the 3Is**, which will enable people to thrive in the face of uncertainty.
 - India is already a frontrunner in these areas with its push towards **renewable energy, boosting social security for the most vulnerable and driving the world's largest vaccination drive through Co-WIN, supported by UNDP.**



3.9. URBAN EMPLOYMENT GUARANTEE SCHEME (UEGS)

Why in news?

Recently, Rajasthan launched **Indira Gandhi Urban Employment Guarantee Scheme**.

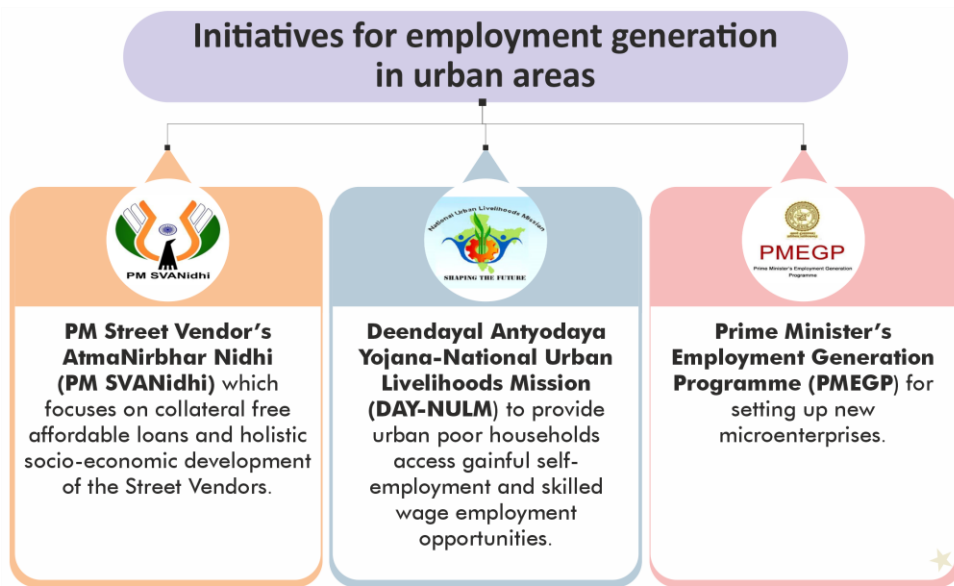
More about News

- This scheme would **provide work for 100 days to the poor and needy families living in the cities**.
 - Members aged between 18 and 60 years in the job card holder families will be eligible.
 - Employment would be in the **segments of environment and water conservation, cleanliness and sanitation, stopping defacement of property, etc.**
- Earlier **Odisha, West Bengal, Himachal Pradesh, Kerala, Jharkhand and Tamil Nadu**, have introduced job schemes in urban areas.

Importance of Urban Job Guarantees

- **Marginalisation of urban poor in policy making:** Most of the central or State government schemes provide relief to only poor people in rural areas.
 - **For example**, even during COVID-19 pandemic the employment scheme named 'Prime Minister Garib Kalyan Rojgar Abhiyaan (PMGKRY)' was launched for migrant workers returning to villages.
- **Resolve low employment in urban areas:** In 2017-18, the labour force participation rate (LFPP) in urban areas was 36.8% compared with 37% in rural areas and this gap widened over the years.
 - In 2020-21, the **LFPR rose to 38.9% per cent in urban areas** compared to 42.7% in rural areas.
- **Tackle Persistent high inflation:** Compared to the rural regions, India's urban centres have a much higher cost of living.
 - Hence, **urban poor are forced to live in conditions characterised** by severe deprivation of basic human needs, including proper shelter, food, and safe drinking water.
- **Improve nature of jobs in urban areas:** Most of the jobs in urban economy are plagued by the prevalence of low-wage, poor quality, informal work.
 - It calls for **secured, and guaranteed sources of livelihood in urban areas**.

- **Secured jobs to women:** In urban areas many women take up jobs in informal sectors, such as domestic work, construction work, and in the beauty and wellness industry, etc.
 - UEGS would provide the urban women secured sources of livelihood is the same way as MGNREGA is doing in rural areas.
 - The MGNREGA reserves at least one-third of the total workdays for women with participation rate in MGNREGA was 54.54% in 2021-22.



Issues in implementation of Urban Employment Guarantee Schemes

- **Creating of skilled workforce:** An employment guarantee scheme in urban areas will require a greater skill sophistication than in rural areas.
 - According to 'the India Skills Report 2022', **only 48.7% of India's educated youth are employable.** Therefore, finding a workforce for UEGS may not be easy.
- **Deciding beneficiaries:** If UEGS is implemented across the country, whether a poor person should be allowed to avail benefits under both MNREGA and UEGS is not clear.
- **Selection of urban areas:** The selection and definition of urban areas (metros, cities, towns) would be a challenge, like deciding city boundaries where the scheme would be applied.
- **Poor capacity or ULBs:** Unlike the capacity of the Panchayati Raj Institutions in rural areas, the Urban local bodies (ULBs) are poorly funded and have little capacity to provide help in implementation.
 - Additionally, UEGS would cost the union government around Rs 1 lakh crore.
- **Sustainability of urban areas:** Since, UEGS will attract more rural migrants in cities, providing basic facilities would be a challenging task for urban administration which is already overburdened.
- **Growing Environmental Concerns,** putting a limit on scope for industrial development due to the degradation of urban ecological commons.

Way Forward

- **Decentralised Urban Employment and Training (DUET):** This employment model has been proposed by the economist Jean Dreze.
 - Under this model, the state government issues 'job stamps' and distributes them to approved institutions – schools, colleges, etc.
 - The approved institution would arrange the work with the government paying the wages directly to the worker's account on presentation of job stamps.
- **Employment programme without guarantee:** The Government may consider implementing a national urban jobs programme (without the 'work guarantee') to deal with the issues of urban poverty.
- **Creation of low skilled jobs:** Low skilled jobs could be created in the field of environment conservation, construction, taking care of public property, etc. which would help absorb a low skilled workforce.
 - **Investment in urban infrastructure** in a labour-intensive approach or high capital-labour ratio to create more employment.
- **Encouraging small enterprises** to create jobs and overcome the slowdown in major employment generating sectors due to Global Supply chain disruptions and reduced mobility.
- **Reduce Migration from rural areas** through rural development, creating employment in rural areas with improved access to basic facilities like drinking water, healthcare etc.

Conclusion

An urban jobs guarantee scheme can be critical, even if temporary, to deal with urban poverty and unemployment. New jobs might be created through infrastructure upgrade as well as greenfield projects.

3.10. MGNREGA

Why in news

Parliamentary Standing Committee on Rural Development and Panchayati Raj has submitted an action taken report on its recommendations for MGNREG Act (MGNREGA).





About MGNREGA

- A scheme of Ministry of Rural Development, **its key objectives are –**
 - Providing **at least 100 days of legal unskilled manual work as a guaranteed employment in a FY** to every household in rural areas as per demand.
 - **Strengthening livelihood** resource base of poor.
 - **Strengthening Panchayati Raj Institutions.**
- **Funding pattern:**
 - The **central government bears the 100% wage cost of unskilled manual labour and 75% of the material cost including the wages of skilled and semi-skilled workers.**
 - Rest 25% is borne by the State government.
- **Right to get unemployment allowance** in case employment is not provided within fifteen days of submitting the application or from the date when work is sought.
 - Unemployment allowance is borne by the **state governments.**
- Scheme also aims at **improving quality of assets, skilling workers for entrepreneurship and hiring youth for jobs like GIS mapping and block-level monitoring of work.**
- **GeoMGNREGA** is a unique endeavour of the MoRD in association with National Remote Sensing Centre (NRSC), ISRO and National Informatics Centre for **geotagging of assets created under MGNREGA.**

Key Challenges and Recommendations made by Committee

- Ensure **effective Coordination with States** for timely release of funds.
 - Committee noted-
 - ✓ **Non-updation of muster roll within three days of completion of the work.**
 - ✓ Delay in submission of documents for release of wages/skilled/material share by the States.
 - ✓ **Delay in release of States' share of 25% material costs.**
- **Mitigation of unspent balances** through the utilization of allocated funds in a **time-bound and financially prudent manner.**
 - There were unspent balances at the **end of FY 2020-21 of an amount of more than Rs 5000 crores.**
- **Timely payment of wages**
 - Payment is to be done within **fifteen days from the date of closure of muster rolls.**
 - However, committee found a considerable amount of **wage liabilities pending** in November, 2021.
- **Increase in wages through linkage with commensurate inflationary index.**

Salient features of MGNREGA

-  The Gram Panchayat registers households after making enquiry and issues a job card.
-  Social Audit of MGNREGA works is mandatory.
-  At least one-third beneficiaries shall be women.
-  The employment will be provided within a radius of 5 km and if it is above 5 km extra wage will be paid. ★

Related News

MoRD has released report on delays in social audit under MGNREGA

- According to report titled '**Social audit calendar vs audits completed**', only **14.29%** of the planned audits have been completed in this financial year.
- **Social audit** is a process of reviewing official records and determining whether state reported expenditures reflect the actual monies spent on the ground.
 - The **original MGNREG Act, under Section 17, had provisions for social audit**, though the auditing standards were laid down by Comptroller and Auditor General in **December, 2016.**
 - Accordingly, **every Social Audit Unit is entitled to funds equivalent to 0.5% of the MNREGA expenditure** incurred by the State in the previous year.
 - To ensure their autonomy, **they are funded by the Centre and not the State.**

- Committee recommended using **Consumer Price Index – Rural (CPI-R, released by National Statistical Organisation) in place of Consumer Price Index – Agricultural Labour (CPI- AL, released by Labour Bureau)** for indexation of wages under MGNREGA.
 - ✓ **Reasons-** Food items make up more than two-thirds of the CPI-AL consumption basket, but **rural workers today spend a much smaller percentage of their money on subsidised food, and an increasingly larger amount on health, education and transport costs.**
 - ✓ Also, CPI-AL is different for different States/UTs.
- **Uniform wages across the country to end the disparity of wages under MGNREGA.**
 - Currently, **wage rates fluctuate from Rs. 193/- to Rs. 318/-** across the different States/UTs.
 - However, MGNREGA is a **Centrally sponsored scheme and Department of Rural Development is the nodal implementing agency of the scheme in the entire country.** Thus, it is befitting to have a single unified wage rate.
- **Increase in number of days of work sought under MGNREGA to 150 days from 100** keeping in view the **changing times and emerging challenges particularly in wake of the COVID Pandemic.**
 - Currently, **50 additional days of work** can be provided in **drought/natural calamity notified rural areas.**
 - Also, **State Governments can provide additional days work** from their own funds.
- **Promotion of ‘Buldhana Pattern’**
 - First time used in the Buldhana District of Maharashtra in the drought affected Vidarbharegion.
 - Under this, a unique symbiotic relationship is observed **wherein the raw material for road construction is obtained from the clogged and overflowing water bodies through their de-siltation.**
- **Better Promotion of Women-Centric Works under MGNREGA**
 - Average percentage of **women participation across the country is hovering around the 50% mark for the last 5-6 years.**
 - In this regard, Committee has recommended that **priority should be given to such projects which are women centric in nature to ensure their economic independence.**
- **Revamping of Scheme to meet the changing demands** including Medical Facilities to meet the challenges of Covid/emergencies.
 - It has recommended that that all labourers working under MGNREGA **must be given free basic medical facilities attached with Job Cards at the doorstep of respective villages.**

Conclusion

The need of the hour is for the Government to place **MGNREGA at the heart of its strategy to tackle the economic emergency.** The **Economic Survey of 2019-20** suggested that MGNREGA offers an early warning signal to detect rural distress. Treating MGNREGA as an instrument to alleviate the consequences of rural distress can help in overall inclusive and sustainable development.

3.11. INTELLECTUAL PROPERTY RIGHTS (IPR) REGIME IN INDIA

Why in News?

Recently, the Economic Advisory Council to the Prime Minister (EAC-PM) has released a report on India’s Intellectual Property Rights (IPR) regime.

About the paper

- The paper discusses **India current status in comparison to its global peers** in terms of **patenting and trademark** activities highlighting the **urgent need for investing in IPR ecosystem.**

Key findings on India’s Patent ecosystem



Positives

- **Number of patent applications increased** from 45,444 in 2016-17 to 66,440 in 2021-22.
- **Proportion of residents** in the applications has **reached 44.5% in 2021- 22.**
- **Patents granted** have also **gone up.**



Negatives

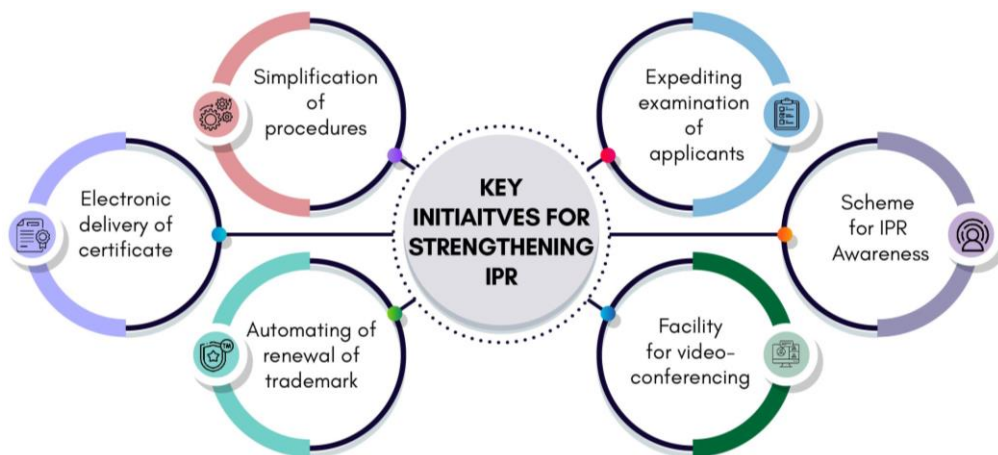
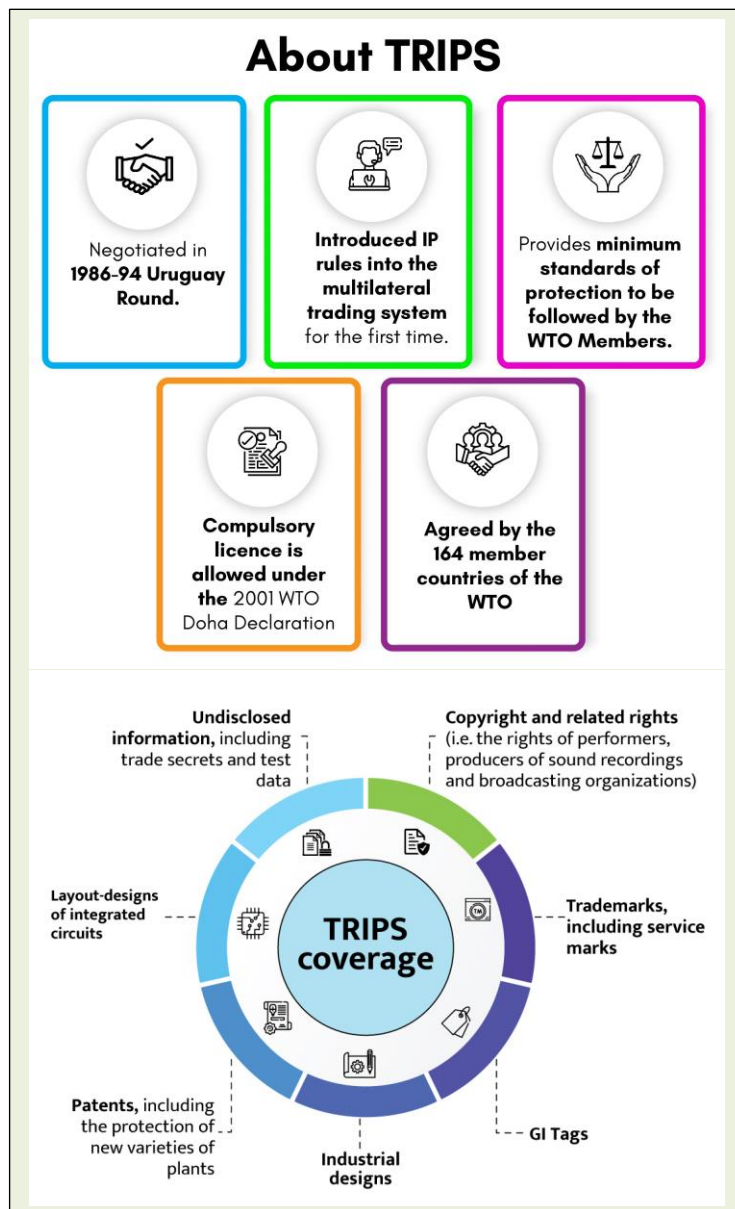
- In 2020, the number of **patents filed** in India was only **4% of China** and **9.5% of US.**
- **India takes about 58 months to dispose of a patent application** as compared to about 20 months in China and 23 months in the US.

About Intellectual Property Rights (IPR)

- Intellectual property (IP) refers to **creations of the mind**, such as inventions; literary and artistic works; designs; and symbols, names and images.
- Twin objectives of IPR include:**
 - Promoting investments in knowledge creation and business innovation.
 - Promote the widespread dissemination of new knowledge through market.
- IPR** are the rights given to persons over the creations of their minds which usually give the creator an **exclusive right over the use of his/her creation for a certain period of time.**
 - Such protection is provided in the form of **Copyright, Geographical Indications (GI), Patents, Registered designs Trademarks** etc.
- Trade-Related Aspects of Intellectual Property Rights (TRIPS)** is the most comprehensive multilateral agreement on IPR.
 - It is in **sync with the Paris Convention** for the Protection of Industrial Property (patents, industrial designs, etc.) and the **Berne Convention** for the Protection of Literary and Artistic Works (copyright).

Challenges in India's IPR regime

- Low share of patents filed by residents:** Lack of awareness about IPRs, legacy of sourcing technology from foreign players rather than indigenous development, and low investment in R&D is key reasons for this.
- Low expenditure on research and development:** India spends a mere **0.7 per cent of its GDP on R&D** which is too less compared to China (2.1%), Brazil (1.3%), Russia (1.1%), and South Africa(0.8%).
- Shortage of human resources:** Only around 860 people are employed in the patent office in India as compared to 13,704 in China and 8,132 in the US.
- Lack of fixed timelines for various steps:** For instance, there is no fixed timeline for filing an opposition against any patent application which leads to huge delay in granting patent.
- Frequent violation of IPR laws:** Counterfeiting and piracy is one of the major challenges in IPR regime due to easy availability of **low-cost digital technology.**



- Moreover, the **huge population base** and diverse geographical area create hurdle for the implementing/ enforcement agencies.

Measure to strengthen IPR regime









- Holistic review of National IPR Policy, 2016:** The re-assessment of the policy is imperative in the wake of emerging technologies.
 - Separate categories of rights for **AI and AI related inventions** and solutions should be created for their protection as IPRs.
- Strengthen the law and its enforcement:** Active coordination among law enforcement agencies like State Police, Customs, and CBI would efficiently counter the rising IP crimes of counterfeiting and piracy.
 - Additionally, a **separate statute or framework for trade secret protection** in India is imperative due to rising frauds and misappropriation in the digital world.
- Judicial reforms:** Establishment of dedicated benches at High Courts for IP matters would ensure disposal of IPR disputes in a time bound and efficient manner.
 - Also, there needs to be a **panel of amicus curiae** for assisting the courts in dealing with IPR matters.
- Enhancing administrative efficiency:** The administrative process of patent application process can be outsourced to a third party which will help examiners and controllers to focus on the core technical work.
- Other reforms:** Industry and academia collaboration, further simplification of application filing process, eliminating cumbersome compliant norms, etc.

Conclusion

This year India is ranked 43 OUT OF 55 COUNTRIES in the International IP Index 2022 (by US Chambers of Commerce). **It shows the improvement made so far.**

However, India possesses a large pool of creative individuals with efficient and innovative ideas. These necessitate establishing a robust, transparent and predictable IPR regime.

FRAMEWORK FOR GOVERNANCE OF IPR REGIME IN INDIA

| Types of IPR | Legislative framework | Administrative architecture |
|---|---|--|
|  Patents | Indian Patents Act, 1970 (amended in 2005) | Controller General of Patents, Designs and Trade Marks (CGPDTM) |
|  Designs | The Design Act, 2000 | |
|  Trade Marks | Trade Marks Act, 1999 | |
|  Copyrights | The Copyright Act, 1957 | Registrar of Copyright |
|  Biodiversity | Biological Diversity Act, 2002 | National Biodiversity Authority |
|  Geographical Indication (GI) | The GI of Goods (Registration and Protection) Act, 1999 | Geographical Indication Registry (GIR) |
|  Transistors & Electric Circuit Board | The Semiconductor Integrated Circuits Layout Design Act, 2000 | Semiconductor Integrated Circuits Layout Design Registry (SCILDR) |
|  Plant Varieties and Farmers | Protection of Plant Varieties and Farmers' Rights Act 2001 | Department of Agriculture |

National IPR Policy 2016

- It was adopted to **stimulate innovation and creativity across sectors**, and provide a clear vision regarding IPR issues.



3.11.1. GLOBAL INNOVATION INDEX

Why in News?

India jumped six-notch to become 40th most innovative country in the 132-nation Global Innovation Index (GII) from 46th rank in 2021.

About Global Innovation Index (GII) Report

- Launched in 2007, the GI tracks the **global state of innovation** and **ranks innovative performance** of nations annually.
 - The **World Intellectual Property Organization (WIPO)** joined it in 2011.
- Today, it is published by **WIPO** in partnership with **Portulans Institute**, various corporate partners (E.g., **Confederation of Indian Industry**), and Academic Network Members.
- GII 2022 Theme:** "What is the future of innovation-driven growth?"
- GII 2022 Results:** It ranks the innovation performance of **132 countries** based on two sub-indices:
 - Innovation Input Sub-Index
 - Innovation Output Sub-Index (see image).
- Top 5 countries in GII 2022:** Switzerland, USA, Sweden, UK, and the Netherlands.
- India:** India ranks **40th**, a rise of **41 places** since **2015**. In terms of **region** and **income group**, India ranks at the **top in Central and Southern Asia**, and in the **Lower middle-income group**.
 - India continues to hold **1st rank in the ICT services exports indicator (within GI)**.
 - Other indicators (within GI):** Venture capital recipients' value (6th), Finance for startups and scaleups (8th), Graduates in science and engineering (11th), Labor productivity growth (12th) and Domestic industry diversification (14th).
 - Also, from India, **Bengaluru, Delhi, Mumbai, and Chennai** featured among the world's largest **top 100 Science and Technology clusters**.

GLOBAL INNOVATION INDEX



INNOVATION INPUT SUB - INDEX



Institutions

Political environment/
Regulatory environment/
Business environment/



Human capital and research

Education/
Tertiary education/
Research and
Development (R&D)



Infrastructure

Information and
communication
technologies (ICT)/
General infrastructure/
Ecological sustainability



Market Sophistication

Credit/Investment/
Trade, Diversification,
and market scale



Business sophistication

Knowledge workers/
Innovation linkages/
Knowledge absorption

INNOVATION OUTPUT SUB - INDEX



Knowledge and technology outputs

Knowledge creation/
Knowledge impact/
Knowledge diffusion



Creative output

Intangible assets/
Creative goods and services/
Online creativity

About WIPO

- It is one of the 15 specialized agencies of the **United Nations (UN)**, and is headquartered in **Geneva, Switzerland**.
- It was created in 1967 "to **encourage creative activity, to promote the protection of intellectual property** throughout the world"
- It currently has **193 member states** and administers multiple international treaties.

WIPO-Administered Treaties for Classifications:

- The Nice Agreement (1957)** establishes a classification of goods and services for the purposes of **registering trademarks and service marks** (the Nice Classification).
- The Locarno Agreement (1968)** establishes a classification for **industrial designs** (the Locarno Classification).
- The Vienna Agreement (1973)** establishes a classification (the Vienna Classification) for marks that consist of, or contain, **figurative elements**.
- The International Patent Classification (1971)** is used to classify **patents and utility models** according to the different areas of technology to which they pertain. It was established by the **Strasbourg Agreement**.

3.12. NEWS IN SHORTS

3.12.1. PERIODIC LABOUR FORCE SURVEY (PLFS)

- As per PLFS, **India's headline urban unemployment rate was 7.6% in the quarter** ending this June (the lowest in the last four years).
- The PLFS was launched in 2017 by the **National Statistical Office** (under the Ministry of Statistics and Implementation).
- **Objective of PLFS is primarily twofold:**
 - to estimate the **key employment and unemployment indicators** in the short time interval of 3 months for the urban areas only in the current weekly status (CWS).
 - to estimate **employment and unemployment indicators in both 'Usual Status' and CWS** in both rural and urban areas annually.

3.12.2. RESERVE BANK OF INDIA (RBI) ISSUES GUIDELINES FOR DIGITAL LENDING

- RBI tightened norms for digital lending to **protect consumers from breach of data privacy, unfair business conduct, charging of exorbitant interest rates and unethical recovery practices by fintech players.**
 - Digital Lending involves **lending through web platforms or mobile apps**, utilizing technology for authentication and credit evaluation.
 - Guidelines are applicable to all Regulated Entities (RE) i.e. **Commercial banks, Primary (urban) co-operative banks, Non-Banking Financial Companies (NBFCs) etc.**
- **Key Features of guidelines**
 - All loan disbursements/repayments are to be **executed only between bank accounts of borrower and RE.**
 - **Cooling off/ look-up period to exit digital loan** by paying principal and proportionate annual percentage rate without any penalty shall be provided.
 - **Lenders can store information** such as name, address of customer etc. that are **required to process and disburse loan and repayment** of it.
 - ✓ **Biometric information of the borrower cannot be stored by Digital Lending Apps (DLAs).**
 - **REs shall provide a Key Fact Statement (KFS) to the borrower** before the execution of the contract in a standardized format for all digital lending products.

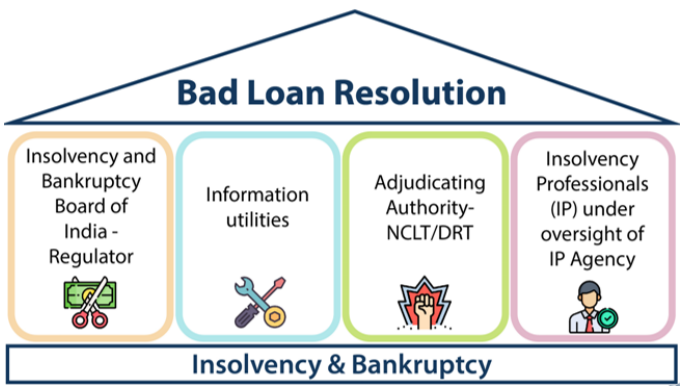
- Reporting of all lending to **Credit Information Companies (CICs)** as per **CIC (Regulation) Act, 2005** and others.
- To make lending more efficient, reduce costs of borrowers and turnaround time, RBI has also launched pilot projects for **end-to-end digitisation of Kisan Credit Card (KCC) lending.**
 - The pilot project will **run in select districts of Madhya Pradesh and Tamil Nadu** with Union Bank of India and Federal Bank respectively.

3.12.3. INSOLVENCY AND BANKRUPTCY CODE (IBC)

- **With the objective of timely resolution and value maximisation**, Insolvency and Bankruptcy Board of India (IBBI) has **amended IBC to:**
 - **Allow creditors to sell assets separately** in cases where no resolution plan has been received as a whole.
 - Announce a **performance-based pay structure for Resolution Professionals (RPs)**, insolvency professionals appointed to conduct resolution process.
 - ✓ **RPs charge success fees** contingent on a successful resolution for company.
- IBC was introduced in 2016 to tackle **bad loan problems** and **act as one stop solution for resolving insolvencies.**
- It **consolidates and amends several laws** relating to **reorganization and insolvency resolution** of corporate persons, partnership firms and individuals **in a time-bound manner** for:
 - **Maximization of value of assets** of such persons,
 - **Promoting entrepreneurship**, availability of credit and balance interests of all stakeholders.
- **IBBI is one of the four pillars** (see image) established under IBC for **its implementation.**
- **Significance of IBC:** reduction in time and cost of bankruptcy resolution, Ease of Doing Business, Behavioral changes among debtors for early resolution etc.
- **Challenges:** Reducing recovery rates and adjudicatory delays, Lack of standardized cross-border insolvency, lack of professionalism among IPs and IP Agency etc.

3.12.5. PRODUCTION-LINKED INCENTIVE (PLI) SCHEME

- Recently, first-ever disbursement under any Production-Linked Incentive (PLI) scheme was approved.
- **The Empowered Committee** headed by CEO, NITI Aayog, **approved incentives under the PLI scheme for Large-Scale Electronics Manufacturing** (under Ministry of Electronics and Information Technology (MEITY)).
 - Scheme offers **incentive to boost domestic manufacturing and attract large investments in mobile phone manufacturing** and specified electronic components.
 - Scheme extends **an incentive of 4% to 6%, on net incremental sale** of manufactured goods covered under target segments, **for a period of 5 years.**
- **About PLI Schemes**
 - These are a cornerstone of the government’s push for **accomplishing the vision of Atmanirbhar Bharat.**
 - PLI schemes envisages **providing on average 5% of the production value as an incentive** to approved investors.
 - The PLI scheme is **implemented by the concerned Ministries/ Departments** and will be within the overall financial limits prescribed.
 - **Union Budget 2021-22** announced an outlay of **INR 1.97 lakh crores for the PLI schemes** for various sectors.
 - PLI schemes for 14 sectors includes automobile and auto components, electronics and IT system, telecom, pharmaceuticals, solar modules, metals and mining, textiles and apparel, white goods, drones, advanced chemistry cell batteries, renewable energy, medical devices and speciality steel.



3.12.4. PROGRAMME FOR DEVELOPMENT OF SEMICONDUCTORS AND DISPLAY MANUFACTURING ECOSYSTEM IN INDIA

- Cabinet recently approved modifications in “Programme for Development of Semiconductors and Display Manufacturing Ecosystem in India”.
- The cabinet also approved the **Production Linked Incentive (PLI) Scheme** on ‘National programme on High Efficiency Solar PV Modules’.
- **Features of the Programme:**

| | |
|--|---|
| <p>Programme for Development of Semiconductors and Display Manufacturing Ecosystem in India</p> | <p>Under modified programme, a uniform fiscal support of:</p> <ul style="list-style-type: none"> • 50% of Project Cost will be provided for all technology nodes under Scheme for Setting up of Semiconductor Fabrication in India and Scheme for Setting up of Display Fabrication; • 50% of capital expenditure under the Scheme for Setting up of Compound Semiconductors / Silicon Photonics / Sensors Fabrication and Semiconductor ATMP /OSAT facilities in India. • Aim: Expedite investments in semiconductor and display manufacturing in India. |
| <p>Production Linked Incentive Scheme (Tranche II) on ‘National programme on High Efficiency Solar PV Modules</p> | <p>With an outlay of ₹19,500 crore (follow-up of ₹4,500 first tranche in 2020) for incentivising manufacturing of domestic solar cell modules for 5 years, it aims to:</p> <ul style="list-style-type: none"> • Build an ecosystem for manufacturing of high efficiency solar PV modules in India through manufacturing capacity of Giga Watt (GW) scale. <ul style="list-style-type: none"> ○ It includes polysilicon cells, ingots, wafers and panels to assemble modules. • Strengthen Atamirbhar Bharat initiative and reduce import dependence in the area of Renewable Energy. • Generate employment and give impetus to R&D for higher efficiency Solar PV Modules. |

3.12.6. REVISED NATIONAL LIST OF ESSENTIAL MEDICINES (NLEM) 2022

- Recently the revised National List of Essential Medicines (NLEM) 2022 was released by Union Ministry of Health and Family Welfare.
- Primary purpose of NLEM is **to promote rational use of medicines considering** three important aspects i.e. **cost, safety and efficacy**.
 - It also helps in **optimum utilisation of healthcare resources and budget**; drug procurement policies, **health insurance**; **improving prescribing habits**; medical education and drafting pharmaceutical policies.
- Medicines under NLEM **automatically come under price control under Drug Price Control Order (DPCO)**.
 - **DPCO was issued by government** under Essential Commodities Act, 1955 to regulate prices for essential and lifesaving medicines.
 - DPCO follows a **market-based pricing mechanism**.
 - ✓ Ceiling price is worked out based on **average price of all brands having at least 1% market share** of total market turnover of that drug plus a notional 16% retailer's margin.
 - NLEM was **first compiled in 1996** and it was **revised in 2003, 2011, and 2015**.
- Drugs in NLEM are included in **scheduled category** and their **price is regulated by National Pharmaceutical Pricing Authority (NPPA)**.
 - NPPA is an **independent body of experts in Ministry of Chemicals and Fertilizers**.
- **About NLEM 2022**
 - **384 drugs have been included** in this list with addition of 34 drugs. **26 from previous list have been dropped**.
 - **Medicines are categorized** (into 27 therapeutic categories) **based on level of healthcare system as:** P- Primary; S- Secondary and T- Tertiary.
 - Medicines covered under NLEM **include nicotine replacement therapy, oral rehydration salts, Paracetamol, Ribavirin, Streptomycin, Lorazepam and Ivermectin**.

3.12.7. IMPACT INVESTING

- **Recently, a study by Impact Investor's Council (IIC)** suggested that leveraging India's strong potential in the impact investing space to accelerate the achievements of its SDG 2030 targets.
- The study also points that **Indian entrepreneurs are applying technology solutions for impact**. These stem from applied engineering solutions in various industries having an intersection with:
 - **Climate mitigation and adaptation**

- **Agriculture**
- **Healthcare diagnostics and devices**

What is Impact Investing?

- It is an investment strategy that aims to **generate specific beneficial social or environmental effects** in addition to financial gains.
- Investors who follow impact investing consider a company's commitment to corporate social responsibility or the duty to positively serve society as a whole.
- It can be made in **both emerging and developed markets** and target a range of returns from below market to market rate, depending on investor's strategic goals.
- The growing impact investment market provides capital to address the world's most pressing challenges in sectors such as **sustainable agriculture, renewable energy, conservation, microfinance, and affordable and accessible basic services including housing, healthcare, and education**.
- **Some examples of impact investing:**
 - **Educate Girls Development Impact Bond: The world's first development impact bond (DIB)** for education, the Educate Girls DIB, was launched as a proof-of-concept project in **Rajasthan**.
 - **Seed Funding in Healthcare:** There was an **approximately 85 percent rise in the number of seed-stage deals** in India across healthcare segments in 2020 like telemedicine, cloud-enabled diagnostic tests etc.

3.12.8. WORLD SOCIAL PROTECTION REPORT 2020-22: REGIONAL COMPANION REPORT FOR ASIA AND THE PACIFIC

- International Labour Organisation (ILO) recently released World Social Protection Report 2020-22: Regional companion report for Asia and the Pacific.
- Social protection is defined as a **set of policies and programs designed to reduce poverty and vulnerability by promoting efficient labour markets, diminishing people's exposure to risks, and enhancing their capacity to protect themselves against hazards and income loss**.
 - It includes **access to health care and income security measures** related especially to old age, unemployment, sickness, disability, maternity etc.
- **Key highlight of report**
 - In the Asia-Pacific region, **55.9% of the population still does not have access to forms of social protection**.

- **Spending on social protection in the region has averaged 7.5% of GDP** over the past two years, with half of countries spending 2.6% or less.
 - ✓ This is significantly below the global average of 12.9%.
- **Only 24.4% of Indians**, fewer than Bangladesh (28.4%), are **under any sort of social protection benefit**.
- India's **social security benefits are lower than five percent of GDP per capita**.
- **Three out four workers in the Asia Pacific region are not protected** during illness or work injury.
- Report urges countries in the region to **pursue a 'high-road' development path, with social protection playing a primary role**.
- **Steps taken by India to provide social protection**
 - **Social Security Code, 2020** to amend and consolidate existing labour laws relating to social security with the goal to extend social security benefits to all employees and workers.
 - **Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM)** for old age protection and social security of Unorganized workers.
 - **MGNREGA to enhance livelihood security** in rural areas by providing at least 100 days of wage employment in a financial year.

3.12.9. SMART SOLUTIONS AND INCLUSIVE CITIES AWARDS 2022

- **Minister for Housing & Urban Affairs presented the awards.**
- These awards are an **initiative of National Institute of Urban Affairs (NIUA) and UN in India to address city-level accessibility and inclusion challenges** faced by persons with disabilities (PwD), women and girls, and elderly.
- Awards also aim **to promote people-centric design** and to foster novel **home-grown technological innovations** and solutions.

3.12.10. DHARAMSHALA DECLARATION

- A declaration '**Dharamshala Declaration**' was adopted at the at National Conference on Tourism which **sets out long-term and short-term goals** for the country in the tourism sector.
- **Key highlights of the Declaration**
 - Tourism sector to recover to the **pre-pandemic level by mid-2024**.
 - Achieve **\$250 billion** contribution of Tourism to the **GDP by 2030**.
 - Make India a **World leader** with a revenue goal of **\$1 trillion by 2047**.
 - Focus on **sustainable and responsible** tourism.

- Bring in necessary interventions, including **visa reforms, ease of travel, traveler-friendly immigration facilities at airports and openness to international travel**.
- **Indian Tourism Sector**
 - India is ranked **10th** among **185 countries** in terms of travel & tourism's total contribution to GDP in **2019**; contributing 6.8% of GDP.
 - It is a **labor-intensive sector**, accounting for **39 million jobs** (2020) and has a significant impact on **trade, investment, social inclusion** etc.
 - **India's Strength:** India offers rich historical, cultural and geographical diversity including World Heritage sites, biogeographic zones, national parks, beaches etc.
 - **Challenges:** Infrastructure, Security, impact of pandemic on tourism (registering 74.9% negative annual growth rate in Foreign Tourist arrivals in 2020) etc.

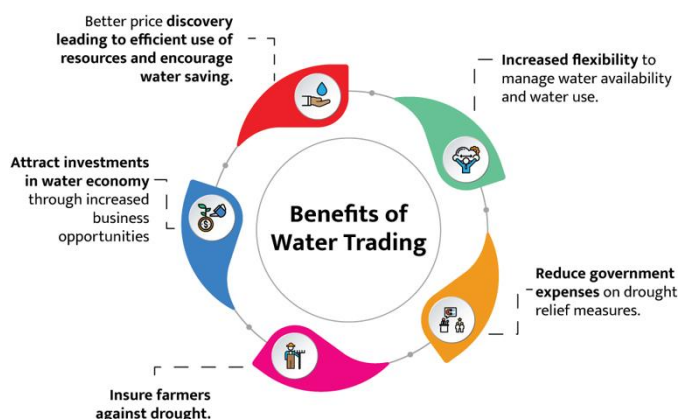


3.12.11. INDIA TOURISM STATISTICS 2022

- According to data highlighted in the report, the **COVID-19 pandemic and the resulting restrictions saw the foreign tourist arrivals in India dip by 44.5% in 2021**.
- **Other key highlights**
 - The top countries from which **foreign tourists arrived in India** included the **U.S., the U.K., Bangladesh, Canada, Nepal, Afghanistan and Australia**.
 - **Number of Indian nationals departing the country saw a rise of 7.3% in 2021**.
 - ✓ The UAE was the top destination for Indians in 2021, followed by the U.S., Qatar, Oman and the U.K.
 - Only **1.64% of all tourists worldwide comes from India**.
 - Domestic tourism in India saw a **minor revival with an increase of 11.05%**
- India's ranking in the **global Travel and Tourism Development Index (TTDI) is 54th in 2021**.

3.12.12. WATER TRADING

- NITI Aayog is working on **draft policy regarding trading in water on commodity exchanges** like gold, silver and crude oil.
- Water trading refers to **buying, selling or leasing water access right** enabling water to be transferred from one user to another.
 - **Market price of water reflects its demand and supply.**
 - It is already practiced in **Australia, Chile, USA** among others.
 - In 2020, **first tradable water price futures index was launched on Chicago Stock Exchange.**
- **Concerns over Water Trading**
 - **Politically sensitive issues** due to greater impact on poor and marginalized sections of society.
 - **Against religious and cultural traditions** of community considering water with spiritual value.
 - Promote **privatization of water resources (public good or a basic human right)**, leaving the state with no control over them.



3.12.13. ASIAN PALM OIL ALLIANCE (APOA)

- It is formed by **apex edible oil industry associations of five major palm oil importing countries**, including- **India, Pakistan, Sri Lanka, Bangladesh and Nepal.**
 - **Solvent Extractors' Association (SEA)** of India will manage its **secretariat.**
 - Asia accounts for **40% of global palm oil demand with India as largest importer** accounting for nearly **15% (13-14 million tonnes).**
- Based on idea to **gain collective bargaining power and make imports sustainable**, APOA will work to
 - **Change negative image** of palm oil and ensure that it is recognised as a **high-quality, economical, and healthy vegetable oil.**
 - **Safeguard economic and business interests** of palm oil consuming countries and **increase its consumption in member countries.**
- **About Palm Oil**
 - It is **edible vegetable oil** produced from palm fruit of **Elaeis Guineensis (African oil Palm)** or **Elaeis Oleifera (indigenous to South and Central America).**
 - It is rich in **Vitamin A and E** with **no trans fatty acids**; commonly used in **food products and industrial applications.**
- **India's Initiative for Palm Oil**
 - **National Mission on Edible Oils - Oil Palm (NMEO-OP)**, Centrally Sponsored Scheme for self-reliance in edible oil.
 - **Oil Palm Area Expansion** under Rashtriya Krishi Vikas Yojana.
 - Increasing **minimum support prices of oilseed crops.**



SMART QUIZ

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4. SECURITY

4.1. INS VIKRANT

Why in news?

Prime Minister commissions India's first Indigenous Aircraft Carrier INS (Indian Naval Ship) Vikrant in Kochi.

INS Vikrant

CARRIER STATS

| | |
|--------------------|-------------------------|
| Crew | 1,700 |
| Compartments | 2,300 |
| PERFORMANCE | |
| Top Speed | 28 knots |
| Cruising Speed | 18 knots |
| Endurance | 18 knots nautical miles |

WEAPONRY*

- 34 fixed wing and rotary aircraft
- MiG-29K fighter aircraft
- Kamov-31 Air Early Warning Helicopters
- American-built MH-60R multirole helicopters
- Indigenously built Advanced Light Helicopters

HEIGHT 59 METRES

DECKS 14

LENGTH 262 METRES

WIDTH 62 METRES

WEIGHT 40,000 TONNES

*The Navy has not specifically revealed yet what weapons and equipment INS Vikrant will have. Expected list based on earlier statements and weaponry on board the comparably-sized INS Vikramaditya.

About INS Vikrant

- INS Vikrant was India's first aircraft carrier, **bought from UK and commissioned in 1961.**
 - It played an important role in **several military operations** - including **1971 war with Pakistan** - before being **decommissioned in 1997.**
 - 'Vi' word denotes **something that is distinctive or extraordinary**, and 'krant' means to **move or advance in a direction.**
- Vikrant is the **largest warship ever been built in the maritime history of India.**
 - It is also the **first indigenously designed and built aircraft carrier** for Indian Navy.
 - It is **designed by Indian Navy's in-house Warship Design Bureau (WDB)** and **built by Cochin Shipyard Limited**, a Public Sector Shipyard under Ministry of Ports, Shipping & Waterways.
 - The only operational aircraft carrier with Indian Navy at present is **INS Vikramaditya**, which had **served in erstwhile Soviet** and, thereafter, **Russian navy as Admiral Gorshkov** before being **inducted by India in 2013.**
- Key features**
 - Over 76% of the material and equipment on board is indigenous.**
 - Uses **Short Take Off But Assisted Recovery (STOBAR)** aircraft-operation mode that uses a ski-jump for launching aircrafts.
 - It can **accommodate 30 aircraft** on board.

Significance of an aircraft carrier

- **Self-Reliance:** The new aircraft carrier provides a significant boost to self-reliance campaign in defense manufacturing.
- **Enhance capability:** Such warships enhance the Navy's capability to travel far and carry out domination operations including Air Interdiction, Anti-Surface Warfare etc.
 - It gives the Indian Navy extraordinary reach from its coastline.
- **Increased strength:** The commissioning of INS Vikrant adds India's name to a small group of nations with the ability to manufacture elite naval asset and project India's power overseas.
- **Net Security provider:** It is important amid India's bid to be a net security provider in the Indian Ocean region where it faces China, whose navy, too, is heavily focusing on aircraft carriers and has already inducted two vessels.
- **Deterrence:** Aircraft carriers act as a deterrent and will boost India's defence as well as attack in a conventional war against enemies, especially in wake of rising China's presence in IOR through its String of Pearls Policy.

India China Carrier comparisons

- **INS Vikramaditya**
Commissioned in 2013
India's first aircraft carrier built using modified Kiev-class carrier purchased from Russia



Displacement:
45,000 tonnes



- **INS Vikrant**
India's first indigenously-built aircraft carrier
45,000 tonnes



- **Liaoning 2012**
China's first carrier built using Soviet-era hull
66,000 tonnes



- **Type 001A Shandong 2019**
First indigenously-built aircraft carrier
70,000 tonnes



- **Type 003 Fujian 2022.**
Indigenously built, features full-length flight deck with catapult launch system
85,000 tonnes



Conclusion

The induction of INS Vikrant highlights government thrust towards Make in India and balancing of defence as well as socio-economic needs of the country. It will help boost India's defence capabilities with respect to its 7500 Km coastline as well as act as a balancing force given the rising presence of China and other developed countries in Indian Ocean Region.

4.2. NEWS IN SHORTS

4.2.1. HYBRID MILITANTS

- A hybrid militant was arrested in Jammu & Kashmir.
- 'Hybrid' or 'part-time' militants are **people who do not figure on police records as ultras**, but are radicalised enough to carry out a terror strike and then slip back into the routine life.
 - A hybrid militant poses as civilian to dissemble their violent activities thus making it more difficult for security forces to trace them or determine their activities.

4.2.2. MILITARY EXERCISES IN NEWS

- **Exercise Vostok – 2022:** Indian Army contingent will be participating in multilateral strategic and command Exercise Vostok – 2022.
- **Exercise Kakadu:** It is Australia's naval exercise hosted biennially. Navies of more than 14 countries (including India) participated in this exercise recently.
- **Exercise JIMEX 22:** It is a Japan India Maritime Exercise.

- **Exercise Parvat Prahar:** Exercise showcased prowess of Indian Army to carry out operations in high-altitude mountains of Ladakh sector.

4.2.3. TEJAS MARK-2

- **Cabinet Committee on Security has cleared Tejas Mark-2 project** — a more capable version of indigenous Tejas light combat aircraft (LCA).
 - Tejas is a single engined, light weight, highly agile, multi-role supersonic fighter jet designed by Aeronautical Development Agency under DRDO and Hindustan Aeronautics Limited.
- **Tejas Mark-2 has been described as a 4.5-generation machine that will have 70 per cent indigenisation.**
- It will be fitted with more powerful GE-414 engines, giving it a longer combat range and greater capacity to carry weapons than existing the Tejas Mark-1.

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

- The Defence Research and Development Organisation (DRDO) conducted a successful test flight of VSHORADS missile.
- VSHORADS is a Man Portable Air Defence System (MANPAD) designed and developed indigenously by the DRDO.
 - It can neutralise low altitude aerial threats at short ranges.
 - It is propelled by a dual thrust solid motor and incorporates miniaturized Reaction Control System (RCS) and integrated avionics.

4.2.5. ROHINI SOUNDING ROCKETS

- Rohini RH-200 sounding rocket is a two-stage rocket capable of climbing to a height of 70 km bearing scientific payloads.
- The 1st sounding rocket was launched in 1963 from Thumba (beginning of Indian Space Programme).
 - ISRO started to launch indigenous sounding rockets in 1965.

- **Applications:** Probe upper atmospheric regions; Space research; Test or prove prototypes of new components/subsystems intended for use in launch vehicles and satellites.

4.2.6. EXERCISE SYNERGY

- Recently, the Indian Computer Emergency Response Team (CERT-In) hosted 'Synergy'- a cyber security exercise in collaboration with Cyber Security Agency of Singapore.
 - 13 countries participated in it.
- It was conducted as part of the International Counter Ransomware Initiative- Resilience Working Group, led under the leadership of National Security Council Secretariat (NSCS).
- It aims to accelerate cooperation to counter ransomware.
- Ransomware is a malware designed to deny access to system or files on the user computer through encryption and demanding a ransom payment for the decryption key.

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5. ENVIRONMENT

5.1. CLIMATE CHANGE AND WOMEN

Why in news?

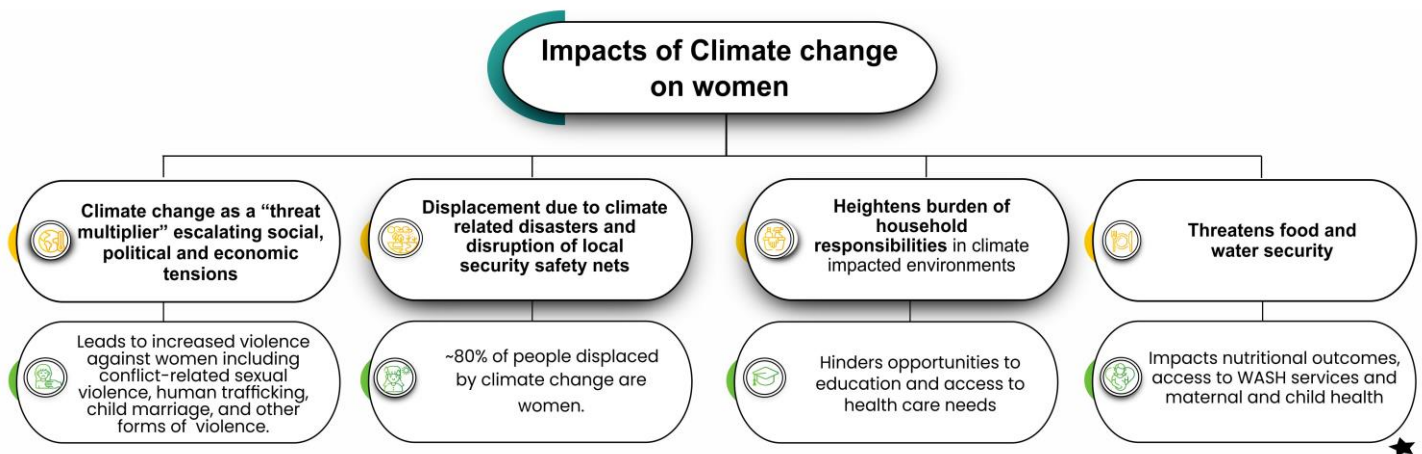
A report titled 'State of gender equality and climate change in South Asia and the Hindu Kush Himalaya (HKH)' was recently released by International Centre for Integrated Mountain Development (ICIMOD).

About the report

- It assesses the state of gender equality and climate change by analysing **three climate-affected sectors – agriculture, water, and energy (with a focus on renewable energy)**.
- The assessment **covers all 10 countries which fall in South Asia and the HKH – Afghanistan, Bangladesh, Bhutan, China, India, Maldives, Myanmar, Nepal, Pakistan, and Sri Lanka.**

International Centre for Integrated Mountain Development (ICIMOD)

- It is an **intergovernmental knowledge and learning centre** that develops and shares research, information, and innovations to empower people in the **eight regional member countries of the HKH – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan.**
- It aims to enable sustainable and resilient mountain development for improved and equitable livelihoods through knowledge and regional cooperation.

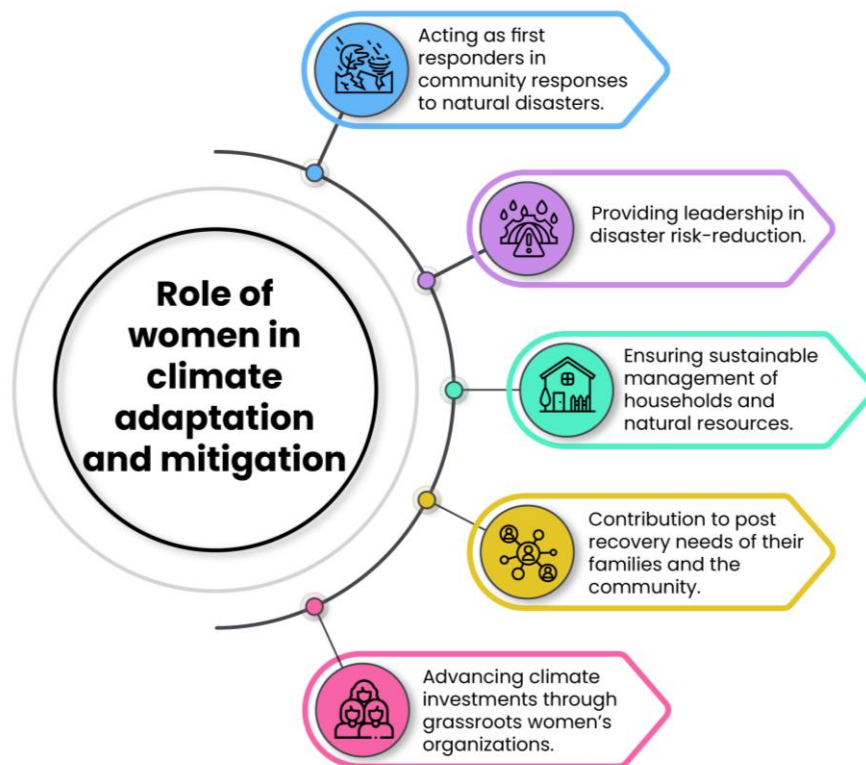


Why are women disproportionately vulnerable to climate change?

- **Public measures lack a gender equality perspective:** Most policy documents lack explicit provisions for addressing the specific vulnerabilities of women across sectors and the inequalities that result from prevailing (and unequal) norms, roles, and relations.
 - E.g., **National Action Plan for Climate Change (NAPCC), 2008** of India recognises that women are more vulnerable to climate change but **lacks apparent gender and social inclusion measures.**
- **Lack of gendered data:** The scale and scope of women’s burden related to climate change is not well understood due to inadequate data.
- **Inadequate access to and control over finance and productive resources:** It affects women’s contribution to climate efforts and ability to economically recover from climate related disasters or loss of livelihood.
- **Patriarchal norms:** Socio-cultural factors like regulations on movement, childcare and elderly care responsibilities, gendered cultural codes of dress etc. limit their mobility, heighten vulnerability and exposure to climate change related extreme weather events.
- **Dependence on natural resources:** Women are more dependent for their livelihood on natural resources that are threatened by climate change.
 - E.g., More than three-quarters (75.7%) of women in rural India are engaged in agriculture, as per the Periodic Labour Force Survey (PLFS, 2019-20).

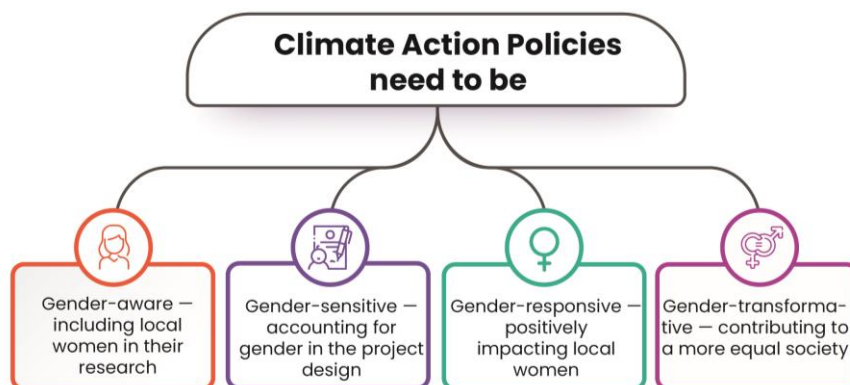
Why is it important to involve women in Climate Action?

- **Climate equity and justice:** Including the needs, perspectives, and ideas of women in climate action is prerequisite for ensuring climate equity and justice.
- **Source of traditional and indigenous knowledge:** For instance, indigenous women practice agricultural systems which are rooted in ancient history, inherently adapted to specific variations in land and climate.
- **Ensuring sustainable agriculture and food security:** Women comprise a substantial portion of the agricultural labor force in developing countries.
- **Adequate representation to voice their concerns:** Women are more vulnerable to the impacts of climate change and should receive appropriate representation in climate action.



What can be done to incorporate gender perspectives into mitigation and adaptation actions?

- **Formulate mechanisms to ensure maintenance of gender-disaggregated data** using civil society groups and local frontline workers in government departments.
- **Gender equality and social inclusion-sensitive assessments:** Monitoring and evaluating interventions can help improve the effectiveness of policies in the short term.
- **Guaranteeing the meaningful participation of women in policy dialogues** and in the development of climate-related interventions.
 - Mainstream gender into decision making at all levels from policy to practice.
- **Implement gender-responsive budgeting and gender audits** to ensure that their issues are reflected in all stages and phases of development programmes.
- **Capacity building:** Through appropriate skill enhancement, women can be encouraged to contribute proactively to climate change efforts, especially through provision of indigenous knowledge.



5.2. EXTREME WEATHER EVENTS

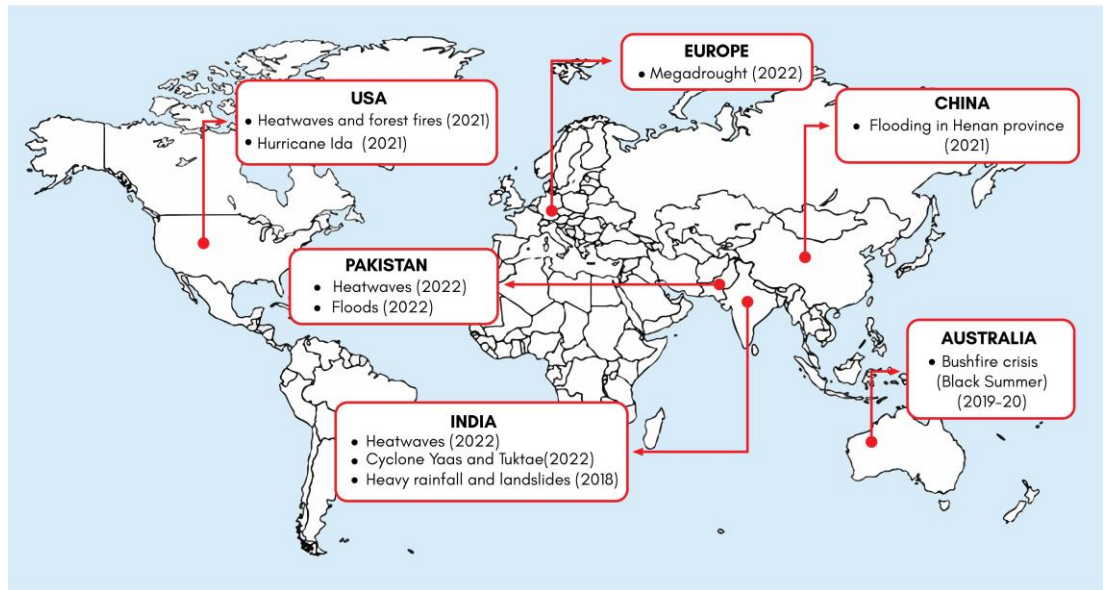
Why in news?

Rising global temperatures have contributed to more frequent and severe extreme weather events around the world, as seen in during recent droughts in Europe and floods in Pakistan.

What are Extreme events?

- Extreme weather includes **unexpected, unusual, unpredictable severe or unseasonal weather**; weather at the extremes of the historical distribution—the range that has been seen in the past.

Examples of recent Extreme Weather Events attributed to Climate Change



- What is called an extreme weather or climate event will vary from place to place in an absolute sense (e.g., a hot day in the tropics will be a different temperature than a hot day in the mid-latitudes), and possibly in time given some adaptation from society.

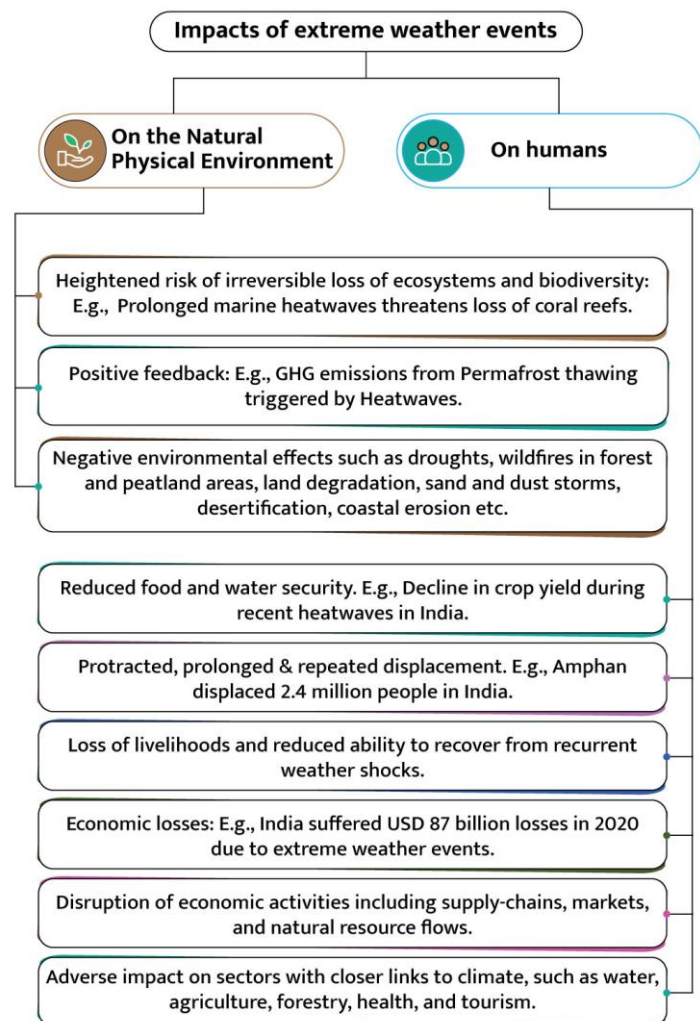
- As per **Sixth Assessment Report (AR6)** of Intergovernmental

Panel on Climate Change (IPCC), **human induced climate change has likely increased the frequency and intensity of extreme events since pre-industrial times**, including heatwaves, extreme precipitation events, marine heatwaves, etc.

- Also, according to **Council on Energy, Environment and Water's Climate Vulnerability Index**, **More than 80 percent of India's population lives in districts highly vulnerable to extreme hydro-met disasters.**
 - The **southern zone of India is the most vulnerable to extreme climate events and their compounding impacts**, followed by the eastern, western, northern, north-eastern and central zones.

What are the challenges in tackling Extreme events?

- **Lack of preparedness:** One-third of the world's people, mainly in least developed countries and small island developing states, are still not covered by early warning systems.
- **Commitment gap:** Even relatively small incremental increases in global warming (+0.5°C) can cause statistically significant changes in extremes on the global scale. Current global commitments would lead to global warming in the range of 1.8 to 2.4 °C.
- **Uncertainty and complexity of extreme events:** Due to complex nature of atmospheric phenomena, it is quite difficult to predict extreme events.
- **Inequalities:** Smaller or economically less-diversified countries face particular challenges in providing the public goods associated with disaster risk management.



- Within countries, inequalities occur based on socioeconomic, demographic, and health-related differences and differences in governance, access to livelihoods, entitlements, and other factors.
- **Enhanced exposure and vulnerability due to skewed development processes:** Rapid unplanned urbanization has led to the emergence communities which are highly vulnerable to extreme events, e.g., people living in low lying informal settlements.
- **Lack of funding:** International funding for disaster risk reduction remains relatively low. Further, no resolute commitments under international negotiations have been made for compensation related to Loss and Damage (L&D).

What can be done to tackle extreme weather events?

- **Making L&D a formal agenda item at COP27:** This would also require accurately estimating the costs of extreme weather events at a regional level frequently, with numbers on losses and damages.
- **Enhancing climate commitments:** According to the IPCC, **keep warming below 1.5° C requires immediate and deep emissions reductions** across all sectors and regions.
- **Integrating extreme weather risk management and adaptation** into all social, economic, and environmental policy domains.
- **Heat Health Action Plans** that include early warning and response systems are effective adaptation options for extreme heat.
- **Establishing early warning systems** and strengthening risk communication between decision makers and local citizens.
- **Bridging financing gaps through innovative risk financing instruments** like micro-insurance, insurance, reinsurance, and national, regional, and global risk pools.
- **Climate-proofing of infrastructure** through combination of hard infrastructure-based responses and soft solutions such as individual and institutional capacity building and ecosystem-based responses.

Steps taken in India to tackle extreme weather events

- **Council on Energy, Environment and Water** carried a **first-of-its-kind district-level climate vulnerability assessment**, or Climate Vulnerability Index (CVI) to map regions vulnerable to extreme climate.
- **Guidelines and action plans for extreme events** like heatwaves, flooding etc. published by National Disaster Management Authority.
- **Early warning systems for floods and cyclones.**
- **Enhancement of Intended Nationally determined contributions.**

Related News: Climate Change and Indian Monsoon

- According to Indian Meteorological Department (IMD), **extreme events of floods and droughts in 2022** have strongly depicted how **global warming has been impacting Indian monsoon.**
- **Key changes in monsoon trends**
 - **Increase in fluctuations in monsoon**, resulting in both long dry periods and short spells of heavy rains.
 - **A shift in track of monsoon systems**, like low pressure and depression travelling south of their position.
 - ✓ As a result of this shift, States such as **Madhya Pradesh, Gujarat, Rajasthan and parts of Maharashtra** have been **recording excess rainfall this season.**
 - ✓ **West Bengal, Jharkhand and Bihar did not receive normal rain.**
 - **Monsoon rainfall became less frequent but more intense** in India during latter half of 20th century.
- **Consequences of altering monsoon**
 - **Uneven distribution of rains** along with **increasing temperatures and humidity** give rise to **pest attacks and diseases.**
 - Changes in track of monsoon systems **impact quantity as well as quality of Kharif crops**, particularly rice.
 - **Melting of glaciers** in Himalayan region.
 - **Increase in extreme weather events over entire South Asia** (recent flash floods/floods in India, Bangladesh, Pakistan and drought in China).

5.3. AIR POLLUTION POLICY

Why in news?

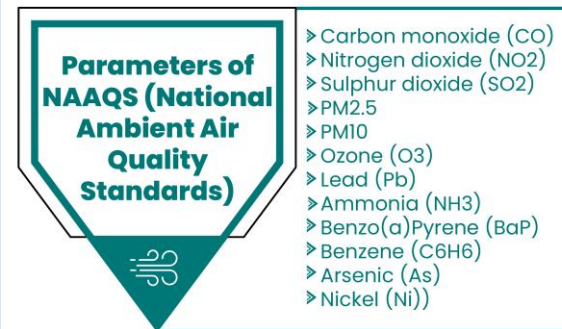
The Centre has set a **new target of a 40% reduction in particulate matter concentration** in cities covered under the **National Clean Air Programme (NCAP)** by 2026, updating the earlier goal of 20 to 30% reduction by 2024.

About NCAP

- It was launched in 2019 for reducing for comprehensive mitigation actions for prevention, control and abatement of air pollution.
- It initially envisaged to achieve **targets of 20 to 30 % reduction in Particulate Matter (PM10 and PM2.5) concentration by 2024** across the country taking 2017 as the base year.
- Under NCAP, **city-specific action plans have been prepared** which include measures for strengthening the air quality monitoring network, reducing vehicular and industrial emissions, increasing public awareness, etc.
- It is **implemented in 132 cities** in the country, including-
 - 123 cities (NACs) are identified under **NCAP based on non-conforming to National Ambient Air Quality Standards (NAAQS)** consecutively for five years.
 - 8 million Plus Cities (MPCs) those **identified by 15th Finance Commission (XV-FC)**, for receiving performance-based grant for air quality improvement.

Other efforts in India to tackle air pollution

- **Vehicular Emission:** Leapfrogging from BS-IV to BS-VI fuel standards from 2020 (2018 for Delhi),
 - Faster Adoption and Manufacturing of Electric Vehicles (FAME) -2 scheme.
 - Introduction of cleaner/alternate fuels like CNG, LPG, ethanol blending in petrol etc.
- **Industrial Emission:** Stringent emission norms for Coal based Thermal Power Plants (TPPs),
 - Shifting of brick kilns in Delhi-NCR to zigzag technology for reduction of pollution etc.
- **Air Pollution due to Dust and Burning of Waste:** Extended Producer Responsibility (EPR) for plastic and e-waste management etc.
- **Monitoring of Ambient Air Quality:** Expansion of air quality monitoring network of manual as well as continuous monitoring stations under programmes such as National Air Monitoring Programme (NAMP).
 - National Air Quality Index (AQI) for the effective communication of air quality status to people etc.
- **Monitoring the Implementation of NCAP: Portal for Regulation of Air-Pollution in Non-Attainment Cities (PRANA) a portal for monitoring implementation of NCAP** has been launched,
 - Implementation of Air Quality Early Warning System for Delhi, Kanpur and Lucknow etc.
- **Air quality standards:** NAAQS (National Ambient Air Quality Standards) are notified for **12 parameters (refer infographic)**.

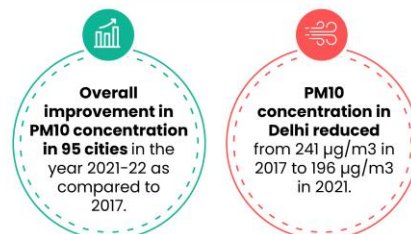


Challenges faced in implementation of NCAP

- **Inadequate number of monitoring systems:** In 2021, India had only 804 air quality monitors, which translates to about 0.14 monitors per million people.
 - This is well below the numbers for other countries such as China (1.24), the US (3.4), and Brazil (1.8).
- **Data-related implementation issues:** Hurdles like poor data capture due to substandard monitoring stations, dearth of data cleaning methods to fill gaps (missing/inaccurate data) in the monitoring system etc.
 - This leads to **development of ineffective and unscientific action plans** for controlling air pollution.
- **Underutilization of the funds allotted:** States utilised only 227.61 crore from 472.06 crore of total fund released between F.Y. 2019-20 and 2021-22.
- **Absence of a clear fiscal and funding strategy:** Budgetary allocations remain stagnant and inadequate, specifically for major urban centres like Delhi.

Performance of NCAP

ACHIEVEMENTS



FAILURES



- **Lacks teeth:** It has been implemented as a “cooperative and participatory” initiative rather than one with a legal mandate that can enforce strict compliance.
- **Issues in Boundary based approach:** NCAP requires cities to reduce pollution within their boundaries, but they cannot control emissions coming from outside.
 - E.g., stubble burning from neighbouring states contributes significantly to Delhi’s pollution.
- **Disbursement of performance-linked funds has considered only PM10 data:** It makes dust control the primary focus of clean air action diverting attention and resources from combustion sources including industry, vehicles and waste burning.
- **Lack of awareness** among people about ill effects of air pollution leading to sub-optimal on-ground implementation of cities action plans.

Way forward

- **Adopt a standardised method for assessing air quality trends:** India needs to strengthen its air quality monitoring mechanisms with strong data quality control and a standardised protocol for establishing air quality trends, especially for real time data.
- **Strong, coherent and coordinated fiscal response by the government** to ensure proper utilization and disbursal of funds catering to needs of the cities.
- **Providing legal mandate to targets** for ensuring compliance.
- **Catalysing action in the private sector to curtail air pollution:** Private sector can contribute to reduction in air pollution by-
 - designing and financing bold, cutting-edge innovations and unique technology solutions;
 - investing through the Corporate Social Responsibility (CSR) and
 - aligning their own practices and supply chains with the clean air agenda.
- **Invest in technologies** to monitoring, improve data collection and pollution forecasting technologies.
- **Improving Cross-stakeholder cooperation:** Cooperation forum can be created to bring together multiple stakeholders to consolidate existing knowledge and the resources of different agencies across states to identify and fund holistic solutions.
- **Increase public awareness** by effectively communicating the causal relationship between air pollution and the health of their families and their incomes.
 - Air pollution should be included in the syllabus from the primary level to make children understand and communities hold their elected representatives accountable.

Related News: Swachh Vayu Sarvekshan

- Ministry of Environment, Forest and Climate Change will launch **Swachh Vayu Sarvekshan** under National Clean Air Programme (NCAP).
- It will rank 131 cities in the country for implementing City Action Plans prepared NCAP for **reducing air pollution upto 40% by 2025-26.**
 - 131 cities are categorized into three groups based on population (population > 10 lakh, population between 3 to 10 lakh and population < 3 lakh).
- **For the survekshan cities are required to-**
 - **do the annual self-assessment** as per the framework provided on **PRANA online portal.**
 - **report implementation of activities and measures** taken in respect of solid waste management, road dust management, management of construction and demolition waste, control of vehicular emissions and industrial pollution.
- Based on the self-assessment and third party assessment, **3 best performing cities in each group will be given cash award.**

Significance of Swachh Vayu Sarvekshan

5.4. CHEETAH REINTRODUCTION

Why in news?

Eight wild African Cheetahs (5 female and 3 male) from Namibia, were recently introduced in Kuno National Park (KNP), Madhya Pradesh under **Project Cheetah**.

About Kuno National Park, Sheopur, Madhya Pradesh

- **River:** Perennial Kuno river
- **Forest Type:** Northern tropical dry deciduous forest
- **Flora and Fauna:** Trees like Kardhai, Salai, Khair etc.,
 - **Herbivores** include- sambar, nilgai, wild pig (*Sus scrofa*), chinkara, chousingha, blackbuck etc.,
 - **Carnivores** include leopard, sloth bear, striped hyaena, gray wolf, golden jackal, Indian fox etc.
- **Other important information:**
 - On its south-eastern side of the boundary, it forms a contiguous forest landscape with patchy connectivity to **Panna Tiger reserve (TR)** through the Shivpuri forest area.
 - **Ranthambhore NP and Kailadevi WLS** (both part of the Ranthambhore TR) are connected with it through good forest patches towards the north- western boundary from across the river Chambal.

LOCATION FOR CHEETAH REINTRODUCTION



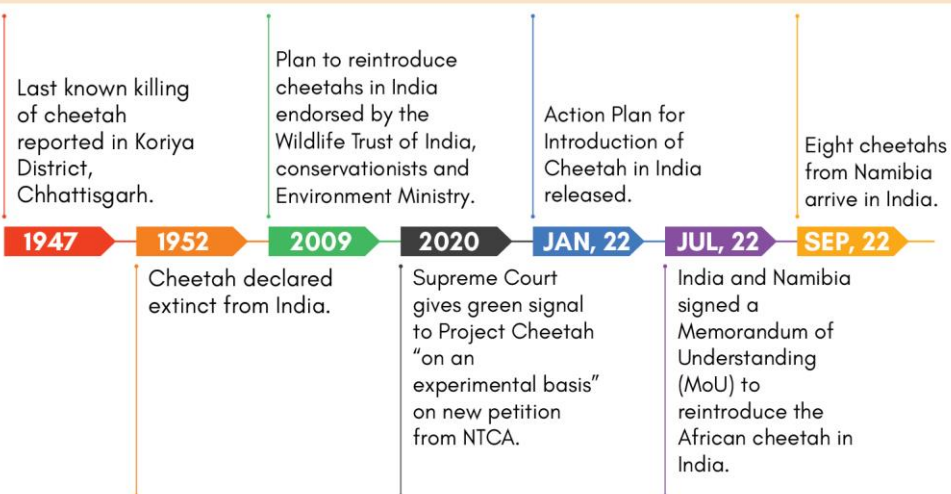
Reasons for choosing Kuno NP for cheetah reintroduction:

- **Suitable habitat:** Protected area with good water management, consisting mostly of open canopy type forest similar to grasslands.
- **Forms part of the larger Sheopur-Shivpuri dry deciduous open forest landscape** spanning an area of 6,800 km with current **estimated capacity to sustain 21 cheetahs** (36 cheetahs if restored).
- **Adequate prey base** which includes large population of wild animals like Chital and feral cattle left behind by people.
- **Devoid of any human settlements:** Only wildlife site in the country with a complete incentivized voluntary relocation of villages from inside the park.
- **Offers the prospect of housing four big cats of India** (tiger, lion, leopard and cheetah) and allowing them to coexist as in the past.

About Project Cheetah

- It is **world's first inter-continental large wild carnivore translocation project** and is a part of the centrally Sponsored Scheme- 'Project Tiger' of India.
- It aims to introduce African cheetah in India.
 - **Cheetahs are the only large wild mammalian species that went extinct since the India country's independence in 1947** due to large scale capture of animals from the wild for coursing, bounty and sport hunting, extensive habitat conversion and decline in prey base.
- **National Tiger Conservation Authority (NTCA)** is the nodal agency authorized by Ministry of Environment, Forest and Climate Change (MoEF&CC) for funding, supervision and hand holding of the project.

BRIEF HISTORY OF CHEETAHS IN INDIA: EXTINCTION TO REINTRODUCTION PLAN



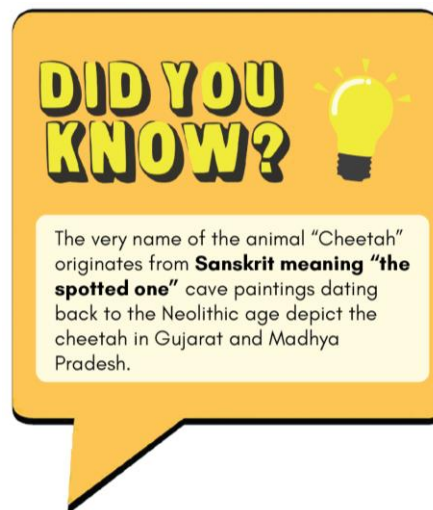
- The **Wildlife Institute of India (WII)**, national and international carnivore/cheetah experts/ agencies provide technical and knowledge support to the programme.
- Under the project, the **government plans to introduce at least 50 cheetahs** into various national parks over the next five years.
 - 12 more Cheetah are due to arrive from South Africa at KNP.

Significance of Cheetah Relocation

- **Establish viable cheetah metapopulation in India:** It will re-establish cheetah's functional role as a top predator, restoring historic evolutionary balance, leading to cascading impacts like-
 - **Better management and restoration of wildlife habitat** (grasslands, scrublands and open forest ecosystems).
 - **Conservation of cheetah's prey and sympatric endangered species.**
 - **Top-down effect of a large predator** that enhances and maintains the diversity in lower trophic levels of the ecosystems.
- **Resource mobilization:** Cheetah as a charismatic flagship and umbrella species can help to garner resources for restoring open forest and ecosystem services like soil moisture conservation, water security, etc.
- **Contributing to global conservation efforts:** Reintroducing cheetahs in India will help relieve pressure on the species by **creating additional habitat within its historical range.**
 - There are less than 7,000 adult cheetahs left in the wild globally, and they now inhabit less than 9% of their original range.
- **Enhance local community livelihoods** through eco-development and eco-tourism prospects.
 - Among large carnivores, conflict with human interests are lowest for cheetahs, as they are not a threat to humans and usually do not attack large livestock.
- **Contribute to climate change mitigation goals** by enhancing India's capacity to sequester carbon through ecosystem restoration activities in cheetah conservation areas.

Concerns regarding relocation

- **Exaggerated and unfeasible conservation claims:** At low numbers, the introduced cheetahs might not be able to effectively play the expected role of a top predator to impact ecosystem function.
- **750 sq-km Kuno national park could limit their movement:** Unlike other large cats, free-ranging cheetahs are characterised by disproportionately large home ranges and very low population densities.
- **Human-animal conflict:** Due their homing instincts, diurnal nature and large home ranges, cheetahs are likely to stray outside of territory and come in contact with humans.
 - They also face **anthropogenic threats** from snaring for bush meat and retaliatory killings due to livestock depredation.
- **Coexistence of large predators:** Cheetahs could face attacks from or be forced to compete for food with aggressive predators such as tigers and leopards.





Measures taken for ensuring success of the programme

- **Soft-release for acclimation to local environment:** Cheetahs will be placed in a quarantine period for a month, in an electronically-fenced area of 500 hectares, before being released into the wild.
- All cheetahs were **vaccinated** and **fitted with Satellite radio collars** for monitoring them at all times.
- **Action Plan for Introduction of Cheetah** prepared based on the modern scientific approach recommended by the latest International Union for Conservation of Nature (IUCN) guidelines.
- **Public awareness campaigns for the local communities:**
 - **Cheetah mitras**, dedicated team of volunteers, trained by the forest department trained to create awareness among the villagers about protecting cheetahs.
 - Local mascot named **Chintu Cheetah to sensitise locals.**
- **Cheetah Task Force** constituted by MoEF&CC for a period of two years to monitor Cheetah introduction in Kuno National Park, Madhya Pradesh, and other suitable designated areas. Its functions will include-
 - **Reviewing, progressing and monitoring the health status of Cheetah**, upkeep of the quarantine & soft release enclosures, adherence to the defined protocols by forest & veterinary officials, etc.
 - **Suggesting and advising** on development of tourism infrastructure in the fringe areas of KNP.
 - **Regularly interacting with Cheetah mitras** and local communities for their awareness raising etc.

- **Difficulties in adaptation:** Cheetahs may find it difficult to adapt to India's climatic conditions.
- **Risk of diseases:** There is a risk of disease spread to both the individual animals that are being introduced and to the wildlife species which inhabit the site.
- **Displacement of local communities:** Several villages have been relocated for the project and introducing more Cheetahs may require more relocation.
- **Lack of experience among authorities** or understanding of cheetahs in the wild.

Why are Cheetahs being sourced from Africa?

- Sourcing critically endangered Asiatic cheetahs from Iran **can have detrimental impacts on the survival of this sub-species** as less than 100 of these animals survive in Iran today.
- With high population, **Southern Africa can provide India with substantial numbers** of suitable cheetah for several years.
 - Namibia has the highest cheetah population.
- Cheetahs from Southern Africa have the **maximum observed genetic diversity among extant cheetah lineages**, an important attribute for a founding population stock.
- **African cheetahs are found to be ancestral to all the other cheetah lineages** including those found in Iran.
- **African Cheetah's Characteristics:**
 - It is the **world's fastest land mammal** and are capable of running at **80 to 128 km/h**.
 - They are **diurnal** i.e., they hunt during the day.
 - Unlike other big cats (lions, tigers, leopards, and jaguars) cheetahs **don't roar**.
 - Their **gestation period is 93 days**.
 - **Live in three main social groups:** females and their cubs, male coalitions, and solitary males.
 - **Females lead a nomadic life** searching for prey in large home ranges, males are more sedentary and instead establish much smaller territories.
 - ✓ Average female home ranges have been estimated to be about 750 sq km.

| | African Cheetah | Asiatic Cheetah |
|---------------------------------|--|--|
| Pictorial Representation |  |  |
| IUCN Status | Vulnerable | Critically Endangered |
| CITES Status | Appendix I | Appendix I |
| Distribution | Africa (Northwest Africa, East Africa, and Southern Africa) | Only few left in Iran |
| Physical Characteristics | Bigger in size as compared to Asiatic Cheetah, slightly bigger build and sturdy legs and neck. | Slightly smaller and slender than the African Cheetah. Their neck is much smaller and slender. Also, their legs are slender. |
| Food Intake | Diverse diet due to bigger habitat | Limited source especially medium sized prey like Chinkara, Gazelle etc. |

Way Forward

- **Following thorough disease screening processes and protocols** for managing threats from infections as part of the cheetah re-introduction plans.
- **Counselling of Local communities** on living in harmony with wildlife, particularly predators like the cheetah through proper training and communications programmes.
- **Regular in-house training** of the forest officials, veterinary team, frontline staff and cheetah tracking teams can be organized periodically.
 - Cheetah managers and biologists from Africa can be invited to impart training of Indian counterparts.
- **Conflict Management** by creating sustainable jobs and business opportunities for the local people, ensuring rehabilitation, undertaking reparative measures such as compensation schemes for damage to crop or livestock etc.
- **Restoration of peripheral ecosystems** for expansion of habitat.
- **Regularly monitoring and reviewing various aspects project** including prey populations, disease incidence, anthropogenic disturbances etc.

5.5. PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Why in News?

India hosted the Ninth Session of the Governing Body (GB9) of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).

Major decisions taken at GB9

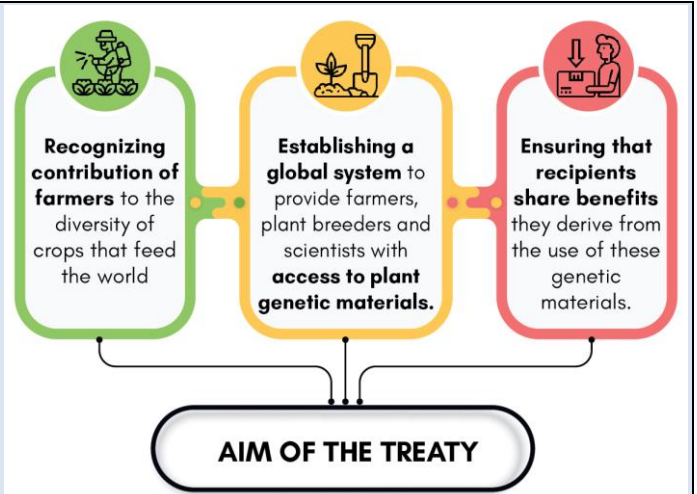
- In a historical first, Federation of Seed Industry of India (FSII) contributed Rs **20 lakhs to the Benefit-Sharing Fund (BSF)**.
- **India appointed as Co-Chair** of the Working Group on Enhancement of Multilateral System of Access and Benefit-sharing (MLS).
- **Consensus on implementation of Farmers Rights** reached after extensive negotiations at GB9.
 - GB9 considered the options **for encouraging, guiding and promoting the realization of Farmers' Rights**.
- Contracting Parties acknowledged the intervention made by India, and supported by many African nations, regarding **effect due to institutional reform within the CGAIR system** (a global research partnership for a food-secure future) on funding of gene-banks globally.
- Decisions on issues such as the multilateral system (MLS) of access and benefit sharing (ABS) and digital sequence information (DSI) were deferred for later.

More about News

- GB is the **highest organ of ITPGRFA** and composed of representatives of all Contracting Parties.
- Its **basic function is to promote the full implementation of the Treaty**.

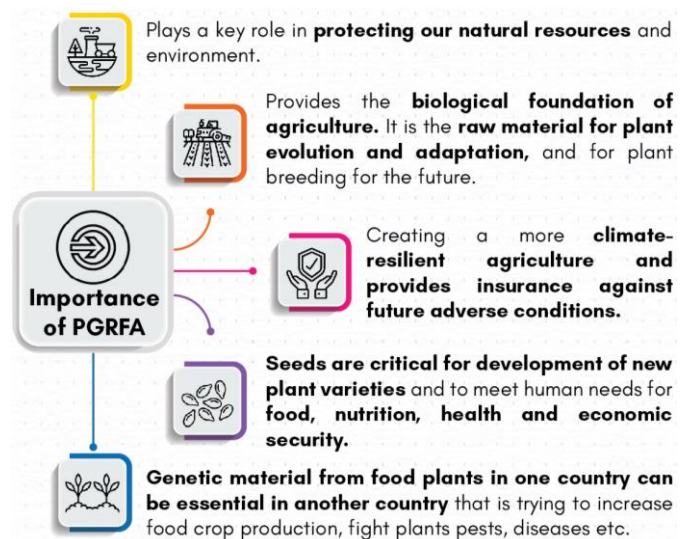
About International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)

- ITPGRFA, also known as seed treaty, is a **major international agreement to conserve, use and manage Plant Genetic Resources for Food and Agriculture (PGRFA)** around the world for benefit of people everywhere.
- It is a **legally binding agreement** that was adopted by 31st session of **Food and Agriculture Organization (FAO)** in 2001 and **entered into force in 2004**.
 - **India is a party** to the treaty.
- It also **provided international legal framework** needed for **establishment of Svalbard Global Seed Vault** in Norway.
- **Funding for the treaty comes from its Contracting Parties** and from FAO.



About Plant Genetic Resources for Food and Agriculture (PGRFA)

- **Plant genetic resources are any plant materials**, such as seeds, fruits, cuttings, pollen, and other organs and tissues **from which plants can be grown**.
- PGRFA include the **traditional crop varieties and their wild relatives**, modern cultivars, breeding lines etc which **provide food, feed for domestic animals, fibre, clothing, shelter, medicine and energy**.
- PGRFA can be used to develop new varieties or improve the quality and productivity of crops.
- **National Bureau of Plant Genetic Resources (NBPGR)**, established in 1976, is the **nodal organisation in India for planning, conducting, promoting, coordinating and lending all activities concerning plant**.



Threats to PGRFA conservation and utilisation

- **Population growth and Urbanization:** As human population break new grounds this could lead to over exploitation of PGR as witnessed during the Green Revolution.
- **Pollution:** Soil and atmospheric biodiversity including microbial diversity and the diversity of pollinators are also under threat of pollution.

- **Climate Change:** Changes in rainfall patterns and extreme weather events are likely to diminish crop yields in many areas.
- **Invasive alien species (IAS):** IAS are species, native to one area or region, that have been introduced into an area outside their natural distribution, either by accident or on purpose, and which have colonized or invaded their new home, threatening biological diversity, ecosystems and habitats, and human well-being.
- **Genetic vulnerability and erosion:** It result when a widely planted crop is uniformly susceptible to a pest, pathogen or environmental hazard resulting in changes to genes controlling important traits.
- **Patent rights:** Presently, there is an imbalance between Intellectual property (IP) rights provided to breeders of modern plant varieties and the rights of farmers who were responsible for supplying such varieties.

| Technique for protecting plant varieties | | |
|--|---|--|
| Technique | Benefits of the technique | Issues with the technique |
| Field gene bank | <ul style="list-style-type: none"> • Simple and traditional preservation strategy • Direct evaluation and characterisation • Seasonal accessibility and availability • Natural selection pressure | <ul style="list-style-type: none"> • Accumulation of mutations and endophytic organisms • Exposure of adverse weather conditions • Exposure to pathogens and insects • Plant ageing; Handling errors |
| In vitro gene bank | <ul style="list-style-type: none"> • Virus elimination • Immediate accessibility • Immediate availability • High multiplication rate • Low space requirements • Precise environment modulation • Medium term storage, < 2 years | <ul style="list-style-type: none"> • Plant ageing • Handling errors • Soma clonal variations • Specific protocol development • Infestation of insects (mites, thrips, other arthropods) • Contamination with fungi, bacteria & endophytic organism |
| Cryo bank | <ul style="list-style-type: none"> • Minimum space requirements • Low long-term costs • High genetic stability • Long-term storage, >100 years | <ul style="list-style-type: none"> • Restricted availability • Restricted accessibility • Access to liquid nitrogen • Specific protocol development • High initial workload to cryopreserve clonal plants |

Way Forward

- **Constructing a comprehensive information retrieval system** for plant genetic resources needs to be constructed and development of monitoring and early warning systems for loss of plant genetic resources would be a plus.
- Using techniques like **in-vitro genebank, Field genebank (Ex-situ) and cryobank** (refer image) for protecting plant varieties.
- **Developing an understanding of the extent and distribution of diversity in plant species** and ecosystems is pertinent and this can be achieved through efficient survey, inventory, appropriate research, field studies and analysis.
- **On-farm management and improvement of plant genetic resources** should be supported and this will require integrated approaches combining the best of traditional knowledge and modern technologies.
- **Providing better and more accessible documentation** to breeders, farmers, and indigenous and local communities to make plant diversity more useful and valuable.

GLOSSARY

Multilateral System of Access and Benefit-sharing (MLS)

- MLS is a **global system that enables countries to exchange much-needed plant genetic material** with one another.
- Benefit-sharing part includes **financial and non-financial** support for PGRFA conservation activities around the world.

Benefit-sharing Fund (BSF)

- It **supports agricultural projects for farmers, public institutions and others in developing countries** to conserve and use PGRFA to improve food crop production, fight plant pests and adapt to the effects of climate change.
- BSF **supports projects involving smallholder farmers and local communities.**

Governing Body

- It is the **highest organ of ITPGRFA** and composed of representatives of all Contracting Parties. Its **basic function is to promote the full implementation of the Treaty.**

5.6. BLUE TRANSFORMATION

Why in news?

The Food and Agriculture Organization (FAO) released a document titled 'Blue Transformation - Roadmap 2022–2030'.

More on the news

- The document outlines a roadmap for the transformation of aquatic food systems, providing a compass for the FAO's work on aquatic food systems for the period 2022–2030
- It aligns with the 2021 Declaration for **Sustainable Fisheries and Aquaculture of the Committee on Fisheries (COFI)** of the FAO and **FAO's Strategic Framework 2022–2031**.

About Declaration for Sustainable Fisheries and Aquaculture of the FAO Committee on Fisheries (COFI)

- It was developed to mark the **25th Anniversary of the FAO Code of Conduct for Responsible Fisheries**, with two specific objectives-
 - To **acknowledge the achievements of the fisheries and aquaculture sector** since the endorsement of the Code.
 - To **gather collective momentum in identifying and tackling the challenges and opportunities** ahead to secure the long-term sustainability of the sector.
- **COFI is a subsidiary body of the FAO Council**, established by the FAO Conference in 1965.
 - It is **the only global inter-governmental forum where FAO Members** meet to review and consider the issues and challenges related to **fisheries and aquaculture**.

About FAO Strategic Framework 2022-31

- It was developed in the context of major global and regional challenges in the areas of FAO's mandate, including the COVID-19 pandemic.
- It articulates FAO's **vision of a sustainable and food secure world for all, in the context of the Agenda 2030 for Sustainable Development** through the transformation to more efficient, inclusive, resilient and sustainable agri-food systems.

What is Blue Transformation?

- Blue Transformation is a targeted effort by which agencies, countries and dependent communities, use existing and emerging knowledge, tools and practices **to secure and sustainably maximize the contribution of aquatic (both marine and inland) food systems (AFS) to food security, nutrition and affordable healthy diets for all**.
 - AFS encompass the **entire range of actors and their interlinked value-adding activities** involved in the production, aggregation, processing, distribution, consumption and disposal of aquatic food products.
 - It also involves parts of the broader **economic, societal and natural environments in which they are embedded** (e.g., open oceans, coastal waters, wetlands, lakes, rivers, ponds, raceways, fields and tanks).

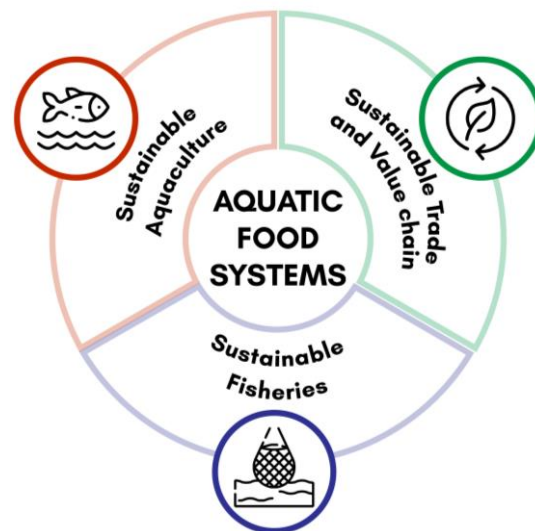
Outcomes envisioned in Blue Transformation Roadmap

- **Reduce global fish loss and waste by half by 2030.**
- **100% of fisheries under effective management.**
- **All illegal, unreported and unregulated activities to be phased out.**
- **At least 35% growth in global sustainable fish production by 2030.**
- **Achieve full and productive employment and decent work in the aquaculture sector for all women and men by 2030.**
- **Significantly increase global per capita fish consumption**, especially across global South.
- Current and potential exporters in developing countries to **comply fully with import market requirements.**
- **All forms of discrimination and abuse against women** throughout the value chain to be **phased out.**

Blue Transformation Roadmap provided by FAO

The roadmap provides following priority actions for achieving the objectives of Blue transformation-

BLUE TRANSFORMATION



- **Effective Governance and policies:**
 - Ensure effective global and regional cooperation, planning and governance to enhance AFS development and management.
 - Increase capacity and inclusive access to social protection, decent working conditions, and safety at sea of fishers and fish workers.
- **Inclusivity and equity:**
 - Provide support to small and medium-scale fish farmers in accessing financing, knowledge, data and information for the development of profitable aquaculture enterprises.
 - Ensure a growing participation of women in AFS related decision-making processes and their access to leadership, technologies, information, resources, and infrastructure.
- **Sustainability:**
 - Facilitate the implementation of sustainable aquaculture practices that support biodiversity, facilitate ecosystem restoration and build resilience to stressors.
 - Promote innovative technology and management like climate-smart aqua-business for the expansion of sustainable and resilient aquatic food systems.
- **Enhancing trade:**
 - Develop efficient value chains that increase profitability, reduce food loss and waste and are transparent, inclusive and gender-equitable.
 - Ensure fisheries and aquaculture products access international markets more effectively.
- **AFS for food and nutrition:**
 - Increase capacity to improve national and local food control and food safety management including prevention of antimicrobial resistance.
 - Encourage consumption of sustainable aquatic food, by promoting aquatic foods as part of healthy diets and inclusion of aquatic foods in national food security and nutrition policies.



Steps taken in India towards Blue transformation

- **Pradhan Mantri Matsya Sampada Yojana (PMMSY):** It aims to bring about ecologically healthy, economically viable, and socially inclusive development of the Fisheries sector of India.
 - **River Ranching Programme:** It was introduced as special activity under PMMSY scheme for sustainably augmenting and enhancing the fish production and productivity.
- **Centrally Sponsored Scheme on Blue Revolution: Integrated Development and Management of Fisheries** focuses mainly on increasing fisheries production and productivity from aquaculture and fisheries resources, both inland and marine.
- **Fisheries and Aquaculture Infrastructure Development Fund (FIDF):** It is a dedicated fund created for providing interest subvention for development of identified fisheries infrastructure facilities.
- **Inclusion of fishers and fish farmers under Kisan Credit Card (KCC) Scheme.**
- **Matsya Setu Apps:** A self-learning App with species-wise/subject-wise online course modules explained by renowned aquaculture experts.
- **National Policy on Marine Fisheries, 2017** that provides the guidance to explore and sustainably use oceanic fishery resources in the Exclusive Economic Zone of India.

5.7. NEWS IN SHORTS

5.7.1. BREAKTHROUGH AGENDA REPORT 2022

- It has been released by the **International Energy Agency, the International Renewable Energy Agency** and the **UN Climate Change High-Level Champions**.
 - This is a **first-of-its-kind annual progress report**, requested at the **UN Climate Change Conference COP26 in November 2021** as part of the launch of the Breakthrough Agenda (BA).
- The BA currently **covers more than 2/3rd of the global economy**, including G7, China and India.
 - BA aims to **align actions and coordinate investment** across **five key sectors** (account for nearly 60 % of global greenhouse gas emissions);
 - ✓ Power, road transport, steel, hydrogen and agriculture.
- **Sector-wise recommendations**
 - **Power-** Reassess the **opportunities for cross-border and regional power interconnection** and smart grids to support the transition to clean power systems.
 - **Road transport-** Agree on a **timeline by which all new road vehicle sales should be zero emission**.
 - **Steel-** Agree on **common definitions for low emission and near-zero emission steel**.
 - **Hydrogen-** **International standards and associated certification schemes** for renewable and low carbon hydrogen.
 - **Agriculture-** Agree on international standards for **monitoring and reporting on the state of natural resources on which agriculture depends**.

5.7.2. WORLD WATER DEVELOPMENT REPORT 2022

- **Recently, The World Water Development Report of 2022 'Groundwater: Making the invisible visible' was released by UNESCO.**
 - It was officially **launched by the UNESCO Director-General at the 9th World Water Forum in Dakar, Senegal**.
 - It has **encapsulated global concern over the sharp rise in freshwater** withdrawal from streams, lakes, aquifers, and human-made reservoirs leading to water scarcity being experienced in different parts of the world.

Key findings of the report

- **Significance**
 - **Groundwater provides half of the volume of water withdrawn for domestic use** by the global population.

- **Challenges**
 - It is often **poorly understood, and consequently undervalued, mismanaged and even abused**.
- **Recommendations**
 - There is a need to manage Groundwater sustainably, with the help of an **enabling and effective legal and institutional environment**.
 - It suggests **codifications of the international customary law** principles that govern the transboundary aquifers (engaged by the international boundary lines of States).
 - ✓ The countries are invited to commit to **developing an adequate and effective framework for groundwater governance** that includes, laws, regulations, and their enforcement.
- It promotes, **SDG 6 'Ensure availability and sustainable management of water and sanitation for all'**.



5.7.3. ONE WATER APPROACH

- **One Water approach, also referred to as Integrated water resources management (IWRM), is an integrated planning and implementation approach to managing finite water resources for long-term resilience and reliability.**
 - It **recognizes all urban water supplies as connected resources** – surface water, groundwater, stormwater, and wastewater.
 - **Water is recycled and reused several times** in IWRM.
 - It **brings all diverse stakeholders together** to advance common-ground solutions to **combat water and urban ecology challenges**.

- It is **multi-faceted approach** meaning that our **water-related investments** should provide **economic, environmental, and societal returns**.

5.7.4. URBAN WATERBODY INFORMATION SYSTEM (UWAIS)

- The UWAIS portal has been launched by the **Ministry of Housing & Urban Affairs** with help from **National Remote Sensing Centre, Hyderabad**.
 - It will provide **satellite images of water bodies to various cities to plan their rejuvenation**. 219 cities have been handed over UWAIS.
- The Ministry has also **shortlisted 76 start-ups** under the 'India Water Pitch-Pilot-Scale Start-Up Challenge'.
 - They will be provided **financial support of up to ₹ 20 lakh each** to work in the fields of **water supply, used water management, water body rejuvenation, etc.**

5.7.5. SWACHH SUJAL PRADESH

- **Andaman and Nicobar (A&N) Islands** have become **India's first Swachh Sujal Pradesh**.
- Swachh Sujal Pradesh **certification (by Ministry of Jal Shakti)** has three important components as:
 - **Safe and secure drinking water supply** and management.
 - **ODF (open defecation free) Plus:** ODF Sustainability and Solid and Liquid Waste Management (SLWM), and
 - **Cross-cutting interventions** like convergence, IEC (Information, Education Communication), action planning, etc.
- **All villages on A&N Islands** have received **Har Ghar Jal certification**.

5.7.6. JALDOOT APP

- **Developed by:** Ministry of Rural Development.
- The app will help in **identifying the ground water level in selected villages**.
- For this, app will enable **Gram Rojgar Sahayak (GRS)** to **measure the water level of selected wells twice a year (pre-monsoon and post-monsoon)**.
- **Data collected could be utilised as part of the Gram Panchayat Development Plan (GPDP)** and Mahatma Gandhi NREGA planning exercises.

5.7.7. GLOBAL ALLIANCE FOR INDUSTRY DECARBONIZATION

- International Renewable Energy Agency (IRENA), co-founding partner Siemens Energy, and 13 companies including Tata Steel and Jindal Steel Works have

launched **Global Alliance for Industry Decarbonization**.

- New Alliance aims to **accelerate net-zero ambitions and decarbonization of industrial value chains** in pursuit of Paris Agreement climate goals.
- It will **strengthen dialogue and coordinate action by industrial stakeholders** from across the public and private sectors.
- First meeting of Alliance, which was **formed under Bali Declaration, is planned to take place at COP27 in Sharm El Sheikh, Egypt in November 2022**.
- Decarbonisation refers to the **process of reducing carbon dioxide (CO2) emissions resulting from human activity** in atmosphere.
 - It plays a very important role in **limiting global warming**.
 - **Decarbonization would result in**
 - ✓ **Low carbon replacement with alternative fuels, electrification, renewable energy, etc.**
 - ✓ **Supply chain neutrality** with lifecycle assessments, sustainable procurement practices, etc.
 - ✓ **Emission balancing** with the help of carbon offset projects.
- **Steps taken by India**
 - **Perform, Achieve, and Trade (PAT) scheme** to reduce energy use across cement, iron, and steel, and chemicals industries.
 - **National Solar Mission** to promote solar power in India.
 - **LED lighting programme** limits emissions.

| PRIORITY SOLUTIONS TO DECARBONIZE INDUSTRY | |
|--|--|
| <p>Increase energy efficiency to reduce costs and emissions</p>  | <p>Improve energy efficiency by setting targets, monitoring use, retrofitting technology, and increasing RDD&D*</p> |
| <p>Replace fossil fuels with low-to zero-carbon energy sources</p>  | <p>Electrification for low and medium temperature process</p> <p>Clean Hydrogen for high temperature process</p> |
| <p>Install carbon capture and storage technology to capture emissions</p>  | <p>Carbon capture, use and storage for point source emissions (fuel combustion and industrial process emissions)</p> |

*Research, Design, Development and Demonstration

5.7.8. MOU BETWEEN INTERNATIONAL SOLAR ALLIANCE (ISA) AND INTERNATIONAL CIVIL AVIATION ORGANISATION (ICAO)

- MoU was signed to **check growth of CO2 emissions in the sector** and idea of ICAO becoming a partner organisation of ISA was mooted by India.
 - Aviation sector is responsible for around **2.5% of global CO2 emissions**.

- In 2015, **India's Cochin International Airport** became **world's first fully Solar powered airport**.
- India has a target of installing **175 GW of renewable energy by 2022**, and **Net Zero Carbon goal in 2070**.

● **About ISA and ICAO**

| ISA | ICAO |
|--|---|
| <ul style="list-style-type: none"> ● ISA is an alliance of 121 signatory countries and 32 partner organizations including many UN organizations. ● ISA is a treaty based inter-governmental organization that acts as coalition of solar-resource-rich countries (which lie either completely or partly between Tropic of Cancer and Tropic of Capricorn) to address their special energy needs. ● Launched at Paris Climate Change Conference in 2015 by France and India. ● Aims to pave way for future solar generation, storage and technologies for Member countries' needs by mobilising over USD 1000 billion by 2030. ● ISA is the first international organization headquartered in India. | <ul style="list-style-type: none"> ● Established under Convention on International Civil Aviation, also known as 'Chicago Convention'. ● Funded and directed by 193 national governments. ● Committed towards reducing carbon emissions in aviation sector. ● Functions <ul style="list-style-type: none"> ○ Maintain ICAO Secretariat supporting diplomatic interactions ○ Research new air transport policy and standardize innovations as directed and endorsed by governments through ICAO Assembly. |

5.7.9. UNITED IN SCIENCE REPORT

- **Report is a multi-organization** (WMO, UNEP etc.) compilation of most recent science **related to climate change, impacts and responses**.
- **Key highlights**
 - Global fossil **carbon dioxide (CO₂) emissions in 2021 returned to pre-pandemic levels** of 2019.
 - **2015 to 2021 were the warmest on record**.
 - **Climate change made extreme heat and floods worse in 2022**.
 - **By 2050, at least 1.6 billion people** around the world will be regularly **exposed to 3-month average temperatures** reaching at least **35°C**.

5.7.10. GLOBAL OCEAN OBSERVING SYSTEM (GOOS) REPORT CARD, 2022

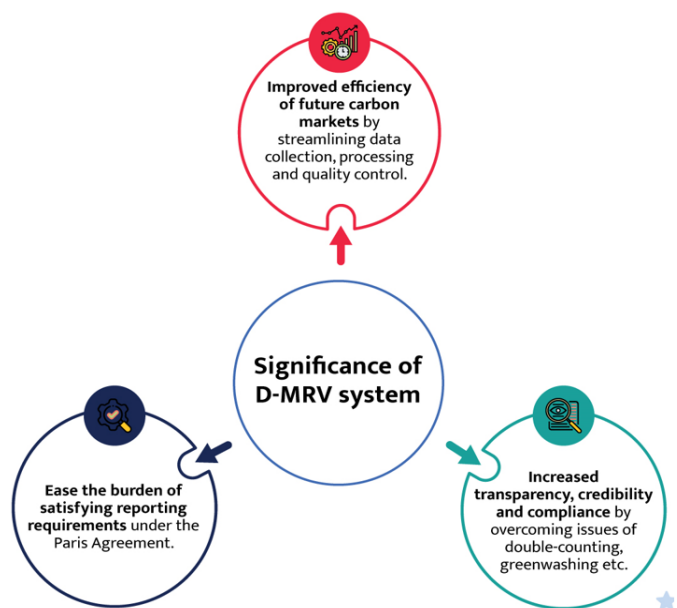
- **World Metrological Organisation** recently released **Global Ocean Observing System (GOOS) Report Card, 2022**.

- Report has been **released annually since 2017 in partnership with Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO)** and other GOOS partners.
 - **GOOS** is a permanent **global system for observations, modeling, and analysis of marine and ocean data**.
- It **highlighted biological observations for the first time and identifies gap** in system.
 - It pointed at **inequality in operational services** across oceans like **Indian, Atlantic and Southern Ocean**.
- **Key findings**
 - Oceans take up **26% of 40 gigatons of carbon** emitted to **atmosphere annually (48% remains in atmosphere while terrestrial biosphere takes rest)**.
 - Only **5% cent of platforms** at sea carry **biogeochemical sensor**, including carbon dioxide sensors.
 - **Argo profiling float array is providing 15% less data** as compared to pre-pandemic.
- **Recommendations**
 - **Investment** in strengthening capacity to collect data.
 - **Ensure access to FAIR data** (findability, accessibility, interoperability and reusability).
 - **Early warning systems are essential to reduce coastal zones risks** and communities which are at risk from rising sea levels.
 - **Improve forecasting of ecosystem services** provided by phytoplankton.
- **International Argo program**
 - It maintains **global array of about 3,800 floats that measure pressure, temperature and salinity of upper 2,000 metres** of world's ocean.
 - This is a **major component of both GOOS and Global Climate Observing System**, providing near-real time data (on temperature, salinity) for ocean and atmospheric services.

5.7.11. DIGITAL MONITORING, REPORTING AND VERIFICATION (D-MRV) SYSTEMS

- With growing **interest of countries to participate in carbon markets** to meet their **climate change goals**, innovative **Digital Monitoring, Reporting and Verification (D-MRV)** are evolving to track reductions in greenhouse gas (GHG) emissions.
 - The increased interest is due to **GHG emissions targets for developed as well as developing countries** under the **Paris Agreement** unlike the

- Kyoto Protocol** with targets for **developed countries** only.
 - Carbon markets are **trading systems in which carbon credits are sold and bought.**
 - One tradable carbon credit equals one tonne of carbon dioxide or the equivalent amount of a different greenhouse gas reduced, sequestered or avoided.
 - D-MRV systems represent the **first step in end-to-end digitalization of post-2020 carbon markets.**
 - Digital-MRV (D-MRV) Systems** are based on AI, machine learning, blockchain, smart sensors, drones etc.
 - Key barriers to D-MRV systems**
 - The cost of emerging technologies** can be prohibitive
 - D-MRV systems could capture sensitive data**, necessitating additional privacy controls to be put in place
 - Developing countries often **lack capacity to use emerging digital technologies.**



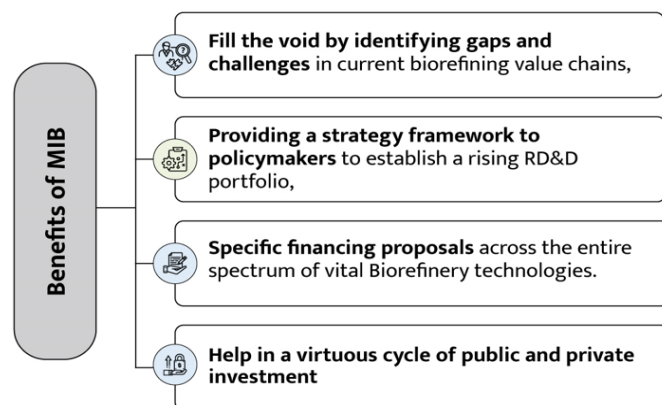
5.7.12. CARBON CAPTURE AND STORAGE (CCS)

- Norway is building **world's first open-access CCS infrastructure** on Norway's North Sea coast.
 - It will allow any emitter that has captured his CO2 emissions to deliver that CO2 **for safe handling, transport and storage.**
- CCS is a **way of reducing carbon emissions**, which could be key to helping to tackle global warming.
- It's a three-step process**, involving:
 - capturing CO2 produced by power generation or industrial activity;
 - transporting it;
 - then storing it deep underground.

- Also, there is a **related concept of Carbon Capture Utilisation and Storage (CCUS)** in which along with storing carbon, it could be re-used in industrial processes.

5.7.13. INNOVATION ROADMAP OF THE MISSION INTEGRATED BIOREFINERIES" (IRMIB)











- India announced launch of "Innovation Roadmap of the Mission Integrated Biorefineries" (IRMIB) at Global Clean Energy Action Forum.
- IRMIB is developed by co-leads from Brazil, Canada, UK and European Commission.** IRMIB aims to **fill the void by:**
 - identifying gaps and challenges in current biorefining value chains,**
 - prioritising Eight key actions to support the Mission,
 - guiding the Mission's overall path in achieving its goal.
- Mission Integrated Biorefineries (MIB) is the 7th mission under Mission Innovation (MI)** which was launched in April 2022.
 - MI is a global initiative catalyzing a decade of action and investment** in research, development and demonstration (RD&D) to make clean energy affordable, attractive and accessible for all.
 - MI consists of 22 countries and EU. **India is a founding member.**
- MIB aims at **greater international collaboration and financing for Energy RD&D** during the next five years.
 - Goal:** To **develop and demonstrate innovative solutions to accelerate the commercialization of integrated biorefineries.**
 - Target:** To replace **10% of fossil-based fuels, chemicals and materials with bio-alternatives by 2030.**
 - It **prioritizes eight collaborative actions** organized around **3 Pillars of-**
 - ✓ **Supporting Research, Development and Demonstration.**
 - ✓ **Accelerating Pilots and Demonstrations.**
 - ✓ **Improving Policy and Market Conditions.**



5.7.14. RENEWABLE ENERGY (RE) AND JOBS ANNUAL REVIEW 2022 REPORT BY IRENA

- The report published by the **International Renewable Energy Agency (IRENA) and the International Labour Organization**, provides the latest estimates of renewable energy employment globally.
- **India related findings**
 - Reaching India’s goal of 500 GW of non-fossil-fuel energy sources by 2030 **could create 3.4 million new job opportunities**.
 - **India accounted for about 18% of global hydropower employment**, followed by Brazil.
- **Other Key findings**
 - RE sector employed **12.7 million people across the world in 2021**.
 - **Solar energy was found to be the fastest-growing sector**.
 - The **share of women in the Decentralised Renewable Energy (DRE) workforce is still low**, particularly for skilled jobs.
 - Report highlights **issues of job quality and labour standards in the mining and processing of raw materials inputs** (upstream) and in the handling of materials once renewable energy generating facilities are decommissioned (downstream).
 - **Trade disputes and geopolitical rivalries are reinforcing interest** in localisation of supply chains, both to enhance resilience in the face of external shocks and to boost domestic value creation and jobs.

Estimated number of direct and indirect jobs in renewable energy, by industry, 2020–2021 (thousand jobs)

| | |  India |
|---|---------------------------|--|
|  | Solar PV | 217 |
|  | Liquid biofuels | 35 |
|  | Hydropower | 414 |
|  | Wind power | 35 |
|  | Solar heating and cooling | 19 |
|  | Solid biomass | 58 |
|  | Biogas | 85 |
|  | Geothermal energy | |
|  | CSP | |
| | Total | 863 |

5.7.15. HYBRID POWER PLANT

- Adani Green has commissioned the **world's largest 600 MW Solar and 150 MW wind power project in Jaisalmer**.
- Hybrid Power Plants are those power plants which **generate electricity from two or more sources, usually renewable, with one connection point**.
 - E.g. Solar + Wind, Solar + Hydraulic, Solar + Biomass etc.
- **Benefits of Hybrid Power Plants:** Reduced intermittency of renewable energy power, improved supply stability, increased capacity factor and optimization of transmission network utilization etc.
- **Negatives:** High installation cost, complicated controlling process etc.

5.7.16. DARK SKY RESERVE

- **Department of Science & Technology has announced** setting up of **India’s first dark sky reserve at Hanle in Ladakh** as a part of **Changthang Wildlife Sanctuary**.
 - It will be **one of the world’s highest-located sites** for optical, infra-red, and gamma-ray telescopes.
 - It will **promote astronomy-tourism**, giving a boost to local tourism and economy through science.
- **Dark Sky Reserve is a place** that has policies to ensure that a **tract of land or region has minimal artificial light interference**.
 - **International Dark Sky Association**, a U.S.-based non-profit, **designates places** as International Dark Sky Places, parks, sanctuaries and reserves, **depending on criteria they meet**.
- **About Hanle**
 - It is **located in Ladakh’s cold desert region** – away from any form of human disturbance.
 - **Cloudless skies and low atmospheric water vapour** make it one of the best sites in world for astronomical observations.
- **Indian Astronomical Observatory (IAO)**, high-altitude station of Indian Institute of Astrophysics, **is also located** atop Mt. Saraswati in Nilamkhul Plain **in the Hanle Valley**.
 - **Other Prominent telescopes at IAO:** Himalayan Chandra Telescope, High Energy Gamma Ray telescope (HAGAR), Major Atmospheric Cherenkov Experiment Telescope (MACE), GROWTH etc.

Changthang Wildlife Sanctuary

- It is **located in the Ladakhi Changthang Plateau**.
- It is **home to highest lake on earth, Tso Moriri**.
- It is also believed to **include the world's highest village, Korzok Village**.
- Species found include **snow leopard, Tibetan wolf, wild yak, bharal, brown bear** etc.

5.7.17. MONTREAL PROTOCOL

- International Day for the Preservation of the Ozone Layer was celebrated on 16 September.
 - **Theme for the 2022** is Montreal Protocol@35: global cooperation protecting life on earth, **recognising impact of Montreal Protocol on climate change** and need to forge global cooperation to address climate challenges.
- **About Montreal Protocol**
 - In **1985**, world's governments **adopted Vienna Convention for the Protection of the Ozone Layer**.
 - **Under the Convention's Montreal Protocol (1987)**, governments, scientists and industry worked together **to cut out 99 per cent of all ozone-depleting substances (ODS)**.
 - It is the **only UN treaty** ever that has been **ratified by all 198 UN Member States**.
 - **India became a Party to Montreal Protocol in 1992** and has successfully met phase out targets of all ODS as per Montreal Protocol Schedule.
- **Montreal Protocol led to replacement of chlorofluorocarbons (CFCs) with Hydrofluorocarbons (HFCs)** which do **not destroy the Ozone layer but are extremely potent in causing global warming**.
 - Recognizing growth in use of HFCs, **Parties to the Montreal Protocol, reached agreement in 2016 in Kigali, Rwanda to mandate elimination of HFCs as well**.
 - **India approved the ratification of Kigali Amendment to Montreal Protocol in 2021**.
- **About Ozone and Ozone-depleting substance (ODS)**
 - **Ozone layer**, a fragile shield of gas, **protects the Earth from harmful portion of rays of sun**, thus helping preserve life on earth.
 - **Man-made chemicals** that have provided most of the chlorine and bromine for ozone depletion are **methyl bromide, methyl chloroform, carbon tetrachloride** and families of chemicals known as **halons, CFCs and hydrochlorofluorocarbons (HCFCs)**.

5.7.18. STOCKHOLM CONVENTION

- 18th Meeting of the **Persistent Organic Pollutants Review Committee to the Stockholm Convention (POPRC-18)** was held recently.
- The committee concluded its review of **four of the five chemicals under consideration**.
 - It recommended listing of **Dechlorane Plus (flame retardant) and UV-328 (stabiliser) under Annex A of the Stockholm Convention**.
 - **On medium chain chlorinated paraffins (flame retardant) and Long-Chain Perfluorocarboxylic**

Acids (PFCAs), risk management evaluations will be prepared for consideration at the next Committee meeting.

- **On chlorpyrifos (Pesticide)**, committee decided to defer its consideration of the draft risk profile.
- **About Stockholm Convention**
 - It is a **global treaty to protect human health and environment from POPs**.
 - ✓ POPs are chemical substances that **persist in environment for a long period, bio-accumulate in living organisms, adversely affect human health/ environment** and have the property of long-range environmental transport.
 - It is **legally binding**.
 - India **ratified the Stockholm Convention in 2006**.
 - ✓ Ministry of Environment had notified the **'Regulation of POP Rules'** in 2018, under the Environment (Protection) Act, 1986.
- **Other Hazardous Chemicals and Wastes Conventions:**
 - **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal**, adopted in 1989.
 - **Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade**, adopted in 1998.

5.7.19. PRIOR INFORMED CONSENT (PIC)

- International trade of 2 hazardous pesticides was recommended for 'prior informed consent' (PIC).
 - The PIC procedure (under Rotterdam Convention) is a **mechanism for formally obtaining and disseminating the decisions of importing parties** on their willingness to receive future shipments of hazardous chemicals.
- Recommendations were made by the **Chemical Review Committee (CRC)** for 2 hazardous pesticides, **Iprodione and Terbufos**.
 - Iprodione, a **fungicide used on vines, fruits, trees and vegetables**, has been classified as carcinogenic and toxic for reproduction.
 - Terbufos is a **soil insecticide** used commonly on sorghum, maize, beet and potatoes.
 - ✓ It has also been found to **pose risk to aquatic organisms** due to its toxicity.
 - In India, the use of these **chemicals was permitted by the 2015 Anupam Verma committee report**.
 - ✓ India is **among the largest exporters of Terbufos**.
- **Rotterdam convention** is an international treaty designed to **facilitate informed decision-making by countries with regard to trade in hazardous chemicals**.

- It creates **legally binding obligations for the implementation of the PIC** procedure.
- It **covers pesticides and industrial chemicals** that have been banned or severely restricted for health or environmental reasons by Parties.
- **CRC is a subsidiary body of Rotterdam Convention** established to review chemicals and pesticide formulations according to criteria set out by Convention.

5.7.20. TREES OUTSIDE FORESTS IN INDIA INITIATIVE

- It was launched by **Ministry of Environment, Forest, and Climate Change and US Agency for International Development (USAID)** to:
 - **Enhance carbon sequestration,**
 - **Support local communities,**
 - **Strengthen climate resilience** of agriculture.
- It **will be implemented in seven states:** Andhra Pradesh, Assam, Haryana, Odisha, Rajasthan, Tamil Nadu, and UP.
- It will **bring together farmers, companies, and private institutions** in India to rapidly **expand tree coverage** outside of traditional forests **by 28 lakh hectares.**

5.7.21. RANIPUR TIGER RESERVE (RTR)

- UP cabinet approved the notification of **state's fourth** (Dudhwa, Pilibhit and Amangarh are remaining 3) **tiger reserves** in **Ranipur Wildlife Sanctuary** in Chitrakoot district.
 - It was notified under Section 38(v) of **Wildlife (Protection) Act, 1972** that enlists **terms and conditions for relocation of Scheduled Tribes or other forest dwellers** for creating **tiger reserves.**
- RTR is **located in Bundelkhand** and has **tropical dry deciduous forests** and is home to fauna such as tigers, leopards, sloth bears, etc.

5.7.22. NEELAKURINJI

- **Recently, Neelakurinji/ Kurinji flower** has bloomed in **Chandradrona mountains** in **Chikkamagaluru** (Karnataka) **after 12 years.**

- It is **endemic to Western ghats generally bloom in the regions of Tamil Nadu, Kerala & Karnataka.**
 - It grows at an altitude of **1,300 to 2,400 meters.**
 - Its **blooms once every 12 years** season. However, blooming seasons have become unpredictable over the years due to changing weather patterns

5.7.23. KRITAGYA 3.0

- It is a **national level hackathon to promote speed breeding for crop improvement** to ensure overall sustainability and resilience in crop production in India.
 - It gives an **opportunity to students/faculties/ entrepreneurs/innovators** and others to showcase their innovative approaches & technology solutions.
 - It will also **encourage greater adoption of technology enabled solutions** in the country.
 - It is **organised by Indian Council of Agricultural Research (ICAR)** with its National Agricultural Higher Education Project (NAHEP) and Crop Science Division.

5.7.24. RULE CURVE

- As per Tamil Nadu Water Resources Organisation, **Mullaperiyar is first reservoir to have Rule Curve implemented** in country.
- Rule Curve is a **tabulation which specifies quantum of storage of water or empty space** to be maintained in a reservoir during different times of year, **based on the rainfall data for 35 years.**
 - Under Rule Curve method, **water is not allowed to be stored to permissible maximum level** at the time when reservoir receives huge inflows.
 - It is part of core safety mechanism in a dam.

5.7.25. GREEN FINS HUB

- It is a **global digital platform** that offers enhanced and global membership **for participating dive and snorkel operators to conserve the marine environment.**
- **Launched by:** United Nations Environmental Programme (UNEP), along with UK-based charity Reef-World Foundation.



SMART QUIZ

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



6. SOCIAL ISSUES

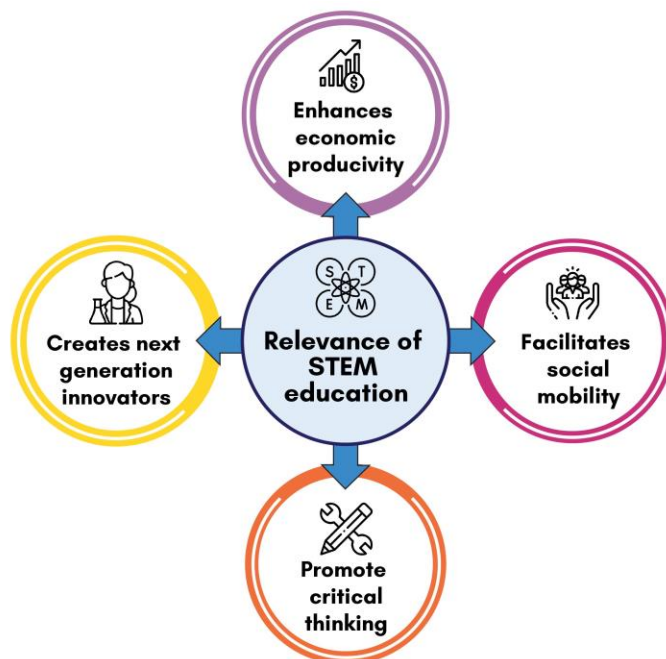
6.1. WOMEN IN STEM

Why in News?

The Office of the Principal Scientific Adviser (PSA) has launched a new initiative Women in Engineering, Science, and Technology (WEST) to promote women in STEM.

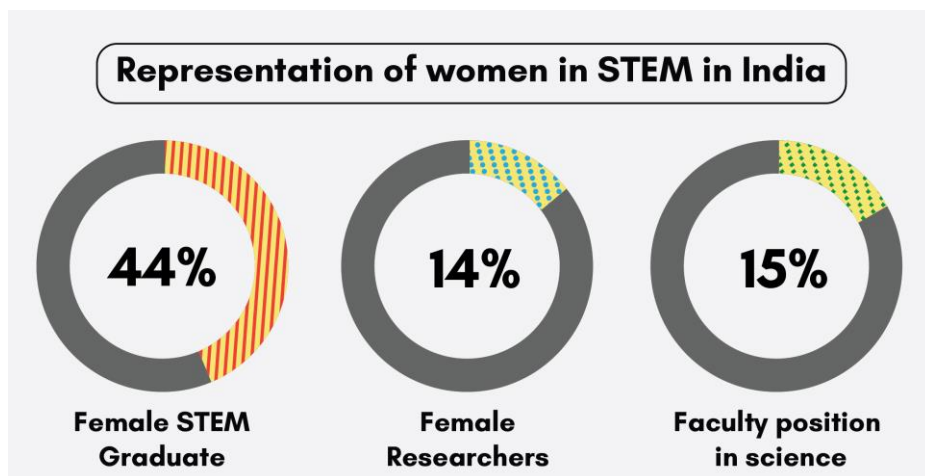
About Women in Engineering, Science, and Technology (WEST)

- WEST is a **new I-STEM** (Indian Science Technology and Engineering facilities Map: Linking Researchers and Resources) **initiative**.
 - STEM is a common abbreviation for four closely connected areas of study: **Science, Technology, Engineering and Mathematics**.
 - I STEM is a **national web portal for sharing research equipment/facilities** and for promoting collaborations in R&D and technological innovation in academia and industry.
 - I-STEM is an **initiative of PSA** under the Prime Minister's Science, Technology, and Innovation Advisory Council (**PM-STIAC**) mission.
- Through the **WEST initiative**, I-STEM shall provide a **separate platform to scientifically inclined women researchers, scientists, and technologists for pursuing research in science and engineering**.
- It will provide **skill development programs, access to R&D facilities and R&D software platforms**.
- Under the WEST initiative, the current support being provided to **S&T startups by women entrepreneurs by I-STEM will be enhanced**.



Current status of Women in STEM:

- According to the World Economic Forum, **female students and employees are under-represented in STEM**.
 - In schools, **most female students would rather pursue the arts**, rather than subjects like mathematics and engineering.
 - This phenomenon can be termed the **STEM gender gap**.
- World Bank data shows that globally **18% of girls in tertiary education are pursuing STEM studies** compared to 35% of boys.
- Tapping the potential of women in STEM **helps bridging gender inequality** by providing a level playing field to them **in Research and development**.
- There is need for **more women in STEM to further innovation and better represent** the needs of society.
- **United Nation's Sustainable Development Goal 5 (gender equality)** includes women's use of enabling technology, including ICTs as a means of achieving economic empowerment and greater agency.



Key factors perpetuating gender STEM gaps

- **Patriarchal conditioning:** Pressures to conform to societal norms, household responsibilities and childbirth play a major role in women backing out of advanced careers in science and technology.
 - Also, there is a **patriarchal attitude in awarding grants, fellowships and hiring practices.**
- **Gender Stereotypes:** STEM fields are often viewed as masculine, and teachers and parents often underestimate girls' math abilities starting as early as preschool.
- **Dual role syndrome:** Women in STEM are likely to face 'dual role' syndrome, wherein professional decisions are largely affected by their domestic responsibilities."
 - For example, many women prefer to withdraw from the research field after marriage or after childbirth.
- **Discrimination at the workplace:** Women in STEM face gender bias in performance evaluations due to lack of women representation in leadership positions.
- **Lack of supportive infrastructure:** Lack of suitable workplace or education benefits like travel allowance, lodging and maternity benefits also dissuades them from pursuing careers in STEM.
- **Fewer role models:** Girls have fewer role models to inspire their interest in these fields, seeing limited examples of female scientists and engineers in books, media and popular culture.

Way ahead

- **Closing the confidence gap:** Employee resource groups such as a Women's Forum or Working Parents Connection are valuable tools to help women feel confident about their STEM career.
- **Address gender biases in learning materials:** For example, biographies of women who have succeeded in male-dominated fields can alter the career aspirations of girls.
- **Paternity leave:** The childcare leave should be extended to male parents which will prevent women from bearing the brunt of career setbacks due to childbirth.
- **Incentivize:** Age relaxation in eligibility criteria for research work, public funded creche facilities, on campus housing, safe transport and medical help would act as incentives not only for attracting but also for retaining women in STEM.
- **Partnerships with the private sector:** The private sector can play a role by bringing financial support to non-profit STEM initiatives.
- **Gender Inclusion Fund:** This fund has been proposed by the National Education Policy 2020 to implement provisions critical for improving access to education for all women as well as transgender students.
 - This fund could be used for early investment in reskilling and promotion of STEM education among women.

Other initiatives take to promote women in STEM

- **Vigyan Jyoti:** It was launched by the Department of Science & Technology (DST) to create a level-playing field for the meritorious girls in high school to pursue STEM in their higher education.
- **Knowledge Involvement Research Advancement through Nurturing (KIRAN):** This scheme of DST had been instituted to encourage women scientists through various programmes in the field of S&T.
- **Gender Advancement for Transforming Institutions (GATI):** It seeks to bring about institutional reforms to facilitate women in Science, Technology, Engineering, Medicine and Mathematics (STEMM) disciplines at all levels.
- **Consolidation of University Research for Innovation and Excellence (CURIE):** It provides support to women universities in improving their R&D facilities.
- **Biotechnology Career Advancement and Re-orientation Programme (BioCARE):** It is being undertaken by the Department of Biotechnology (DBT) for Career Development of employed/ unemployed women Scientists upto 45 years of age for whom it is the first extramural research grant.

Conclusion

The increase in the numbers of women in the STEM education sector indicates that the situation is improving. However, various socio-economic hurdles need to be overcome to utilise their potential the best.

6.2. FOUNDATIONAL LEARNING STUDY (FLS)

Why in news

Study titled "Foundational Learning Study 2022" was jointly conducted by the **Union Ministry of Education and National Council of Educational Research and Training (NCERT).**

More about news

- It is a one of a kind study to arrive at the benchmarks in Foundational Literacy and Numeracy (FLN) under the FLS 2022.
 - FLN is the ability to read with meaning and perform basic math calculations by the end of Class 3.
 - The National Education Policy (NEP) 2020 accords the highest priority to achieving FLN among all children by 2025.
- It is also the largest study that assessed the learning levels of approx. 86,000 grade 3 students from 10,000 schools across India.
 - It is the only study that has been conducted in 20 different languages.
 - Parameters for foundational literacy skills included oral language comprehension, reading comprehension, oral reading fluency with comprehension, etc.
 - Parameters for foundational numeracy skills included number identification & comparison, number operations, data handling etc.
 - Depending on performance, students were categorised into 4 groups:
 - ✓ Lacking the most basic knowledge and skills;
 - ✓ Having limited knowledge and skills;
 - ✓ Developed sufficient knowledge and skills;
 - ✓ Developed superior knowledge and skills.

Key Findings

- On numeracy**
 - At the national level-
 - ✓ 11 per cent did not have the basic grade-level skills;
 - ✓ 37 per cent had limited skills;
 - ✓ 10 per cent had superior skills.
 - Tamil Nadu, at 29 per cent, had the maximum number of students who could not complete the most basic grade-level tasks.
- On literacy**
 - In English,
 - ✓ 15 percent students were found to be lacking even basic skills,
 - ✓ 30 percent had limited skills,
 - ✓ 34 percent had fairly superior skills.
 - Among other Indian languages, the proportion of students who lacked basic skills was: 21 percent in hindi, 17 per cent in Marathi, 20 per cent in Bengali, 17 per cent in Gujarati, etc.



Set the baseline for NIPUN Bharat (National Initiative for Proficiency in Reading with Understanding and Numeracy)



Set benchmarks for proficiency in numeracy and language.



Provide reliable and valid data about Grade 3 students to know what they are able to do in FLN.



Provide data to report on Sustainable Development Goals 4.1.1 indicators at the global level.

Significance of the study

| Comparison | Class | Methodology |
|---|---|--|
| National Achievement Survey (NAS) - Released by the Ministry of Education | Evaluates learning outcomes of students in Classes III, V, VIII and X | MCQs based, conducted every three years |
| FLS | Only for grade III students | One-to-one interviews with each participant. |

Significance of FLN



Literacy is critical to economic development as well as individual and community well-being.



Effective literacy skills open the doors to more educational and employment opportunities



The empowering potential of literacy can translate into increased political participation



Persons with adequate literacy skills maintain better health



It also leads to greater levels of mutual understanding and care, and ultimately towards strong community spirit.

About NIPUN Bharat or National Initiative for Proficiency in Reading with Understanding and Numeracy

- **NIPUN Bharat has been launched under the Centrally Sponsored Scheme 'Samagra Shiksha'.**
 - Vision of the Mission is to create an enabling environment to **ensure the universal acquisition of foundational literacy and numeracy.**
 - ✓ **So that by 2026-27** every child achieves the desired learning competencies in reading, writing and **numeracy at the end of Grade III and not later than Grade V.**
 - **Implementing agency:** Department of School Education and Literacy, Ministry of Education.
 - **Beneficiaries:** Children in the age group of 3 to 9 years including preschool to grade 3 & children who are in class 4 and 5 and have not attained the foundational skills.
 - **Implementation strategy:** A five-tier Implementation mechanism will be set up at **National-State-District-Block-School level.**

Way Forward

- **Effective implementation of government schemes** – Including Samagra Shiksha, Midday meal scheme, Poshan Abhiyan, and RTE Act, 2009 to make for a holistic improvement effort.
- **Engaging content**– New pedagogical methods, resources, and methods of assessment can be developed so as to help learners to be competent in doing meaningful reading and writing by the end of grade 2.
 - For ex. **ELPS approach** can be used where **E stands for experience, L stands for spoken language, P stands for pictures** that represent experience and **S stands for symbols that generalize the experience.**

6.3. ARTIFICIAL INTELLIGENCE IN EDUCATION (AIED)

Why in news?

Recently, UNESCO launched 'State of the Education Report for India, 2022: Artificial Intelligence in Education'.

About the report

- 2022 report aims to guide stakeholders for **leveraging AI in Education (AIED)** systems and outlines **major opportunities and challenges for AI in the education system** in India.
- This report is the **4th edition of the annual State of Education Report (SOER)** of UNESCO.

About United Nations Educational, Scientific and Cultural Organization (UNESCO)

- It was **established in 1945** as a specialised agency of the UN.
- It seeks to **build peace through international cooperation in education, sciences and culture.**
- UNESCO is **entrusted to lead and coordinate the Education 2030 Agenda** – part of a global movement to eradicate poverty through 17 SDGs by 2030.
- It is governed by the **General Conference and the Executive Board.**
- **Headquarters:** Paris.

Key highlights of the report

- **India's current status in AI**
 - India has the **highest relative AI skill penetration rate** (3.09 times the global average).
 - **AI literacy is becoming highly relevant** in India since the AI market is the primary growth driver of the broader information technology (IT) and data science industry.
 - AI in Education systems have **contributed considerably to the achievement of SDG 4 in India** (inclusive and equitable quality education and promote lifelong learning opportunities for all).
- **India's Potential: AI market** in India is expected to reach **US\$7.8 billion by 2025 at a rate of 20.2% CAGR.**
- **AI & Women**
 - India **leads the world** by far in terms of **women with AI skills.**
 - **Women** account for a **third of AI-related scientific publications** in India.
 - In 2018, India had the **world's second-largest AI talent pool**, of which **22% comprised women.**
- Report also focuses on **comprehensive and personalized intelligent tutoring systems (ITS)** and today's education system flaw in that **one-size-fits-all approach.**
 - ITS addresses this **through tracking the learning outcomes and assessing the competencies** of students individually in real time.

Significance of AI in the education sector

AI leverages computers and machines to **mimic the problem-solving and decision-making capabilities of the human mind**. Indigenous AI-based solutions are being developed in India for different sectors like **healthcare, agriculture, smart mobility and government initiatives** to accelerate efficiency and efficacy.

- **Inclusion and ubiquitous access:** It provide marginalised people and communities, people with disabilities, refugees, those out of schools, and those living in isolated communities with access to appropriate learning opportunities.
- **Personalized & better learning outcomes:** AI can help map each student's individual learning plans and trajectories along with-
 - Their strengths and weaknesses,
 - Subjects that cost more and are easily assimilated or learned, and
 - Learning preferences and activities.
- **Bridging regional divide:** Intelligent Tutoring Systems (ITS) can expand educational learning in remote areas.
 - For example, Learning Equality is a non-profit initiative that started as an extension of the Khan Academy to use the contents of the platform in developing countries.
- **Better professional environment for teachers:** A dual-teacher model entailing a teacher and a virtual teaching assistant, which can take over the teacher's routine task, frees up teachers' time.
- **Informed educational policy making:** Education Management Information System (EMIS) can collect, store, process, analyse and disseminate information for educational planning and management.
 - It can be widely used for education leaders, decision-makers and managers **at the regional, local and school levels** and for the generation of national statistics.



Challenges in the adoption of AI in the education sector

- **Lack of comprehensive policy:** India does not have a comprehensive plan to provide a roadmap for integrating AI in the education sector.
 - There will be a need for **Continuous upskilling of teachers** for the adoption of AI in the education sector.
- **Inadequate States capacity:** Existing public institutions may not be able to cope with the speed of innovation in the field of AI.
- **Availability of human resources:** All locations where AI in Education infrastructure is implemented will require qualified staff to fix the problem arising due to the use of various machines and technologies.
 - There is also **shortage of training data for AI in Education systems**.

Initiatives taken by India to Promote research in AI

- **Responsible AI for Youth:** It was created by the **Ministry of Electronics & IT** in collaboration with **Intel India** and the support of the **Ministry of Education**.
 - It is open to **school students studying** in classes 8-12 across India to **foster a deeper understanding of AI-tech** and encourage youngsters to become human-centric designers.
- **US-India Artificial Intelligence Initiative:** To foster AI innovation by sharing ideas and experiences, identifying new opportunities in research and development, and bilateral collaboration.
- **National Artificial Intelligence (AI) Mission:** It was launched by the Prime Minister's Science, Technology, and Innovation Advisory Council (**PM-STIAC**).
 - It works with extensive academia-industry interactions on developing core research capability at the national level which will include international collaborations.
- **AI in Schools:** As part of the National Education Policy (NEP) 2020, AI will now be a part of the Indian school curriculum.

- **Declining expenditure on Education:** India's expenditure on education is under 3.5% of GDP compared to a global average of 4.2%.
- **Lack of resources and infrastructure:** This affects the expansion of AI in Education.
 - Also, **accessibility to this infrastructure** is a concern. For example:
 - ✓ 54% of the population in India does not use the internet.
 - ✓ 85% of adolescent girls in the country don't have a laptop at home, and 83% get less than an hour at their school computer labs per week.
- **Ethics and transparency:**
 - **Data ethics:** The data of AI-powered education tools are routinely owned by private companies. Often, such companies sell these data without any financial benefit to the data subjects (students and teachers).
 - **Algorithmic biases:** Since the 'worldview' of AI systems relies on the data fed into them, AI systems adopt existing biases with respect to colour, sex, etc. AI may even amplify these biases.
 - **Digital or data colonialism:** It refers to the alleged intention of some countries to provide digital infrastructures to large parts of the world to get control of their data and to monetize them.

Way ahead

- **A comprehensive plan:** State policy should set out a vision for making the country the world's centre of AI innovation.
 - It is also essential to create new funding opportunities and new regulations to **secure the use of AI by private companies in terms of data uses, privacy and transparency.**
- **Harness basic technologies in a smart way:** To overcome infrastructure constraint **feature phones** could be used in smart ways especially among the poorer population.
 - **AI-powered learning tools** could be provided via short messaging service (SMS).
- **Promoting R&D:** There is also a need to increase incentives for AI researchers to attract both the talent.
 - **Development of AI programmes** at the bachelor's, master's and doctoral levels, as well as in technical and vocational education and training (TVET) can also be taken up.
- **Public-private partnership:** Partnership with the private sector is necessary since the public sector alone will not be able to make the necessary innovations at such complex technological levels. Also, such partnership will:
 - Strengthen AI training and research
 - Facilitate sharing of material and financial resources
 - Ensures that educational programmes are aligned with labour market needs
- **Address ethical issues:** Consult experts to create blueprints and roadmaps in the uncertainty of the near future development of AI.
 - **Data anonymity:** Ensure that personally identifiable information and individual privacy preferences of both students and teachers are protected.
 - **Algorithmic fairness:** Change the current approach of training data reflecting the real world. The data training should depict an ideal world where no bias and discrimination exist. This necessitates data cleaning and editing before entering them to AI.

Conclusion

AI is a dual-use technology. A variety of AI-powered education tools offer opportunities across many aspects of education such as formal and informal learning, teaching, evaluation, etc. However, it also entails challenges related to AI use and management which needs to be addressed first, both at the global level and at the national level in India.

6.4. POSHAN (PRIME MINISTER'S OVERARCHING SCHEME FOR HOLISTIC NOURISHMENT) ABHIYAAN

Why in News?

NITI Aayog released 4th progress report on POSHAN Abhiyaan.

More in News

- Bi-annual POSHAN Abhiyaan progress reports have been **designed to capture the mission's progress on convergence, innovations, capacity building** and implementation of programme activities conducted by the Women and Child Development (WCD) and Health Departments.

- Fourth report assesses **program implementation, impact of COVID-19 pandemic** on nutrition and health services and provide **insights on service delivery restorations** across India.

About POSHAN Abhiyaan

- POSHAN Abhiyaan (previously called the National Nutrition Mission) is the **Government of India's flagship programme to improve nutritional outcomes** for children, pregnant women and lactating mothers, and adolescents.
- It is a **multi-ministerial convergence mission** with the vision to accelerate India's progress on malnutrition, in a time bound manner with fixed target.
- In 2021, Central Government **merged schemes like the Supplementary Nutrition Programme under Anganwadi Services, Scheme for Adolescent Girls and POSHAN Abhiyaan** and re-aligned them as 'Saksham Anganwadi and POSHAN 2.0' for maximising nutritional outcomes.
 - POSHAN 2.0 seeks to **address the challenges of malnutrition in children, adolescent girls, pregnant women, and lactating mothers by developing, improving, and promoting practices that focus on health, wellness, and immunity.**
- Poshan 2.0 **will integrate several key strategies to fulfil its objectives**, viz., Corrective strategies, Nutrition Awareness strategies, Communication strategies and the Creation of green eco-systems.
- It is being **supported by 'Poshan Tracker'**, a new, robust ICT centralised data system which is being linked with the RCH Portal (Anmol) of MoHFW.

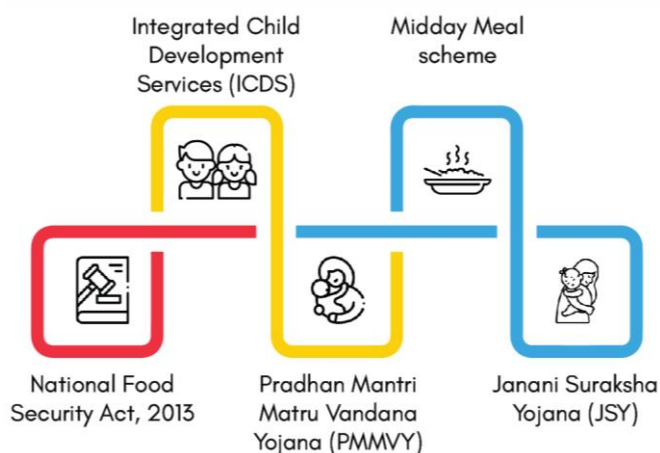
Need for POSHAN Abhiyaan

- **Tackling undernutrition:** Child and maternal undernutrition is the single largest health risk factor in India, responsible for 15 percent of India's total disease burden.
 - In the 2021 **Global Hunger Index, India ranks 101st** out of the 116 countries.
- **Economies of malnourishment:** Research suggests that \$1 spent on nutritional interventions in India could generate \$34.1 to \$38.6 in public economic returns — three times more than the global average.
- **Improving school attendance:** Research also shows malnourished children are less likely to go to school and more likely to drop out.
- **Improving women's health indicators:** India lags behind on other nutritional indicators, with high levels of anemia in women of reproductive age and low prevalence of exclusive breastfeeding of infants during their first six months.
- **Integrating efforts:** There is lack of synergy among ministries and departments and also in linking of schemes with each other to build a comprehensive nutrition response.



- **Newer challenges:** experts have noted how the combined effects of malnutrition, the pandemic and natural disasters like cyclones have further endangered the health of vulnerable populations.

OTHER INTERVENTIONS FOR TACKLING MALNOURISHMENT



Challenges in the implementation of POSHAN Abhiyaan

- **Lacking infrastructure of the Anganwadi centres (AWCs):** There are huge gaps in provisioning of drinking water, toilet facilities and electricity supply across the States and UTs.
 - AWCs are the focal point of delivery of health and nutrition services for pregnant women, lactating mothers and children.
- **Universal coverage lacking:** Although program platforms have expanded reach but they are still not reaching as many women and children as they should in high burden States.
- **Low fund utilization:** Recent NITI Aayog report found that Fund utilization is low, with less than half of funds utilised in 23 States and UTs.
 - **States and UTs with poor distribution of mobile phones** and growth monitoring devices emerged as **those with low fund utilisation.**
- **Impact of COVID-19:** Pregnant and lactating women and millions of babies born in 2020 have likely missed several essential interventions in health and nutrition in the critical 1000-day window.
- **Lack of Data:** Unavailability of real-time data on stunted and wasted children in the country continues to be a challenge for decision-makers and program implementers, as nutritional surveys are conducted infrequently.
- **Procedural delays:** Poshan Abhiyan requires quite a few ministries to work together. This not only delays matters, but also increases scope of irregularities.

| Indicator | | NFHS-5 | NFHS-4 |
|---|--|--------|--------|
| Children under 5 years who are stunted (height-for-age) | | 35.5 | 38.4 |
| Children under 5 years who are wasted (weight-for-height) | | 19.3 | 21.0 |
| Children under 5 years who are underweight | | 32.1 | 35.8 |
| Children age 6-59 months who are anaemic | | 67.1 | 58.6 |
| Pregnant women age 15-49 years who are anaemic | | 52.2 | 50.4 |

Way Forward

- **A Poshan-Plus strategy**, suggested by NITI Aayog, that should not only **focus on strengthening the core pillars** of POSHAN but **also on other social determinants** such as sanitation, education, poverty alleviation etc.
- **Expand coverage and improve quality of essential health and nutrition interventions** by continuing to strengthen ICDS and health platforms.
- **Active surveillance, enhancement of resources** for nutrition programming, and micro-level participatory planning as well as monitoring, are necessary.
 - **State- and District-focused diagnostic work are required** to understand determinants of poor nutrition and to diagnose and close gaps in systems implementation challenges.
- **Ensure strong linkages between counselling and take-home rations** in ICDS and ensure that they reach all the households with a child below two years.
- In both food and health systems in urban contexts, **engaging private health care providers and a range of actors** who can help create healthier food environments for a range of consumers is going to be essential.
- Existing movements like the **Eat Right and Fit India movements must be connected strongly with the POSHAN Abhiyaan's** mission of improving diets for all stakeholders.

6.5. DENOTIFIED TRIBES (DNTS)

Why in news?

31st August marked the **70th year of the repeal of the Criminal Tribes Act, 1871.**

About Denotified Tribes

- DNTs, the most vulnerable and deprived, are communities that were **'notified' as being 'born criminal'** during the British regime under **Criminal Tribes Act, 1871.**
 - DNTs are a **heterogenous group engaged in various occupations** such as transport, key-making, salt trading, entertaining — acrobats, snake charmers, jugglers — and pastoralists.
- **Criminal Tribes Act, 1871** was repealed by **Habitual Offenders Act, 1952.**
 - Several DNTs were included in Scheduled Tribe (ST), Scheduled Caste (SC) and Other Backward Caste (OBC) lists because they come from diverse social backgrounds.
- As per Renke Commission, 2008, there are nearly **1,500 nomadic and semi-nomadic tribes** and **198 Denotified tribes**, comprising 15 crore Indians.
- **31 August** is celebrated as **Vimukta Jatis day** in India by the DNTs communities.

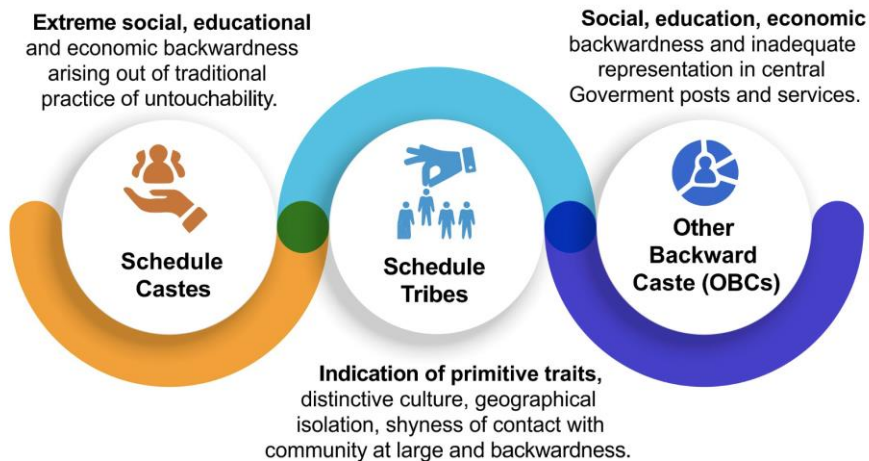
About Nomadic and Semi-Nomadic Tribes

- All **nomadic tribes (NTs)** are not DNTs, but all DNTs are NTs.
- Nomads and Semi-Nomads are **social groups who undertakes a fairly frequent, usually seasonal physical movement** as part of their livelihood strategy and moves from one place to another.
- **Three types of nomadic communities:**
 - **Hunter/trappers** of birds and animals, gamer, etc. such as Konda Reddis, Chenchus etc.
 - **Pastoral communities** such as Pardis, Guzzars, Banjaras, Bhils, Kurabas, Madhuras, etc.
 - **Peripatetic groups of peddlers**, fortune tellers, storytellers, acrobats, dancers and dramatists.

What are the issues associated with DNTs?

- **Identity:** Unlike SC/ST and OBCs, DNTs are **not recognised as a separate social category under the Constitution.**
 - Also, the **absence of uniform classification across the country** is the major issue hampering their identification.
 - Though many DNTs have been included in SC/ST and OBCs from time to time, yet large number of DNT communities are not covered under any reserved categories.
- **Isolation:** DNTs were relocated from their natural habitat to other areas from mainstream society in the name of reformation, where they were exploited and denied human rights, including the right to livelihood.
- **Economically Vulnerable:** As per Renke committee, **DNTs and NTs are extremely vulnerable**, with 89 percent of the former and 98 percent of the latter in the community doesn't own any land.
- **Lack of Data:** The absence of reliable data about population, geographical spread and development indices among these groups makes it hard for policymakers to plan an effective intervention strategy for the DNTs.
- **Political representation:** As per Renke Commission, DNTs lack leadership and the patronage of a national leader.
- **Social issues:** DNTs have **poor access to educational and health institutes** due to non-availability of school, lack of hostel facilities and primary healthcare, fear of vaccination etc.
 - They have **not been able to take advantage of the affirmative action programmes** launched by the Union and the States from time to time due to illiteracy and ignorance.

Criteria for inclusion of community in SC, STs, OBCs



NOTE: These criteria are not spelt out in the Constitution



Steps taken by Government for Denotified Tribes

- **National Commission for De-notified, Nomadic and Semi-Nomadic Tribes (NCDNT):** It was constituted by Government of India to prepare a state-wise list of castes belonging to De-notified, Nomadic and Semi-Nomadic Tribes.
 - It was headed by **Balkrishna Sidram Renke**.
- **Dr. Ambedkar Pre-Matric and Post-Matric Scholarship for DNTs Boys and Girls:** It is a **Centrally sponsored scheme to improve the educational empowerment** of the DNTs who are not covered under SC/ST/OBC category.
 - Funding pattern of **State and Centre** would be in **ratio of 25:75**.
- **Nanaji Deshmukh Scheme of construction of Hostels for DNTs Boys and Girls:** Centrally sponsored scheme would be run through State Governments/UT Administrations.
- **Scheme for Economic Empowerment of DNT Communities (SEED):** Launched by **Ministry of Social Justice & Empowerment** to provide free competitive exam coaching to DNTs students, provide health insurance to families, uplift clusters of DNTs communities through livelihood initiatives, and provide financial assistance for housing.
- **Development and Welfare Board for De-notified, Nomadic and Semi-Nomadic communities** has been constituted in 2019.

Way Forward

- **Reservation:** Constitution may be amended to include “Scheduled Communities” under Article 330 and Article 332 to enable DNTs to be eligible for **reservation of seats in the House of People and in Legislative Assemblies of the States**.
- **Legal measures:** Extension of the Prevention of Atrocities against SC/ST Act to DNTs **requires urgent consideration and appropriate action** to address discrimination faced by the DNTs.
- **Engaging stakeholders:** For effective implementation of welfare schemes for DNTs, it is **necessary to prepare State/UT list by constituting a Committee** under the Chairmanship of Chief Secretary along with Community Leaders from DNTs, and prominent anthropologists.
- **Identification:** To address the concern of DNTs identification, it is necessary to **issue Caste Certificates expeditiously** in a time-bound manner by District Administration.
- **Education:** Awareness programs are necessary to attract DNTs children to schools along with **opening primary schools** in areas predominantly inhabited by DNTs.

To know more about Tribals in India, please refer to our following Weekly Focus Document.

| | | |
|---|--|---|
|  <p>Tribals in India- Charting a Development Path</p> | <p>Speaking over 150 languages, the tribal communities are scattered along the length and breadth of India. In a land of kaleidoscopic diversity, these tribes have contributed to the richness of our culture and heritage but are at different stages of development. Their problems also differ from area to area and even within their own groups. This document attempts to explore and analyse the dynamics of tribal development in India, the problems underlying the governance of tribals and discusses the strategy that is needed for promotion of all round development of tribals.</p> |  |
|---|--|---|

6.6. ABORTION LAW IN INDIA

Why in News?

Recently, the Supreme Court (SC) **extended the right to safe and legal abortion up to 24 weeks of pregnancy to all women in the country**, regardless of marital status.

Abortion Laws in India

- In India, **unconditional abortion is not permitted.**
 - Carrying out **abortion is illegal** under Section 312 and 313 of the Indian Penal Code (IPC), **unless it is performed in the manner prescribed under the Medical Termination of Pregnancy (MTP) Act, 1971.**
- **MTP Act 1971:** It was enacted to provide for the **termination of certain pregnancies** by registered medical practitioner under certain specified conditions.
- **MTP (Amendment) Act, 2021:** 1971 Act was further amended in 2021 for **increasing access of women to legal and safe abortion service.**
 - **Abortion for unmarried women:** Extended MTP services under the failure of contraceptive clause to any women for safe abortion based on a woman's choice, **irrespective of marital status.**
 - **Increasing the upper gestation limit from 20 to 24 weeks for special categories of women:** This includes survivors of rape, victims of incest and other vulnerable women (differently abled women, minors, among others).
 - **Doctor's advice:**
 - ✓ Advice of **one doctor** is needed for terminating the pregnancy of **gestation period up to 20 weeks.**
 - ✓ Advice of **two doctors** is needed for terminating a pregnancy of **gestation period between 20 weeks to 24 weeks.**
 - **Establishes Medical Board:** It will **decide if a pregnancy may be terminated after 24 weeks** due to substantial foetal abnormalities.
 - **Confidentiality clause:** The name and other particulars of a woman whose pregnancy has been terminated cannot be revealed except to a person authorised by law.
- **Medical Termination of Pregnancy (Amendment) Rules 2021 under MTP (Amendment) Act, 2021:**
 - It only **included married women whose marital status had changed during their pregnancy, rape survivors, minors, women with mental disabilities,** and women pregnant with fetuses that had severe abnormalities.
 - However, it was **silent on single women in consensual relationships.**
- Now, Supreme Court ruled that unmarried women are also entitled to seek termination of 24 weeks of **pregnancy arising out of a consensual relationship**
 - It further stated that **MTP rules create an 'artificial distinction between married and single women'** and this is "not constitutionally sustainable".

About Abortion

- Abortion is the **deliberate termination of a pregnancy** by surgical or other medical means.
- There are some instances where the **termination of pregnancy is deemed necessary such as:**
 - **Undesired pregnancies** where the woman does not have an initial willingness to bear the child, such as, rape victims, unsafe sex among others.
 - **Protect the life of the mother** which may be endangered by pregnancy due to her impaired mental and physical health (and possible death).

DID YOU KNOW?



Abortion in India

- Close to **8 women die every day in India** due to unsafe abortions.
- About **67% of abortions** between 2007-2011 in India were **unsafe**.
- Women between the **ages of 15-19 years** are at the **highest risk of dying** from an **abortion-related complication.**

Abortion Laws around the world

- In 2019, **Northern Ireland** became the last remaining UK nation to **lift the ban on abortions.**
- **New Zealand decriminalised abortions in 2020**, extending the legal period to 20 weeks of pregnancy.
- Recently, the U.S. Supreme Court **overturned the landmark Roe v. Wade, 1973 ruling on abortion rights.**
 - The 1973 ruling **provided constitutional protection to woman's right to terminate her pregnancy** and had institutionalised abortion-related protections.
- The French author **Annie Ernaux who won 2022 Nobel Prize in Literature** has staunchly defended a woman's right to abortion. **France had decriminalised abortion in 1975.**

Significance of Supreme Court Judgment

- **Constitutional rights:** Judgment statement that distinction among women on the grounds of marital status is violation of the **right to equality under Article 14**.
 - Also, the **rights of reproductive autonomy, dignity and privacy under Article 21** confers an unmarried woman to the right of choice on whether to bear a child.
- **Acknowledges marital rape:** In the first legal recognition of “marital rape”, SC ruled that pregnancy of a married woman due to forcible sex by her husband can be treated as “rape” under MTP Act.
 - Women can go for **an abortion without the requirement of anybody else’s consent**.
- **Expands the definition of ‘women’:** Judgment clarifies that the use of the term ‘woman’ includes not just cis-gender women but also people of other gender identities who may require access to safe abortion.
- **Protects the privacy of minors:** SC allowed minor females to abort their pregnancies from consensual sex without disclosing their identity to the police as required under Protection of Children from Sexual Offences (POCSO) Act.
- **Expands the idea of reproductive rights:** Judgment has a positive obligation to protect the health, including reproductive health, of citizens.

Other Challenges in abortion in India

- **Shortage of qualified doctors:** As per National Health and Family Survey, 2015-16, only 53% of abortions are performed by registered medical doctors in India.
 - Remaining abortions were conducted by a nurse, auxiliary nurse midwife, family member of self.
- **Religious Opposition:** Several inscriptions and religious texts oppose the idea of abortion which hinders development of social acceptance and hence leads to limited usage of the law.
- **Social stigma:** Various factors discourage women from seeking abortions like social stigmas attached to unmarried women becoming pregnant, illegality of unmarried women seeking abortions, loss of privacy victims of rape etc.
- **Ethical dilemma:** The abortion debate asks **whether it can be morally right to terminate a pregnancy before normal childbirth**.

| Pro-Choice Movement (Focus on Mother) | Pro-Life Movement (Focus on Child) |
|--|--|
| <ul style="list-style-type: none"> • Woman alone has the right over her body. She should be the ultimate decision-maker on the question of whether she wants to undergo an abortion. • Birth defects (genetic abnormalities) which are lethal or lead to lifelong suffering takes heavy toll on parents through moral distress and posttraumatic stress. • State can’t overlook the age (minor) and mental health of women (mentally ill). • No child should be brought unwanted. Rape victims should have freedom of choice on pregnancy termination. | <ul style="list-style-type: none"> • Foetus rights of personhood should be upheld. • Misuses of prenatal diagnosis for sex-determination. The birth defects may get treated t in future • Against humanity and state has an obligation to protect all life including foetus. <ul style="list-style-type: none"> ○ E.g. Texas anti-abortion law (banning abortion if medical professionals can detect cardiac activity). |

Way ahead

- **Supreme Court in its judgement asked the state to ensure:**
 - Dissemination about reproduction and safe sexual practices.
 - Access to contraception to avoid unintended pregnancies.
 - Affordable medical facilities in every district.
 - The equal and dignified treatment of all patients by registered medical practitioners.
- **Increasing financial allocations for health sectors:** More finances would help improve human resource capacity, infrastructure, logistics and supplies, and health information systems.
 - **Private sectors too should be roped** in for investing more in health sector.
- **Women empowerment:** Education and financial independence will make women more assertive in demanding their sexual and reproductive health and rights.
 - It will **reduce unwanted pregnancies and promote the right to safe abortion** and post-abortion care services.
- **Eliminating social stigma:** Media, campaign by famous personalities, awareness programmes by local leaders, etc. could be helpful in advocacy and education favouring safe abortion through legal means.

- **Dealing with the ethical issues:**
 - Engage **religious leaders to make people sensitive** about the rights of women.
 - Medical professionals should help pregnant women make an **informed decision about their pregnancies**.
 - **Privacy of women choosing for abortion should be respected** and women's identity must not be disclosed to any third party.

Conclusion

Abortion laws in India have become progressive over the years. In the same spirit, the current judgement has not only affirmed the right to abortion for all women irrespective of marital status, but also attempted to remove hurdles for women and girls to get access to safe and legal abortion.

6.7. CRIME IN INDIA REPORT 2021

Why in news?

Recently, the **Crime in India, 2021**, annual report of NCRB was released.

About NCRB's Crime in India report

- NCRB, established in 1986, aims of **establishing a body to compile and keep records of data on crime**.
 - It functions under the **Ministry of Home Affairs (MHA)**.
 - Its functions include the **collection, coordination and exchange of information on inter-state and international criminals to the respective states**.
 - NCRB shall **empower Indian Police with Information Technology and Criminal Intelligence** to enable them to effectively enforce the law and improve public service delivery.
- Data for the **Crime in India** report is **collected by State Crime Records Bureau (SCRB)** from **District Crime Records Bureau (DCRB)** and sent to NCRB at the end of every calendar year.
 - It contains comprehensive information on **cases registered and their disposal**, and **persons arrested and their disposal**.
- NCRB publishes four major annual reports viz. **Crime in India, Accidental Deaths & Suicides in India, Prison Statistics India and Fingerprint in India**.

Key findings of the report

| Specifications | Detail | Trend |
|-------------------------------|--|-------|
| Overall crime | <ul style="list-style-type: none"> • Decline of 7.6% in registration of cases in 2021 over 2020. • Crime rate per lakh population declined from 487.8 in 2020 to 445.9 in 2021. | ↓ |
| Crimes Against Women | <ul style="list-style-type: none"> • 15.3% increase in 2021 from 2020, with the rate of crime (per lakh women population) 64.5 in comparison with 56.5 in 2020. • Sexual harassment against women in workplace and public transport increased by 4.3% | ↑ |
| Crime against Children | <ul style="list-style-type: none"> • A rise of over 16.2 percent in 2021 from 2020. | ↑ |
| Crime against Senior Citizens | <ul style="list-style-type: none"> • Increase of 5.3% in registration over 2020 during 2021. | ↑ |
| Crime against SCs and STs | <ul style="list-style-type: none"> • In terms of Crimes against Scheduled Castes (SCs), an increase of 1.2% in 2021 from 2020. • For Scheduled Tribes (STs), an increase of 6.4% was recorded. | ↑ |
| Economic offences | <ul style="list-style-type: none"> • Rose 19.4% in 2021. | ↑ |
| Cyber Crimes | <ul style="list-style-type: none"> • India registered an increase of 5.9% from 2020. • Telangana followed by Uttar Pradesh, Karnataka, Maharashtra, and Assam account for more than 70% of cybercrime incidents. • Average rate of cybercrime incidents (per lakh population) in country was recorded at 3.9. | ↑ |
| Human Trafficking | <ul style="list-style-type: none"> • 27.7% hike recorded in human trafficking incidents. | ↑ |
| Environment Related Offences | <ul style="list-style-type: none"> • Increase of 4.4% over 2020. • Maximum cases were registered under Cigarettes and Other Tobacco Products Act 2003, followed by Forest Conservation Act, 1927 and Noise Pollution Acts (States/Central). | ↑ |

What are the issues associated with Crime in India report?

- **Socio-economic factors not recorded:** The Socio-economic causative factors or reasons of crimes are not being captured by the Bureau. Only police recorded crime cases are being captured for this publication.
- **Gaps in data collection:** Data collection is generally so poor that it fails to reflect things that the authorities acknowledge.
 - For example, Bihar, Jharkhand and West Bengal have for years reported zero farmer suicides, extremely odd for states where the majority of the population is dependent on agriculture.
- **Poor coordination:** Police station is unable to share the data with NCRB in time for reporting, due to lack of coordination and data not organised leading to under/over reporting.
- **Digitalisation:** Data with state agencies is **kept in hard format and is not digitalised** which further causes issues in the seamless sharing of data with other agencies and NCRB.
- **Reporting of Crime:** Sometimes police are **not registering complaints** so that they can present a false picture of a decline in crime.
 - Public are also not very enthusiastic about reporting crimes to police as they are **fearful of being harassed at police station.**



Way forward

- **Trained staff:** Annual training sessions are important to **ensure quality of personnel to collect and analyse data**, technical staff for investigation of cybercrime. Also, tenures of SCRB and DCRB personnel should be **fixed for 2-3 years.**
- **Infrastructure:** Good data collection needs a **crime records bureau cadre**, increasing use of **Information and Communication Technology (ICT)**, and digitalisation of data for seamless data sharing.
- **Coordination:** Centre and States must work in tandem to facilitate investigation of crime, reduce data discrepancy by timely reporting/registering crimes in police stations.
- **Awareness:** Proper understanding of law among data collectors and data interpretation is necessary and sensitizing officials so that people can come forward to register complains and not get victimised.

6.8. NEWS IN SHORTS

6.8.1. SAMPLE REGISTRATION SYSTEM (SRS) STATISTICAL REPORT 2020

- Office of Registrar General & Census Commissioner recently released 'Sample Registration System (SRS) Statistical Report 2020'.
- SRS is the **only official source of various demographic indicators** in India **except the census.**
- It provides **annual estimates of various fertility and mortality indicators.**
- **Key findings**

| Indicators | 2014 | 2019 | 2020 |
|--|------|------|------|
| Crude Birth Rate (CBR): annual number of live births per 1,000 population | 21.0 | 19.7 | 19.5 |
| Crude Death Rate (CDR)- number of deaths per 1,000 midyear population | 6.7 | 6.0 | 6.0 |

| | | | |
|---|-----|-----|-----|
| Total Fertility Rate (TFR): average number of live births a woman would have by the end of her child bearing age. | 2.3 | 2.1 | 2.0 |
| Neonatal Mortality Rate (NMR): probability of dying during the first 28 days of life, expressed per 1,000 live births. <ul style="list-style-type: none"> • Six (6) States/ UT have already attained SDG target of NMR (<=12 by 2030): Kerala, Delhi, Tamil Nadu, Maharashtra, Jammu & Kashmir and Punjab | 26 | 22 | 20 |
| Infant Mortality Rate (IMR): number of deaths per 1,000 live births of children under one year of age | 39 | 30 | 28 |
| Under 5 Mortality Rate (U5MR): the probability that a child born in a | 45 | 35 | 20 |

| | | | |
|---|--|--|--|
| specific year or period will die before reaching the age of 5 years. | | | |
| <ul style="list-style-type: none"> 11 States/UT have already attained SDGs target of U5MR (<=25 by 2030): Kerala, Tamil Nadu, Delhi, Maharashtra, J&K, Karnataka, Punjab, West Bengal, Telangana, Gujarat, and Himachal Pradesh | | | |

- Significance of the report
 - The prime constituent for population projections.
 - An important source of demographic data for socio-economic development and population control.
 - Essential for an adequate evaluation of a number of programs in the health sector including family planning, maternal and reproductive health, and immunization programs.

6.8.2. NATIONAL HEALTH ACCOUNT (NHA) ESTIMATES, 2018-19

- NHA estimates 2018-19 is 6th consecutive NHA estimates report prepared by National Health Systems Resource Centre (NHSRC), designated as NHA Technical Secretariat (NHATS) in 2014 by Ministry of Health and Family Welfare (MoH&FW).
 - It is based on framework of System of Health Accounts, 2011, developed by WHO.
 - These estimates enable the policymakers to monitor the progress in different health financing indicators of country.
- Key findings

| Indicators | Meaning | Details |
|---|--|---|
| Total Health Expenditure (THE) as a percent of GDP and Per Capita | <ul style="list-style-type: none"> THE constitutes current and capital expenditures incurred by government and private sources, including external funds. THE as a percentage of GDP indicates health spending relative to country's economic development. THE per capita indicates health expenditure per person in country. | <ul style="list-style-type: none"> THE as a percentage of GDP fell to 3.2% in 2018-19 from 4% in 2013-14. THE per capita increased to ₹4,470 in 2018-19 from ₹3,638 in 2013-14. |
| Current Health Expenditures (CHE) as a percent of THE | <ul style="list-style-type: none"> CHE constitutes only recurrent expenditures for healthcare purposes net all capital expenditures. | <ul style="list-style-type: none"> Decreased to 90.6% in 2018-19 from 93% in 2013-14. |

| | | |
|---|---|--|
| Government Health Expenditure (GHE) as a percent of THE | <ul style="list-style-type: none"> GHE constitutes spending under all schemes funded and managed by Union, State, and Local Governments including quasi-Governmental organizations. | <ul style="list-style-type: none"> Increased to 40.6% in 2018-19 from 28.6% in 2013-14. |
| Out of Pocket Expenditures (OOPE) as a percent of THE | <ul style="list-style-type: none"> OOPE are expenditures directly made by households at point of receiving health care. | <ul style="list-style-type: none"> Decreased to 48.2% in 2018-19 from 60% in 2013-14. |
| Social Security Expenditure (SSE) on health as percent of THE | <ul style="list-style-type: none"> SSE include finances allocated by Government towards payment of premiums for Union and State Government financed health insurance scheme, employee benefit schemes etc. | <ul style="list-style-type: none"> Increased to 9.6% in 2018-19 from 6% in 2013-14. |
| Private Health Insurance Expenditures as a percent of THE | <ul style="list-style-type: none"> It constitutes spending through health insurance companies where households or employers pay a premium to be covered under a specific health plan. | <ul style="list-style-type: none"> Increased to 6.6% in 2018-19 from 3.4% in 2013-14. |
| External/ Donor Funding for health as percent of THE: | <ul style="list-style-type: none"> It constitutes all funding available to country by assistance from donors. | <ul style="list-style-type: none"> Increased to 0.4% in 2018-19 from 0.3% in 2013-14. |

6.8.3. THE GENDER SNAPSHOT 2022 REPORT

- The report was launched by UN Women, which works for gender equality and UN Department of Economic and Social Affairs (UN DESA).
- Key highlights of the report
 - It will take 286 years to achieve full gender equality at the current rate of progress.
 - By end of 2022, around 383 million women and girls will live in extreme poverty (on less than \$1.90 a day) compared to 368 million men and boys.
 - Over 1.2 billion women and girls of reproductive age (15-49) live in countries and areas with some restrictions on access to safe abortion.
 - Women hold only 2 in every 10 science, engineering and information and communication technology jobs globally.

- Global challenges like **COVID-19 pandemic and its aftermath, violent conflict and climate change, are further exacerbating gender disparities.**
- **Recommendations**
 - **Cooperation, partnerships, and investments in the gender equality agenda** are essential to correct the course and place gender equality back on track.
 - **To eradicate child marriage by 2030, progress must be 17 times faster than progress of the last decade.**
 - Long-term structural barriers to gender equality, laws and practices need to be addressed and dismantled.

6.8.4. GLOBAL ESTIMATES OF MODERN SLAVERY, 2021 REPORT

- **Released by:** International Labour Organization (ILO).
- Modern slavery, as defined in the report, is comprised of two principal components – **forced labour and forced marriage.**
 - Both refer to **situations of exploitation that a person cannot refuse or cannot leave** because of threats, violence, deception, abuse of power etc.
- **Key findings of report**
 - **50 million people in the world were living in modern slavery** in 2021 compared to 40 million in 2016, **jump of 25% in last five years.**
 - Of these, **28 million were in forced labour** and **22 million were trapped in forced marriage.**

6.8.5. PRADHAN MANTRI SCHOOLS FOR RISING INDIA (PM-SHRI) YOJANA

- PM has announced **development and upgradation of 14,500 schools across India** under PM-SHRI Yojana.
 - These **centrally sponsored schools** will have a modern, transformational, holistic, **inquiry-driven and learner-centric method of imparting education.**
- PM-SHRI schools **will showcase all components of National Education Policy 2020** and act as exemplar schools and also **offer mentorship to other institutions in their vicinity.**
 - They will be **equipped with modern infra, including labs, smart classrooms, libraries, sports equipment etc.**

- They **will also be developed as green schools** with water conservation and waste recycling provision.

6.8.6. E-BAAL NIDAN PORTAL

- National Commission for Protection of Child Rights (NCPCR) has **revamped the online portal E-Baal Nidan.**
- E-Baal Nidan is a **Complaint Management System of NCPCR.** Through this, **any individual or organisation can file complaint relating to the violation of child rights** through internet facilities.
- **Some of the revamped features include:**
 - **Bifurcation of complaints** based on subject matters like POCSO, Labour, Education etc.
 - **Tracking of complaints at every stage** in a more mechanised and time bound manner.
 - Option of **transferring complaints from NCPCR to the concerned State Commission.**

6.8.7. OPERATION MEGH-CHAKRA

- CBI recently launched a **major operation code named “Operation Megh-Chakra”** against circulation and sharing of **child sexual abuse material online.**
 - A similar operation **“Operation Carbon”** was carried out by CBI in **November 2021.**
- CBI has an **International Child Sexual Exploitation (ICSE) image and video database,** which allows investigators from member countries to **share data on cases of child sexual abuse.**

6.8.8. NOTIFIED DISEASE

- In its 139th report, the Parliamentary standing committee on health and family welfare suggested that **Cancer be classified a notifiable disease to tackle its under-reporting.**
- A **notifiable disease is any disease that is required by law to be reported** to government authorities.
- It becomes **legally binding** (failure amount to a criminal offense) for a **medical practitioner or its institutes to report cases of the disease to the government.**
- **Examples** of notified several diseases such as cholera, diphtheria, encephalitis, leprosy, meningitis, pertussis, plague, tuberculosis, AIDS, malaria, dengue, etc.



SMART QUIZ

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



7. SCIENCE AND TECHNOLOGY

7.1. BATTERY ENERGY STORAGE

Why in News?

Need for Advanced Chemistry Cell (ACC) Energy Storage in India report was released by NITI Aayog.

About Energy Storage

- Energy storage is the **capture of energy produced for later use to reduce imbalances** between energy demand and energy production.
- Based on the application, **battery energy storage can be classified into three categories:**
 - **Consumer electronics applications** (for mobile phones, tablets, laptops, cameras, etc.)
 - **Stationary applications** (such as for commercial and industrial applications).
 - **Transportation applications.**
- Battery energy storage technologies include:

About Advanced cell chemistry (ACC) battery storage

- ACCs are the **new generation of advanced storage technologies** that can store electric energy either as electrochemical or as chemical energy and convert it back to electric energy as and when required.
- They will **cater not only to electric vehicles but also to the consumer electronics industry**, solar rooftops, and electricity grids.
- **India's annual demand for ACC batteries** would rise to **between 104 GWh and 260 GWh by 2030** (from close to 2.7 GWh now) across multiple sectors.

| Type | Advantage | Disadvantage |
|--------------------------------|--|---|
| Lead Acid batteries | Mature technology, low cost and ruggedness compared with other battery technologies. | Heavy and bulky, do not cycle well. |
| Nickel-cadmium batteries | Availability in all sizes, can be moved around easily. | Environmental concerns related to cadmium. |
| Nickel metal hydride batteries | Widely used in consumer electronics, addresses the issues arising from the environmental effects of cadmium. | Not considered for large stationary applications because of high cost of Nickel, also have a high self-discharge rate and generally take a long time to charge. |
| Lithium-ion batteries | Superior with higher energy densities, lighter and smaller. | Raw material dependency, challenges in manufacturing, overcharging in certain types. |
| All solid-state batteries | High energy densities and charge/discharge current limits, a higher life even in harsh conditions. | Challenges in both manufacturing and fundamental technology understanding. |
| Metal air | High energy density than lithium-ion batteries. | Not electrically rechargeable, lower charge/discharge rates compared with Lithium-ion batteries |
| Sodium ion batteries | Wider operational temperature range and are safer. Cheaper than Lithium-ion. | Lower energy density than lithium-ion batteries. |

- It has become prominent in recent time with
 - Use of rechargeable batteries in consumer electronic applications like mobile phones, laptops, tablets, etc. and automobile applications.
 - Commitments to reducing greenhouse gas (GHG) emissions and attaining net zero.
 - Intermittent Renewable Energy sources in the grid calling for storing excess energy needs for use when needed.

Availability of raw material such as lithium and cobalt

Lack of skilled workforce to handle the rapidly changing battery storage technology

Lack of appropriate technology transfer and exchange of information due to technology patents



Need for Battery storage technology ecosystem

- **Competitive advantage:** Developing a localised advanced cell supply-chain ecosystem will provide advantage in the mobility, grid energy storage, and consumer electronics spaces.
 - With the cost of batteries falling, many end-use applications are increasingly becoming economically viable.

- **Energy security:** India's heavy dependence on energy imports (particularly for oil) makes it vulnerable to volatility in global commodity prices. Transition to EVs, enabled by battery manufacturing, will invariably have an impact on India's energy and commodity imports.
- **Import substitution:** It will facilitate Make-in-India and Atmanirbhar Bharat and will therefore insulate domestic supply chain from any supply shocks that could put the entire battery ecosystem at risk.
- **Meeting climate goal targets:** by reducing India's GHG emissions, as battery storage enables increased penetration of renewable energy on the grid and facilitates the demand for electric vehicles.
- **Electric Vehicle Ambition:** It will help to meet the EV 30@30 goals (setting the objective to reach a 30% sales share for EVs by 2030).
- **Benefit to overall economy:** Significant growth as a battery manufacturing hub could help establish India as a centre for cutting-edge research and innovation, boost its manufacturing capabilities, create new jobs, and foster economic growth.

Initiatives Taken

- Government approved **Production Linked Incentive (PLI) Scheme 'National Programme on Advanced Chemistry Cell (ACC) Battery Storage'** for achieving manufacturing capacity of 50 Giga Watt Hour (GWh) of ACC.
- **Faster Adaption of Manufacturing of Electric Vehicles (FAME) I and II.**
- **PLI Scheme for automotive sector.**
- **National Mission on Transformative Mobility and Battery Storage.**

Way Forward

- **Incentives to manufacturers:** Direct fiscal incentives, tax credits, and partnerships with industry leaders are among the strategies that can be used to catalyse the growth of energy storage manufacturing.
- **Securing Raw Material Supply:** India could develop external supply chains in both the near and long terms, as well as invest in battery recycling, to ensure that its access to critical raw materials (like lithium-ion, cobalt etc.) remains strong.
- **Special Economic Zones:** Specifically, for battery manufacturers, can stimulate investment by providing land, infrastructure, and a streamlined regulatory environment, which lower the risk for firms making such investments.
- **Investment in R&D and Innovation:** Local joint ventures should be promoted for research on advanced chemistries catering to the Indian environment, including undertaking pilot projects, for newer and niche battery technologies.
- **Specific policy instruments:** including direct benefits in the form of capital subsidies, interest subsidies, electricity duty exemptions, and other benefits to stimulate battery manufacturing at the central and regional levels.
- **Unlocking Public Private Partnership (PPP):** for securing the long-term growth and competitiveness of the domestic battery manufacturing industry by offering a way to optimally manage risk between government and private actors

7.2. PROOF-OF-STAKE TECHNOLOGY

Why in News?

Ethereum switched to Merge software recently.

More on news


- Ethereum is a **decentralised blockchain platform**
 - Ethereum is **one of the most used platforms by developers to build decentralised apps (dApps)**, smart contracts, and even crypto tokens.
- **Merge is a software upgrade**, aimed at slashing energy consumption, **to the way transactions are validated on Ethereum blockchain.**
 - Blockchain is a **distributed or decentralised ledger technology** which was first introduced in the design and development of cryptocurrency.
- It is a **process of shifting the consensus mechanism of the blockchain from proof-of-work (PoW) to proof-of-stake (PoS).**
- **PoW and PoS are protocols intended to validate transactions** and keep the blockchain network decentralized and secure.

Bitcoin Mining


- **It is the process of creating new bitcoin** by solving puzzles.
- **It consists of computing systems equipped with specialized chips** competing to solve mathematical puzzles.
- **Common centres for mining** included China, U.S.A, Russia, and Kazakhstan - **countries with cheap electricity rates and colder climates.**

| | Proof-of-Work (PoW) | Proof-of-Stake (PoS) |
|---------------------------|---|--|
| About | It is a mechanism bitcoin uses to regulate the creation of blocks and the integrity of the network through the process of mining. | PoS is an alternative consensus mechanism that delegates control of the network to the owners of a given token. |
| Energy Consumption | PoW consumes more energy since it allows all miners on a network to try and validate a transaction. | PoS replaces miners with validators and rewards only the top stakeholders, resulting in less energy consumption. |


PROOF OF WORK



To add each block to the chain, miners must compete to solve a difficult puzzle using their computers processing power.




In order to add a malicious block, you'd have to have a computer more powerful than 51% of the network.




The first miner to solve the puzzle is given a reward for their work.


PROOF OF STAKE



There is no competition as the block creator is chosen by an algorithm based on the user's stake.



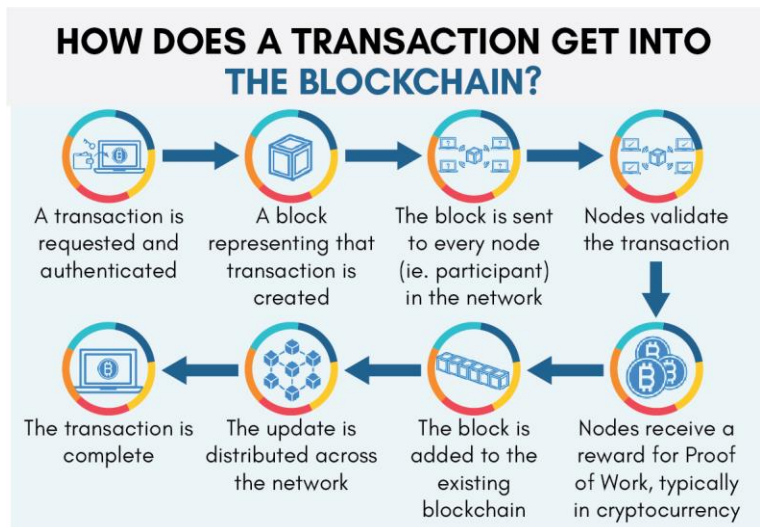
In order to add a malicious block, you'd have to own 51% of all the cryptocurrency on the network.



There is no reward for making a block, so the block creator takes a transaction fee.

Importance of new consensus mechanism

- **Less impact of crypto mining on local communities:** consequences of mining included mass electricity blackouts, fire accidents, overburdened grids, struggles between locals and crypto miners for more control over energy supply etc.
- **Environmentally conscious move:** PoS shift will, according to the Ethereum Foundation, cut the network's energy usage by 99.95% and lay the foundation for further improvements to its core infrastructure.
- **Better security:** Crypto experts are suggesting that PoS consensus mechanism offers better security than PoW and can precisely identify the attacker and eject them from the system.
- **Ripple effect:** Given how expansive and influential Ethereum is, this transition will likely have a ripple effect on the direction in which the crypto and broader Web3 industry contributes to positive climate action.
 - **Web 3.0 (a read-write-execute web), built by leveraging the blockchain technology, will be driven by Artificial Intelligence (AI) and machine learning** where machines will be able to interpret information like humans.



Concerns raised

- Switching to PoS consensus mechanism **would violate the principles of decentralisation** outlined in the Bitcoin white paper (authored by Satoshi Nakamoto, the pseudonymous creator of Bitcoin).
- It **would also represent losses in the millions of dollars for individual miners** and companies trying to solve the puzzles that would reward them with bitcoins.

Conclusion

Crypto has been waiting for a recalibration towards sustainability. Such a shift could likely change the narrative around the entire industry to utilize clean, renewable energy sources and would also draw the regulatory support needed to achieve its full potential as a valuable job creator, wealth builder and city developer.

7.3. NON-COMMUNICABLE DISEASES

Why in News?

A recent WHO report “Invisible numbers – the true scale of non-communicable diseases” stated that non-communicable diseases led to 66% of deaths in India in 2019.

About Non-Communicable Diseases (NCDs)

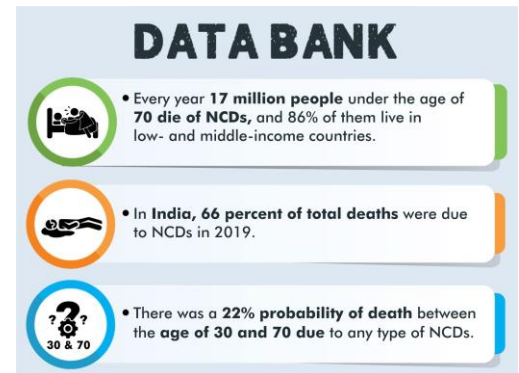
- NCDs, also known as chronic diseases, **tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors.**
- NCDs are **not transmitted from person to person.** These diseases persist for a long time and are generally slow to progress.
- NCDs often **affect people during their most productive years.** When individuals with NCDs face tremendous healthcare costs and a restricted ability to work, households struggle with increased financial risk.
- Covid-19 highlighted the links between NCDs and infectious disease,** with serious impacts on NCD care.
 - In the early months of the pandemic, 75 percent of countries reported disruption to essential NCD services.

Measures taken by India to prevent NCDs

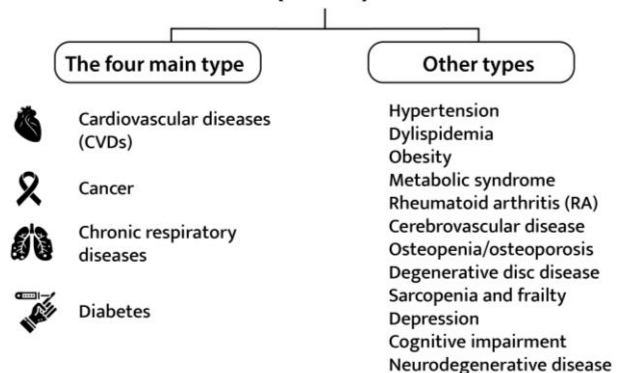
- National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS).**
- Preventive aspect of NCDs is strengthened under Comprehensive Primary Health Care through Ayushman Bharat Health Wellness Centre scheme.**
- Food Safety and Standards Authority of India (FSSAI)** has banned sales and advertisements of junk foods in school canteens and within 50 metres around school campuses.
 - FSSAI has launched ‘Eat Right India’ movement** to improve public health and combat negative nutritional trends to fight lifestyle diseases.
 - It also launched a **mass media campaign ‘Heart Attack Rewind’** for the elimination of industrially produced trans-fat in the food supply.
- Pradhan Mantri Ujjwala Yojana** helps to reduce indoor air pollution.
- In response to WHO’s Global action plan for the prevention and control of NCDs 2013-2020, **India is the first country to develop specific national targets** to reduce number of global premature deaths from NCDs by 25% by 2025.
- Promotion of an active life** through activities like Yoga which can address the risk of cardiovascular diseases.

Global Measures to prevent NCDs

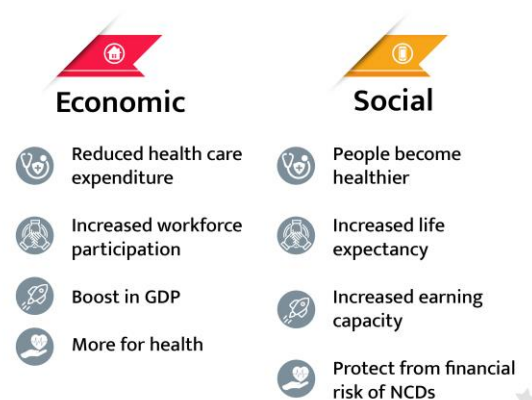
- NCDs are **recognized as a major global challenge in the United Nation’s 2030 Agenda for sustainable development.**
- Global Group of Heads of State and Governments on NCDs** is an informal and voluntary initiative for exchange, collaboration and action on NCDs at the highest level.



Non-Communicable Diseases (NCDs)



Benefits of Preventing and Controlling NCDs



Some successful interventions

- Zambia’s effort to integrate national HIV services and cervical cancer** prevention was helpful in screening more than 100,000 women for cervical cancer.
- Many countries**, including Malaysia, South Africa etc. have used **taxation to reduce the consumption of sugar-sweetened beverages** and thereby tackling obesity and other NCDs.

- Led by Norway and Ghana, the group launched a **Global Compact on NCDs** in April 2022, with the goal of **saving 50 million people from dying prematurely of NCDs by 2030**.
- **WHO member states have also endorsed a menu of cost-effective NCD best buy policy options** that can be used to tackle the pandemic.
- **WHO has launched a portal** (NCD data portal), which, for the first time, brings together all WHO data related to NCDs for 194 countries.

Way Forward

- **International cooperation and advocacy:** National and international leaders must use their positions of power to increase the visibility of NCDs and highlight what can be done to tackle them.
- **Stronger health care delivery:** It includes strengthening a country's health workforce, ensuring that health workers all have the knowledge and resources they need to address NCDs.
- **Health-in-all-policies approach** will play an important role in rendering visibility to the need for dialogue and consensus on the impact of policies on health in general and the NCD epidemic in particular.
- **Protection for the vulnerable:** Identifying groups most at risk from NCDs can enable targeted support.
- **Promoting high-quality R&D:** It can provide guidance and best practices for the planning, implementation and evaluation of various health programmes.
- **Reduce the major modifiable risk factors**, such as tobacco use, harmful use of alcohol, unhealthy diets, and physical inactivity.

7.4. CLONING

Why in news?

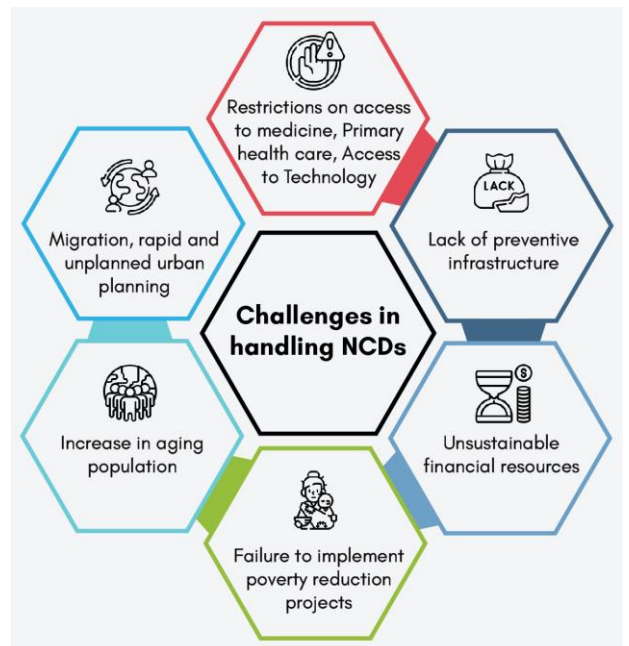
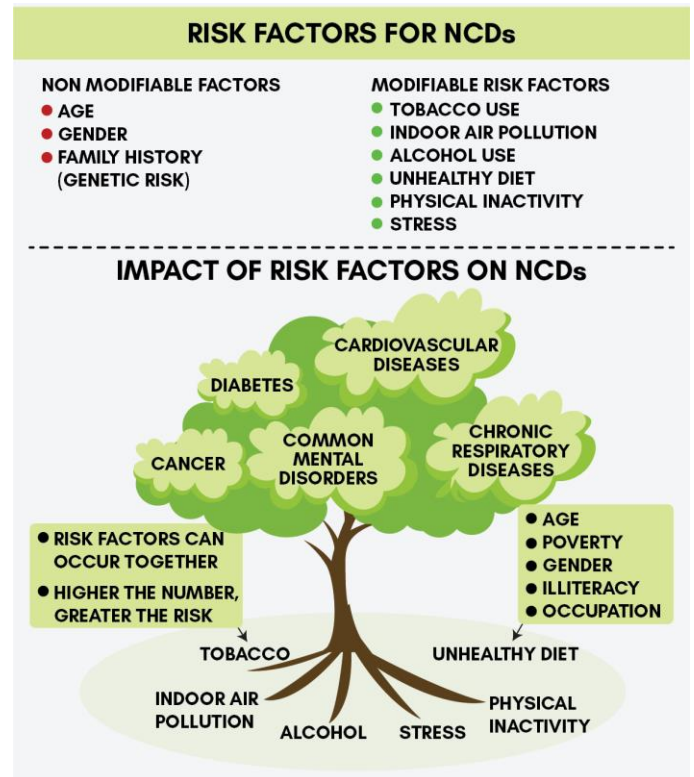
Recently, China has successfully cloned a **wild Arctic wolf** for the first time in the world.

More in news

- The Arctic wolf (white wolf or polar wolf) is **native to the High Arctic tundra** of Canada's Queen Elizabeth Islands.
- This cloning is considered a **milestone achievement in conserving rare and endangered species** through cloning technology.

About Cloning

- **Cloning** is the process of producing **genetically identical copies of a biological entity** (genes, cells, tissues and even entire organisms).
- **The copied material, which has the same genetic makeup as the original**, is referred to as a **clone**.
- Despite having the same genetic material **clones do not always look identical**. This is because the environment also plays a role in deciding the physical feature of an organism.
- In mammals including humans, **identical twins** (monozygotic twins) are **natural clones**.



- These twins are produced when a **fertilized egg splits**, creating two or more embryos that carry almost identical genetic material.

Applications of cloning

- Animals can be cloned to have **gene mutations that help scientists study diseases**.
- Livestock can be cloned to **produce more milk or meat**.
- Recreating **extinct species**
- **Cloned embryo could produce stem cells** that can be used to fix damaged organs like spinal cord, insulin-making cells to treat diabetes, etc.

Three different types of artificial cloning

- **Gene/DNA cloning:** It involves the transfer of a DNA fragment of interest from one organism to a self-replicating genetic element, such as a bacterial plasmid.
- **Reproductive cloning:** It involves transferring of nuclear material isolated from a somatic cell into an enucleated oocyte (egg cell).
 - Then this oocyte is stimulated to divide, forming an embryo with the same genome as the nuclear donor. This process is called **Somatic Cell Nuclear Transfer (SCNT)**.
 - This process was used for creating **Dolly sheep**, the first mammal to be cloned.
- **Therapeutic cloning:** It is similar to reproductive cloning till the production of embryo. The produced embryo is then grown in the laboratory.

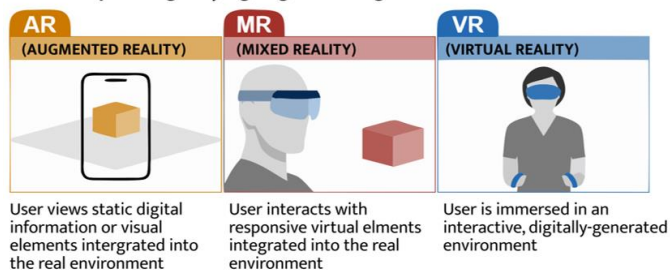
7.5. NEWS IN SHORTS

7.5.1. XR TECHNOLOGY START-UPS

- Ministry of Electronics and Information Technology (MeitY) Startup Hub and Meta have collaborated to accelerate XR technology start-ups in India
- MeitY Startup Hub is a **national platform focused on promoting technology innovation**, start-ups, and creation of intellectual properties.
- Extended reality, or XR refers to **all real-and-virtual combined environments and human-machine interactions generated by computer technology**.
 - XR is an umbrella term that **covers virtual reality (VR), augmented reality (AR), mixed reality (MR)**.

XR (EXTENDED REALITY)

Collective term applied to immersive experiences incorporating varying degrees of digital and real information



- **Applications of XR**
 - In medicine, it helps **train surgeons by enabling interaction with 3D images** of the anatomical structure.
 - In the retail **business XR gives customers** the ability to try before they buy.
 - **Enables virtual field trips**, including to locations that one can't reach in person.
 - Other sectors e.g., **marketing, real estate, Entertainment**, etc.

Challenges with XR

- XR technologies **collect and process huge amounts personal data** which has to be protected.
- **High cost of implementing** the technology.
- **Lack of familiarity** with navigating the virtual world.
- **Gaps in alignment between assessment method** and content being assessed.

7.5.2. QUANTUM NETWORK

- The Indian Institute of Technology, Madras has **joined the IBM Quantum Network, and has become the first Indian institute to do so**.
 - This network aims to **advance quantum computing** (computing based on principles of quantum theory) **skills development and research in India**.
- Quantum networks also known as the quantum internet is **an internet network that makes use of the properties of photons to transmit data**.
 - It **allows quantum devices to exchange information** within a particular environment that harnesses the principles of quantum mechanics.

7.5.3. INDIA'S FIRST LITHIUM CELL PLANT

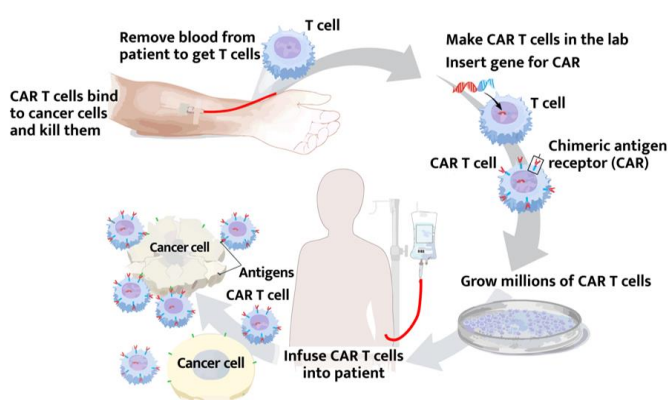
- India's first lithium cell plant manufacturing facility will be launched in **Tirupati, Andhra Pradesh**.
 - With an installed capacity of 270 Mwh the plant can produce **60% of India's present requirement**.
 - These cells are used for **Mobile Phones, hearable and wearable devices**.
 - Currently, India imports complete requirements of lithium-ion cells primarily **from China, South Korea, Vietnam and Hong Kong**.

- India's largest lithium-ion battery plant is in Gujarat and it started production in May, 2022.
- It produces **batteries for automobiles and energy storage applications.**

7.5.4. CHIMERIC ANTIGEN RECEPTOR T (CAR-T) CELL THERAPY

- **CAR-T therapy**, indigenously developed by IIT Bombay and Tata Memorial Centre, **was tested on patients in India for the first time.**
 - **Research is funded under National Biopharma Mission (NBM)** by Biotechnology Industry Research Assistance Council (BIRAC).
- CAR-T therapy is a **way to get immune cells called T cells** (a type of white blood cell that attacks foreign pathogens) **to fight cancer by editing them in the lab** so they can find and destroy cancer cells.
 - T cells are **taken from patient's blood** and are changed in lab by **adding a gene for a man-made receptor** (called CAR).
 - This **helps them better identify specific cancer cell antigens.** CAR-T cells are then given back to the patient.
- **Benefits of CAR-T therapy**
 - While existing treatments work towards increasing the life of patients by a few years or months, **CAR-T technology holds promise of curing certain types of cancers.**
 - Unlike chemotherapy, CAR-T is **administered only once to a patient.**
 - **Short treatment time** needed and **more rapid recovery.**

CAR T-CELL THERAPY



7.5.5. CONVERSION THERAPY

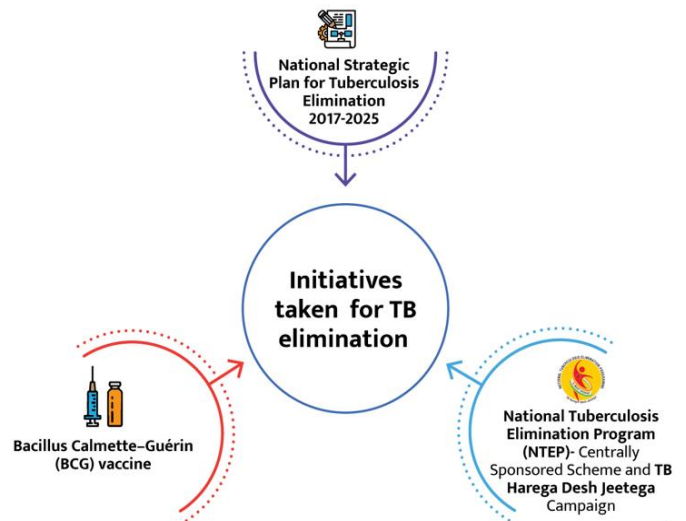
- The **National Medical Commission**, apex regulatory body of medical professionals, has declared conversion therapy to be counted among **professional misconduct.**
 - Based on **Madras High Court** order, it is enlisted under the **Indian Medical Council (Professional**

Conduct Etiquettes and Ethics) Regulations, 2003.

- Conversion Therapy, also known as **Reparative therapy**, covers the **emotional or physical therapy** used to “cure” or “repair” a person’s attraction to the **same sex, or their gender identity and expression.**
 - But it **lacks medical evidence** and can turn **dangerous**, targeting the **LGBTQ+ youth.**
 - This can lead to **depression, anxiety, drug use, homelessness, and suicide.**

7.5.6. PRADHAN MANTRI TB MUKT BHARAT ABHIYAAN

- The Abhiyan is aimed at **TB elimination from the country by 2025** five years ahead of the Sustainable Development Goals of 2030.
 - It would **bring together all community stakeholders to support those on TB treatment.**
- **Initiatives taken against TB:**
 - **National Strategic Plan for Tuberculosis Elimination 2017-2025**
 - **National Tuberculosis Elimination Program (NTEP)- Centrally Sponsored Scheme and TB Harega Desh Jeetega Campaign**
 - **Bacillus Calmette–Guérin (BCG) vaccine**



Related News

Short anti-TB regimen ‘BPAL’ gets global nod as trials ‘positive’

- A short treatment **regimen of six months called BPAL** has **shown favourable outcomes** in tuberculosis (TB) patients.
 - BPAL is a 6-month, all-oral, three-drug regimen that is used to **treat people with highly drug-resistant forms of TB.**
 - **BPAL is a combination of three newer antibiotics**, namely bedaquiline, pretomanid and linezolid.
 - **TB Alliance's BPAL regimen to reduce TB treatment time from 18 months to 6 months** and reported success rate of 90% can be crucial in the fight against TB.
- ✓ **TB Alliance is not-for-profit organization.**

7.5.7. INCOVACC

- Bharat Biotech's INCOVACC, the **world's first intranasal vaccine for Covid-19** received approval for emergency use in India.
- It is a **recombinant replication deficient adenovirus vectored vaccine** with a pre- fusion stabilized spike protein.
- **Benefits**
 - It **produces antibodies as well as reduce risk of transmission, while** other vaccines only produce antibodies.
 - **Additional immune response**- addition to immunity in blood, it activates immunity of cells found in tissues lining nose, mouth and lungs.
 - **Easy delivery** – cut down syringe, needles etc
 - **High compliance** (Ideally suits for children's and adults)

7.5.8. CERVAVAC

- CERVAVAC, **India's first indigenously developed quadrivalent human papillomavirus (qHPV) vaccine** for the prevention of **cervical cancer**, has achieved scientific completion.
- Cervical Cancer is a cancer that **occurs in cells of the cervix** - lower part of uterus that connects to vagina.
 - It is **caused by various strains of HPV**, a sexually transmitted infection.
 - **India accounts for about a fifth of global cervical cancer burden**, with 1.23 lakh cases and around 67,000 deaths per year
- **Developed by:** Serum Institute of India with support from Biotechnology Industry Research Assistance Council (BIRAC), and Bill and Melinda Gates Foundation.

7.5.9. STUDENTSHIP PROGRAM FOR AYURVEDA RESEARCH KEN (SPARK) PROGRAM

- SPARK **aims to support the research ideas of young undergraduate students.**
 - The Central Council for Research in Ayurvedic Sciences (CCRAS) **will offer research fellowships to young undergraduate students enrolled in Ayurveda colleges across the country.**
- CCRAS is the **apex body, Under Ministry of Ayush, for undertaking, coordinating, formulating, developing and promoting research** in Ayurveda on scientific lines.

7.5.10. NAVIC (NAVIGATION WITH INDIAN CONSTELLATION)

- The Centre is pushing smartphone makers to **enable support for its NavIC navigation system in new devices from next year.**

- Aim of this move is to **remove dependence on foreign satellite systems for navigation service requirements, particularly for "strategic sectors."**
- This will remove the risk of **the service being withdrawn or denied in a given situation.**
- **About NavIC**
 - It is an **independent stand-alone navigation satellite system** developed by the **Indian Space Research Organisation (ISRO).**
 - It **consists of 7 satellites** and covers the whole of India's landmass and **up to 1,500 km** from its boundaries.
 - This system was **earlier known as IRNSS (Indian Regional Navigation Satellite System).**
- **Application:**
 - Presently, it is **being used in public vehicle tracking in India, for providing emergency warning alerts to fishermen venturing into the deep sea** and for tracking and providing information related to natural disasters.
- Presently, there are **4 navigation satellite systems operational in the world viz.,** GPS from the U.S., GLONASS from Russia, Galileo from European Union and BeiDou from China.
 - In addition, there are **2 regional systems viz.,** NavIC from India and QZSS from Japan.



7.5.11. INFLATABLE AERODYNAMIC DECELERATOR (IAD)

- **ISRO has successfully tested IAD technology** to land missions on Venus & Mars.
- IAD is **used for aerodynamically decelerating an object descending through the atmosphere.**

- **IAD has huge potential** in variety of space applications like **recovery of spent stages of rocket, for landing payloads** on to Mars or Venus and in **making space habitat for human space flight missions**.
- IAD is **made of Kevlar fabric** coated with polychloroprene.
 - Kevlar has properties like **high tensile strength, toughness, thermal stability** etc.

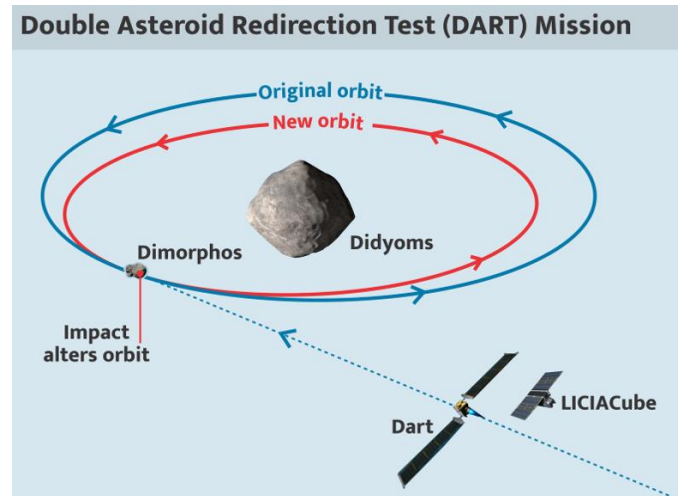
7.5.12. MARS OXYGEN IN-SITU RESOURCE UTILIZATION EXPERIMENT (MOXIE)



- It has **produced oxygen at Mars** with components from the planet's atmosphere.
- **MOXIE makes oxygen like a tree does**. It inhales carbon dioxide and exhales oxygen.
 - **Carbon dioxide makes up ~96% of the gas in Mars' atmosphere** (Oxygen is only 0.13%).
- **MOXIE was sent** (by Massachusetts Institute of Technology) **with NASA's Perseverance rover**.
- Project can be **scaled up ahead of human missions** to continuously produce oxygen.

7.5.13. DOUBLE ASTEROID REDIRECTION TEST (DART) MISSION

- Recently, NASA crashed its \$344 million the Double Asteroid Redirection Test (DART) mission on binary asteroid system **Didymos and moonlet** to test a kinetic impactor technology.

- Binary asteroid system is made up by asteroid Didymos and its small moonlet called Dimorphos and the **small moon (Dimorphos) orbits the larger body (Didymos)**.
- The Double Asteroid Redirection Test (DART) is a first-of-its-kind spacecraft, which has been designed to test a **unique method to deflect an asteroid to change its motion in space through kinetic impact** and save the Earth from an incoming asteroid.
- The **James Webb Space Telescope and the Hubble telescope** were used to track the spacecraft and keep an eye on the asteroid to see the impact.



| | | |
|--|--|---|
|  <p>SMART QUIZ</p> | <p>You can scan this QR code to practice the Smart Quiz of Science & Technology at our open test online platform for testing your understanding and recalling of the concepts.</p> |  |
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8. CULTURE

8.1. ADI SHANKARACHARYA

Why in News?

The PM visited Sri Adi Shankaracharya Janma Bhoomi Kshetram at **Kalady village** in Kerala.

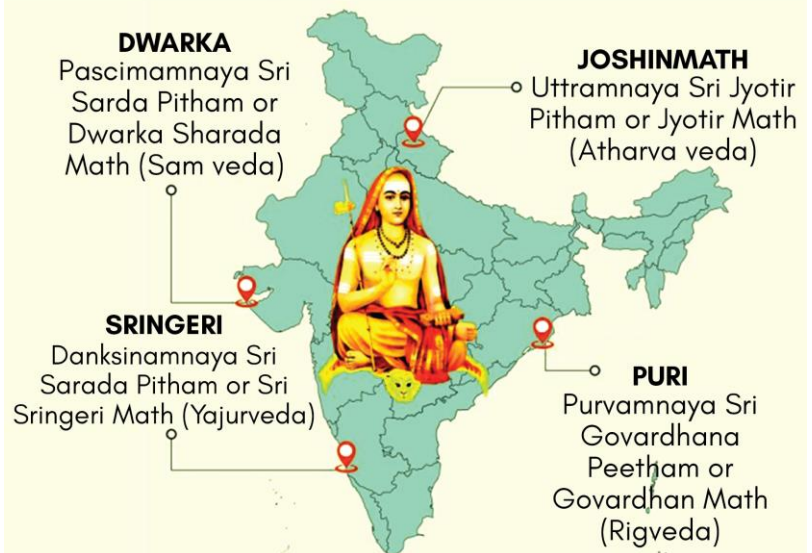
About Adi Shankaracharya

- **Adi Shankara**, also known as **Jagadguru Sri Adi Shankaracharya**, was an **Indian philosopher** and **theologian** known for 'Advaita Vedanta' and 'Dashanami Sampradaya'.
- He took **sanyas** at an early age and worked to revive **Sanatana Dharma** and **re-establish right values** in society.
 - He is also considered as an **incarnation of Lord Shiva**.
- **Teacher of Adi Shankara: Govinda Bhagavatpada** (student of **Gaudapada**), a philosopher of the **Vedanta School of System**, under whom he studied Gaudapadiya Karika, Brahmasutra, Vedas, and Upanishads.
 - The **Gaudapada-karikas** is the earliest extant Advaita Vedanta text.
 - **Gaudapada** is known for the inception of '**asparśa yoga**' or **yoga of non-contact** and '**ajāti-vāda**' or **doctrine of non-origination**.
- **Main Disciples of Adi Shankara:** Padmapada, Totakacharya, Hastamalaka, and Suresvara; each headed one math (monastery) established by Adi Shankara (see image).

Philosophy Sri Adi Shankaracharya

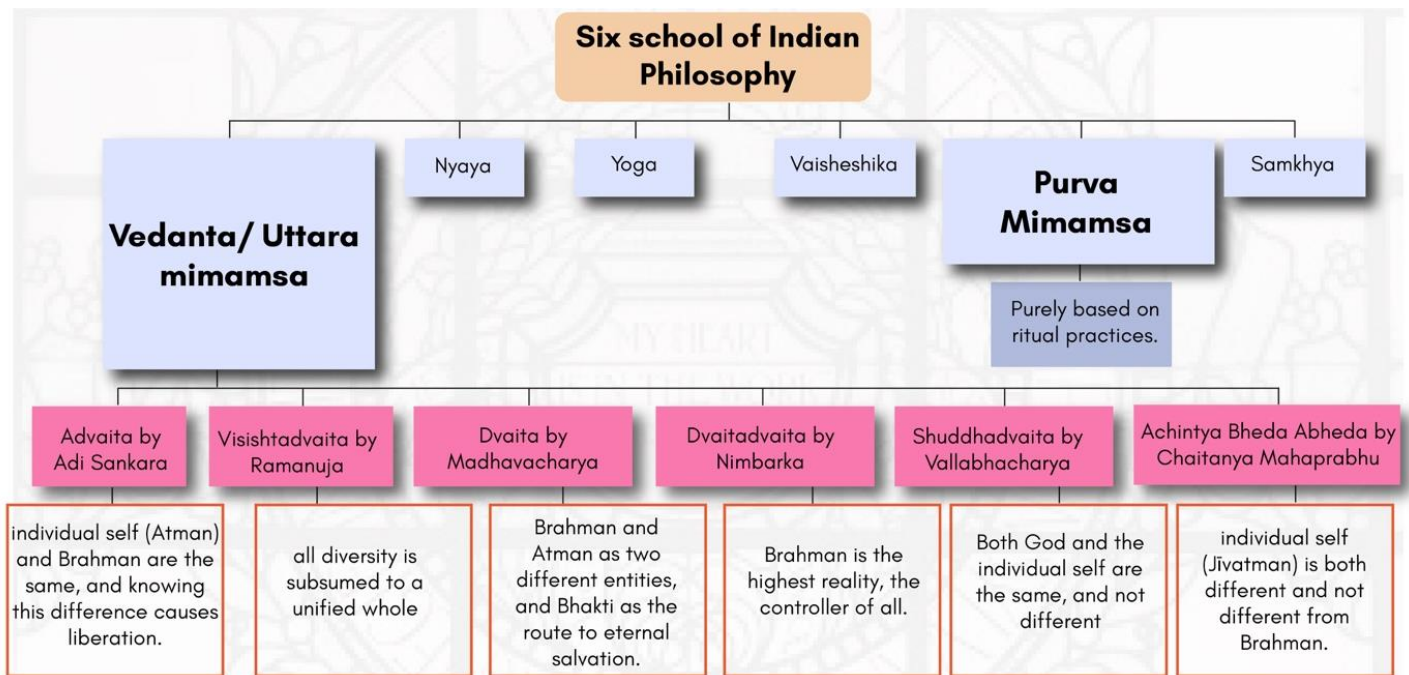
- **Adi Shankara** belonged to **Vedanta philosophy** and gave the philosophy of **Advaita Vedanta (Non-dualism)**.
- He opposed the **Mimamsa philosophy** (one of **six-Astika** or **orthodox philosophies** of India, see image) for its ritualism and idea of attaining **salvation after death**.
- He asserted one can attain liberation within one's life by **gaining true knowledge** on one's **true self or soul (Atman)** and of **Supreme Soul (Brahman)**.
 - He debated with **Mandana Misra** and his wife **Ubhaya Bharati** on **Mimamsa Philosophy** and defeated them. On his defeat, **Mandana Misra** became his disciple, later known as **Suresvara**.
- His **Advaita Vedanta**, also known as **Jnana Kanda** or **non-dualism** is the first main school under **Vedanta** (or **end of Vedas**) philosophy by aligning Vedas with **Upanishads**.
 - Later, other saints like Ramanuja, Madhavacharya etc. led other schools of thought under Vedanta (see image).

4 Vedic Maths established by Adi Shankaracharya



About Advaita Vedanta (Non-Dualism)

- According to it, Brahman (Atman) is the **Paramartha** or **absolute reality** which doesn't change. It is **metaphysically true** and **ontologically accurate**.
 - **Individual soul** is identical to it and the world has no separate existence apart from Brahman.
- The **surroundings** or **physical environment** is the ever changing **vyavahara** or **empirical (pragmatic) reality** created by **illusion or māyā**.
 - **Pratibhasika** or **deceptive reality** is another level of reality constructed through imagination.
- Because of errors in **judgments** (mithya) and **ignorance** (avidya), individuals see **plurality** or being different from Brahman.
- **Knowledge** helps individual to reach **absolute reality** to liberate from the cycle of transmigration and worldly bondage, described in three words by Vedanta as:
 - "**sat-chit-ananda**", i.e. **Truth, consciousness** and **Bliss**.
- According to it, **Atman** is the **only 'sat'** or **absolute truth**. A person attains bliss or happiness by gaining consciousness or knowledge of absolute truth.



Other contributions by Sri Adi Shankaracharya

| | |
|-----------------------------|--|
| Sects and Traditions | <p>Shanmata</p> <ul style="list-style-type: none"> • Shanmata, i.e. six religions, is a synthesis of six sub-sects. <ul style="list-style-type: none"> ○ Each of these sub-sects worship one of the six supreme deities, i.e. Shiva, Vishnu, Shakti, Ganesha, Surya and Skanda (Kumara)- who are part of one divine power. • Shanmata merges them and its followers are known as Smartas (or the Smarta tradition), i.e. those who follow Smriti (or dharma shastras). <p>Dashanami Sampradaya</p> <ul style="list-style-type: none"> • It is a monastic tradition of Hinduism founded by Adi Shankara for living a monastic life. It organizes monks under 10 different titles. |
| Religious texts | <ul style="list-style-type: none"> • He wrote commentaries on religious texts such as Brahma Sutras, Upanishads and Bhagavad Gita. E.g., Brahmasutrabhasya, is the oldest surviving commentary on 'Brahma Sutra'. • He wrote 'Upadesasahasri', i.e. a thousand teachings- a comprehensive description of his philosophy of advaita (non-dualism). <ul style="list-style-type: none"> ○ Other Books: Viveka Chudamani, Atma Bodha, Vakya Vritti. • He composed 72 devotional and meditative hymns like Soundarya Lahari, Sivananda Lahari, Nirvana Shatakam and Maneesha Panchakam. |

Significance of his teachings in today's life

A 'moving library' on spiritualism and pure knowledge, his teaching's can help an individual, especially public servant and businessman, as well as communities and nations in:

- **Overcoming Ignorance:** The first important lesson from Adi Shankara work and his life is of overcoming **Avidya** (ignorance or incorrect knowledge) through **Vidya** (knowledge), **Shravana** (careful listening), **Manana** (thinking or contemplating on the teaching) and **Nididhyasana** (mediating on the teaching). As Adi Shankaracharya said-

"Action cannot destroy ignorance, for it is not in conflict with or opposed to ignorance. Knowledge does verily destroy ignorance as light destroys deep darkness."

- **Living a Meaningful Life:** True knowledge liberates an individual from worldly pleasures or materialism. It can help in reducing corruption and other malpractices by overcoming self-interest and promoting values of honesty, integrity and accountability.
- **Reinvigorating Spiritualism over materialism:** The idea of '**jagat mithya, brahma satyam**' (i.e. the **world is illusion** and **Brahman is the only truth**) from Adi Shankara can help in enlightening leaders or businesses to move beyond the

illusionary world or treating others as a means. It can help in working towards universal goals through **objective** and **responsible decision-making**.

- **Social Harmony: Smarta tradition** is an example on how one can bring harmony among different sub-sects by linking all to the universal truth. Under growing religious fundamentalism and hatred, non-dualism can help in removing conflicts or differences based on caste, creed, religion etc. and lay the foundations of '**Vasudhaiva Kutumbakam**'. In words of Adi Shankaracharya-

"When our false perception is corrected, misery ends also."

8.2. HOYSALA TEMPLES

Why in news?

The Hoysala Temples of **Chennakesava at Belur, Hoysaleswara at Halebid and Kesava at Somnathapura** in Karnataka are India's official nominations for the World Heritage List for the year 2022-2023.

About Hoysala temples

- The '**Sacred Ensembles of the Hoysala**' have been on **UNESCO's Tentative List** since April 15, 2014, and they are **testimony to the rich historical and cultural heritage of this country**.
- They are **protected monuments of the Archaeological Survey of India (ASI)**, which takes care of their conservation and maintenance.

HOYSALAS TEMPLE

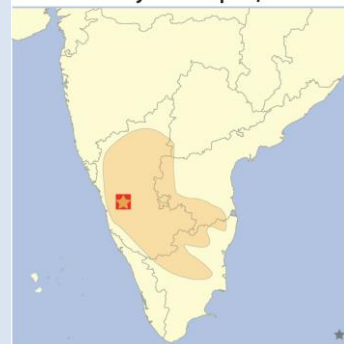


About Hoysalas

Founder- King Nripa Kama II

- The Hoysalas ruled a large part of **modern day Karnataka and parts of Andhra Pradesh and Tamil Nadu** from the 10th to the 14th century.
- In the history of Hoysalas the name, **Vishnuvardhana (Bittideva, his original name) Raya holds great importance**.
 - It was under **King Vishnuvardhana Raya** that the kingdom achieved **political prominence**.
 - Of his many military conquests, **he is best known for winning the Gangawadi area from the Cholas in 1116**.
 - A number of **Vaishnava temples were built under his patronage** while his queen, **Shantala Devi** who remained a devout Jain, fostered a number of artists.

Extent of Hoysala Empire, 1200 CE



| Temple | Major Features |
|----------------------------|--|
| Chennakesava Temple | <ul style="list-style-type: none"> • It is an EKAKUTA, i.e., a temple with one shrine. It is dedicated to Vishnavism. • The garbha griha houses an enshrined image of Krishna. • A stepped pond called Vasudev Tirtha was constructed to the northwest of Chennakesava by Veer Ballala II. |
| Halebidu | <ul style="list-style-type: none"> • Originally Halebidu was called Dwarasamudra which refers to a large water reservoir. • It is a DVIKUTA (temple with two shrines) and is dedicated to Shiva. • One shrine is dedicated to King Vishnuvardhan and the other to his Queen Shantala, therefore it is called Shantaleshwara. |
| Kesava Temple | <ul style="list-style-type: none"> • It was built under King Narasimha III and is dedicated to Vishnu. • The temple is built from soapstone and is known for its lathe turned pillars, symmetrical architecture and intricate sculptures. |

Temple Architecture of Hoysalas

- **Hybrid Style-** Hoysala temples are called **hybrid or Vesara** as their unique style seems neither completely dravidan nor nagara, but somewhere in between.
 - **Stellate Plan-** The most characteristic feature of these temples is that the **plan of these temples starts looking like a star, and is thus known as a stellate-plan.**
 - **Intricate Carvings-** Since they are **made out of soapstone which is a relatively soft stone, the artists were able to carve their sculptures intricately.**
 - This can be seen particularly in the jewellery of the gods that adorn their temple walls.
 - **Not an inch of space is left uncarved.** There are **animals and other denizens of forest on the lower three or four mouldings**, interspersed with floral and creeper designs and, above them, in more than life size, are huge sculptural representations of gods.
 - **Overall Design-** The Halebid temple is a **double building with a large hall for the mandapa** to facilitate music and dance. **A Nandi pavilion precedes each building.**
- **Culture -** The Hoysaleswara temple **follows the Shaivism tradition, but includes themes from Vaishnavism and Shaktism, too, along with images from Jainism.**
 - The sculptures inside the temple **depict scenes from the Ramayana, the Mahabharata and the Bhagavata Purana.**

About World heritage site list

- A **United Nations Educational, Scientific and Cultural Organization (UNESCO) 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.
- In 1994, the World Heritage Committee launched the Global Strategy for a Representative, Balanced and Credible World Heritage List as per the **1972 Convention concerning the Protection of the World Cultural and Natural Heritage.**
- There are **three types of sites: cultural, natural, and mixed.**
 - India has **40 world heritage sites that include 32 Cultural properties, 7 Natural properties and 1 mixed site.**

8.3. TRADITIONAL INDIAN TEXTILES

Why in news?

Recently, UNESCO has released **list of 50 exclusive and iconic heritage textile crafts** of the country under report titled **'Handmade for the 21st century: Safeguarding Traditional Indian Textiles'**.

About Traditional Indian Textiles

- The origin of Indian textiles can be traced to the Indus valley civilization as early as 5th millennium BC.
 - The people of that civilization used homespun cotton for weaving their garments and used indigo to color their fabric.
- Traditional Indian textiles can be divided into:
 - **Embroidered textiles (Phulakri, chikankari),**
 - **Resist dyed textiles (Bandhani, Ikat),**
 - **Printed textiles (Kalamkari, Bagru prints) and**
 - **Hand-woven textiles (Banaras Brocades, Kashmir Shawls) etc.**

Convention for the Safeguarding of the Intangible Cultural Heritage

- The "intangible cultural heritage" means the **practices, representations, expressions, knowledge, skills** – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage.
- Preserving living traditions that are transmitted from generation to generation is the **cornerstone of the 2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage.**
 - **India has been a signatory to the Convention.**

Significance of the Traditional textile craft

- **Represents Culture:** The specialty in the weave of the textiles in each region is developed based on location, climate, and cultural influences
 - For instance, **shawls and scarves from Kashmir carry echoes of craft communities of Kashmir valley** engaged in intricate hand embroideries using nature inspired motifs such as chinar leaves etc.
 - Crafts are an important means of **preserving our rich heritage, culture, traditional skills, and talents associated with people's lifestyle** and history.

- **Rural Development:** Indigenous artisans involved in crafts based on local informal knowledge play a significant role in development of rural lives by **creating jobs and preventing rural to urban migration.**
- **Economic benefits:** India earns about 27% of its total foreign exchange through textile exports.
 - It also contributes **around 3% to the GDP of the country.**
- **Influence the international fashion industry:** Skilled textile craftsmanship and traditional artisanal makers are a huge part of the fashion industry.
 - With specialised expertise, they manufacture fabrics and garments, create embellishments and historically have provided inspiration to designers all over the world.
- **Tourism:** Unique crafts and processes have attracted artists and buyers from different parts of world, leading to **opening of international markets for artisan communities** and development of rural tourism.
- **Interdependence:** Profound lessons of interdependence and collaboration can be learnt from the traditional craft communities.
 - For instance, people with diverse skill sets come together such as block printer, dyers dying fabric, washer community and carvers to make block printed fabric.

Initiatives taken to promote Traditional craft

- **National Handicraft Development Programme (NHDP):** To create a globally competitive Handicrafts Sector and **provide sustainable livelihood opportunities to artisans through innovative products designs, improvement in product quality,** introduction of modern technology, branding & marketing.
- **Comprehensive Handicrafts Cluster Development Scheme (CHCDS):** To scale up infrastructural and production chain at Handicrafts clusters across country which have remained unorganized.
- **Ambedkar Hastshilp Vikas Yojna (AHVY):** To **mobilise artisans into self-help groups and societies** with agenda of facilitating bulk production and economies in procurement of raw materials.
- **Handicrafts Mega Cluster Mission (HMCM):** To provide **adequate infrastructural support for improved quality and productivity,** to enable access of artisans to a larger market segment, both domestic and international.
- **Marketing Support and Services Scheme:** It provides **interventions for domestic marketing events to artisans,** such as providing financial assistance for organising or participating in marketing events in India.

Issues associated with Traditional Craft

- **Unorganized Nature:** Craftsman work in unorganized sector and are vulnerable to exploitation such as **low wages, long working hours** etc.
 - Absence of market intelligence and poor institutional framework further aggravates the issues faced by artisans.
- **Poor quality:** Although attractive for tourists, the **quality of products is not at an acceptable level to be exported** as production process is adapted to domestic climate conditions and not to the destination country.
- **Customer connects:** Artisans are **unable to build a loyal customer base** as they usually contact middlemen, leaving artisans behind the lens.
- **Financial Issues:** Due to lack of guarantee re-payment, artisans face **financial shortage and are not able to acquire equipment and raw material** of the requisite quality as per international market standards.
- **Production:** Techniques and process of crafting vary from one craft to another; the production takes place in households and is **unable to compete with the increased competition from mills, power looms and organized unit.**



- **Perception:** Handicrafts are perceived as traditional, old-fashioned and antithetical to modern tastes due to **lack of appreciation of history and cultural identity** associated with these products.
 - The lack of markets outside the state has prevented skilled **Risha artisans (in Tripura)** from selling their products to a wider consumer base.
- **Innovation:** Artisans lack innovation in designs, knowledge of modern designs which can be marketed easily. As a result, they are unable to meet the changing requirements of customers.

Conclusion

Textiles are made by hand across the length and breadth of India and are a source of primary and supplementary income for many Indians. Policy measures must ensure the continuance of these living traditions, so that the hand skills sector remains relevant, buoyant and an integral part of India's rich cultural heritage for generations to come.

For more details on the Traditional Indian Textiles that need Safeguarding, kindly refer appendix at the end of the document.

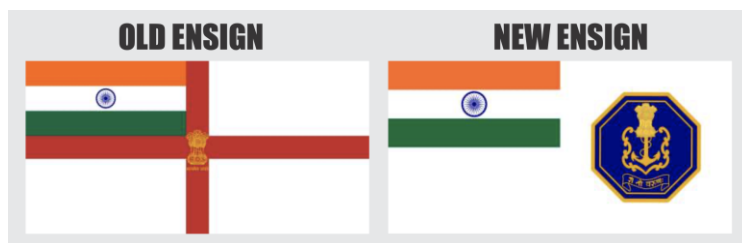
8.4. NAVAL TRADITIONS IN INDIA

Why in news?

Recently the new naval ensign (flag) was unveiled by Prime Minister during the commissioning of INS Vikrant.

More on News

- **Naval Ensigns** are flags that naval ships or formations bear to denote nationality.
- The Old naval ensign carried the Saint George's Cross with the Tricolour in the canton (top left corner of flag).
 - Although, this is **not the first time that naval ensign is being changed** (done earlier also in 1950, 2001, 2004, 2014).
- New naval ensign bears the **seal of Chhatrapati Shivaji Maharaj**.
- Tricolour is placed on the upper canton (top left) of the flag, and on the right a **blue octagonal shape that encompasses the national emblem sits atop an anchor, which depicts steadfastness**.
 - The octagonal shape has been designed to **represent eight directions, symbolising the multi-directional reach and multi-dimensional operational capability of the Indian Navy**.
 - **Twin golden borders** surrounding it are said to draw inspiration from Chhatrapati Shivaji Maharaj.



Role played by the Navy

- **Creating trade routes:** IVC's maritime trade route with Mesopotamia, Gupta empire trade routes with West Asia etc.
- **Establishing external links:** Mauryan empire relationship with Sri Lanka, Egypt etc. (the route of propagation of Buddhism).
- **Protecting the sea border:** Although limited, the naval war fighting capabilities existed especially in Maurya, Chola and Maratha dynasties.
- **Scientific exchanges:** The maritime routes enabled geographical understanding and knowledge exchange. For example, the knowledge of the monsoon winds was also developed during sea voyages.

Evolution of Indian Navy

- **Indus Valley Civilisation (IVC)**
 - The world's **first tidal dock** is believed to have been **built at Lothal around 2300 BC** during the Harappan Civilisation, near the present day Mangrol harbour on the Gujarat coast.
 - During this time, the inhabitants of Indus Valley Civilisation had maritime trade link with Mesopotamia.
- **Mauryan Dynasty**
 - **Extensive maritime trading activities** that paved the way for Indian immigration to Indonesia and other surrounding islands.
 - **Megasthenes** has described the presence of a **special group** that looked after different aspects of **naval war-fighting**.

DID YOU KNOW?



- Vedic literature has numerous references to boats, ships and sea voyages.
- Rig Veda mentions **merchants sailing ships across the oceans** to foreign countries in quest of trade and wealth. Even the Puranas have several stories of sea voyages.

- **Arthashastra**, written by Chanayaka, has details of the **department of waterways under a Navadhyaksha** (Superintendent of the ships).
- **Satvahana Dynasty**
 - They **controlled the East coast of India**, along the Bay of Bengal and had healthy trade with the Roman Empire. Also had **contacts with various parts of Southeast Asia through the sea route**.
 - Were the **first native Indian rulers** to issue their **own coins with inscription of ships**.
- **Gupta Dynasty**
 - Chinese travellers including **Fa-Hien, Huein Tsang** etc had given accounts of the vast **overseas trade during the Gupta period**.
 - During this period, several ports in the east and west were opened which greatly revived **maritime trade with European and African countries**.
- **Southern dynasties**
 - **Cholas, Cheras and Pandyas** rulers had established strong maritime trade links with the local rulers of Sumatra, Java, Malay Peninsula, Thailand and China.
 - They **navigated through various rivers** which opened into the Arabian Sea.
 - **Cheras** had a **flourishing trade with the Greeks and the Romans**.
 - **Pandyas** controlled **pearl farming** that took place along the India's southern coastline.

Chola period (3rd – 13th Century)

- During the Chola dynasty **extensive sea trade existed and new harbours with quarters, warehouses and workshops were established**.
- **Ship repair yards, wharfs and light houses** were also build.
- The naval supremacy of the Cholas attained its zenith in the **reign of Rajendra Chola**. His major naval campaigns included the campaign against Cheras and Pandyas, subjugation of northern part of Sri Lanka, and a campaign in what is present day Maldives.

Mughals, Marathas, Mysore, and the advent of Europeans

Mughal empire was largely a land-based empire. They found sufficient revenue from land resources, consequently they did not pay much attention to the affairs of the sea. This enabled the Arabs to establish a monopoly over trade in the Indian Ocean.

Hearing about the rich land India, the Europeans and among them Portuguese took the lead and were the first to arrive on Indian shores. Their advent was resisted by most of the Indian states. Most staunch resistance to them was by Mysore under Tipu Sultan and by Marathas under **Chhatrapati Shivaji Maharaj**.

Why was Naval prowess of Marathas special?

- **Chhatrapati Shivaji Maharaj was the first in his era of rulers** to realise the **importance of a strong navy** and laid the foundations of a modern naval force in the 17th century.
- **A strong naval presence** along the Konkan coast to **protected the sea trade of the Maratha empire**.
 - For **more than 40 years**, the Marathas **held both the Portuguese and the British at bay**. (The Portuguese accepted his right to sea and the English company had to pay an annual tribute, in order to ensure the safety of their vessels.)
 - He also **protected** the western Konkan coastline from the **attacks of Siddis fleet**.
- **Major Naval events in Maratha history**
 - **1665**: Chhatrapati Shivaji Maharaj undertook a sea-borne naval expedition to North Canara and raided Barcelor along with Karwar, Shiveshwar, Miraj, Ankolaetc.
 - **1679**: Marathas occupied the island of Khanderi, south of Bombay.
 - **1690s**: Kanhoji established the might of Maratha navy by introducing new fighting techniques, adopting the European technologies and improved artillery.
 - **1756**: The **Maratha naval supremacy came to an end** with the joint task force of the Peshwa and English against Tulaji Angre at **Vijaydurg**.

Maratha Navy

- **Organization**: The Navy was divided into two '*Subhas*' or divisions; every division; had five *Gurabs* and, fifteen *Galbats*, each division was under the command of two admirals; *Darya Sarang* and *Mai Nayak (Bhandari)*.
- **Ships**: The Maratha ships were of two types; fighting ships and merchant ships. The fighting ships included *Gurabs*, and *Galbats*. The merchant ships consisted of *machuva*, *shibar*, *tarandiand pagar*.
- **Strength**: Maratha navy developed into a ferocious force with more than 500 ships. Special among his warships was Sanghameshwari. It was designed such that it could trawl through the shallows.
- **Naval Infrastructure**: Many coastal forts were built such as at Vijaydurg, Sindhudurg and others along the Konkan coast.

What is the significance of using Chhatrapati Shivaji Maharaj's seal in the new Ensign?: Decolonizing the mind

Colonialism devastated cultures and upended societies for profit. The colonial framework enslaved the mind of the people and created a sense of social and racial inferiority. The symbols that are the legacy of their time are also the legacy of the devastation that they caused **changing symbols decolonizes the mind in following ways-**

- **Helps to overcome the prevalent racial inferiority complex:** Colonial symbols indirectly present that colonial legacies and institutions are still honorable and respectable. Changing these symbols on indigenous elements, helps shed the prevalent sense of inferiority.
- **Removes the association between colonialism and the state:** Usage of colonial icons by the state symbolizes colonial characteristics like domination, state superiority etc. Moving away from these icons symbolizes rejection of colonial values and movement towards rule of people.
 - E.g., renaming of Rajpath as Kartavyapath, unveiling of statue of Subhash Chandra Bose at India Gate and creation of Central Vista Project.
- **Rejecting the shadow of colonial comparisons:** A colonized mindset has a tendency to engage in constant comparison with the western world. For example, adoption of similar norms, standards, or development indicators. Symbolic changes will help India set its own benchmark in every domain, instead of following the western world.
- **Developing a sense of pride for indigenous past and legacy:** Symbols carry the potential to resurrect India's superior status via philosophy, art and culture. This helps in decolonization by understanding that the indigenous system wasn't inferior, it was made so due to continuous subjugation by colonizers.

Conclusion

The change in insignia is in keeping with the Bharatiya military's policy of bringing decolonization through changes in military band tunes, pre-independence war honours, mess procedures, and emphasis on Bharatiya war heroes in military studies.

The process of decolonization of India's symbols is long overdue. But in this process, it needs to be ensured that the vacuum created by these symbols is filled in fair, transparent, non-partisan, and secular manner.

8.5. NEWS IN SHORTS

8.5.1. EVIDENCE OF 12,000 YEARS OF HABITATION IN CHENNAI

- Recently, Archaeological Survey of India (ASI) unearthed artefacts on the outskirts of Chennai, suggesting some **12000 years of continuous habitation in the region.**
- ASI found artefacts on the outskirts of **Chennai at Vadakupattu village.** These artefacts give evidence of continuous habitation dating from **Mesolithic age to Pallava period.**
 - **Mesolithic Period:** While the start and end dates of the Mesolithic Period vary by geographical region, it dated approximately from **10,000 BCE to 8,000 BCE.** It is also referred as the **Middle Stone Age.**
 - **Pallava Dynasty:** It existed from **early 4th-century to late 9th-century CE** whose members originated as indigenous subordinates of the Satavahanas in the Deccan, later moved into Andhra, and then to Kanchipuram in Tamil Nadu.
- The excavations found were:
 - **Below surface: Stone tools** including handaxes, scrappers, clevers from the **Mesolithic period** (12000 years ago).

- **Upper layer:** It was rich with **Roman sherds, glass beads, gold ornaments, terracotta toys from Sangam era** (more than 2000 years ago).
- **Surface: Vishnu and Shivling sculptures indicated the early and late Pallava era** (from 1200 to 1800 years ago).

8.5.2. SITTANAVASAL

- ASI has recently undertaken conservation measures at Sittanavasal.
- Sittanavasal or Chithannavasal is a **Jain heritage site in Tamil Nadu.**
- It is a hillock housing:
 - A **second century Rock cave temple** of **Arivar Kovil** (temple of **Arihats**, i.e. Jain Monks who conquered their senses) with **Mahavir statue, meditation hall and Pandya paintings.**
 - ✓ It uses **fresco-secco technique-** a process that dispenses with preparation of the wall with wet plaster).
 - **17 polished rock beds-** collectively known as **Ezhadipattam,**
 - **Burial pots,** known as **Muthumakkal Thazhi,** to bury the Jain monks after death.

8.5.3. REVISIONS IN SCHEDULE TRIBES (STS) LISTS

- Cabinet recently approved the **addition of four tribes to STs list** as part of Constitution (ST) Order (Amendment) Bill 2022.
- **Hatti tribe** in Trans-Giri area of Himachal Pradesh, **Narikoravan and Kurivikkaran hill tribes of Tamil Nadu** and **Binjhia in Chhattisgarh**, were newly added to list.
 - Hattis are **close-knit community** who take their **name from their traditional occupation** of selling home-grown crops, vegetables, meat, and wool etc.
 - **Narikoravan (jackal catchers) and Kuruvikaras (bird eaters)** are **nomadic tribal communities**.
 - **Binjhia, ethnic group found in Odisha and Jharkhand**, have rich heritage of tradition and culture.

8.5.4. ASIA-PACIFIC INSTITUTE OF BROADCASTING DEVELOPMENT (AIBD)

- **India's Presidency of AIBD** has been extended for one more year.
- AIBD is a **regional inter-governmental organisation** of United Nations Economic and Social Commission for Asia and Pacific (**UN-ESCAP**) in field of **electronic media development**.
 - AIBD is mandated to **achieve a vibrant and cohesive electronic media environment in Asia-Pacific region** through policy and resource development.
 - It was established in 1977.
 - **International Telecommunication Union (ITU), UNDP, and UNESCO** are the founding organisations of AIBD.
 - AIBD **currently has 26 countries as full members** represented by 43 organizations and 52 affiliate members.



SMART QUIZ

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9. ETHICS

9.1. CHANGING WORK CULTURE

Introduction

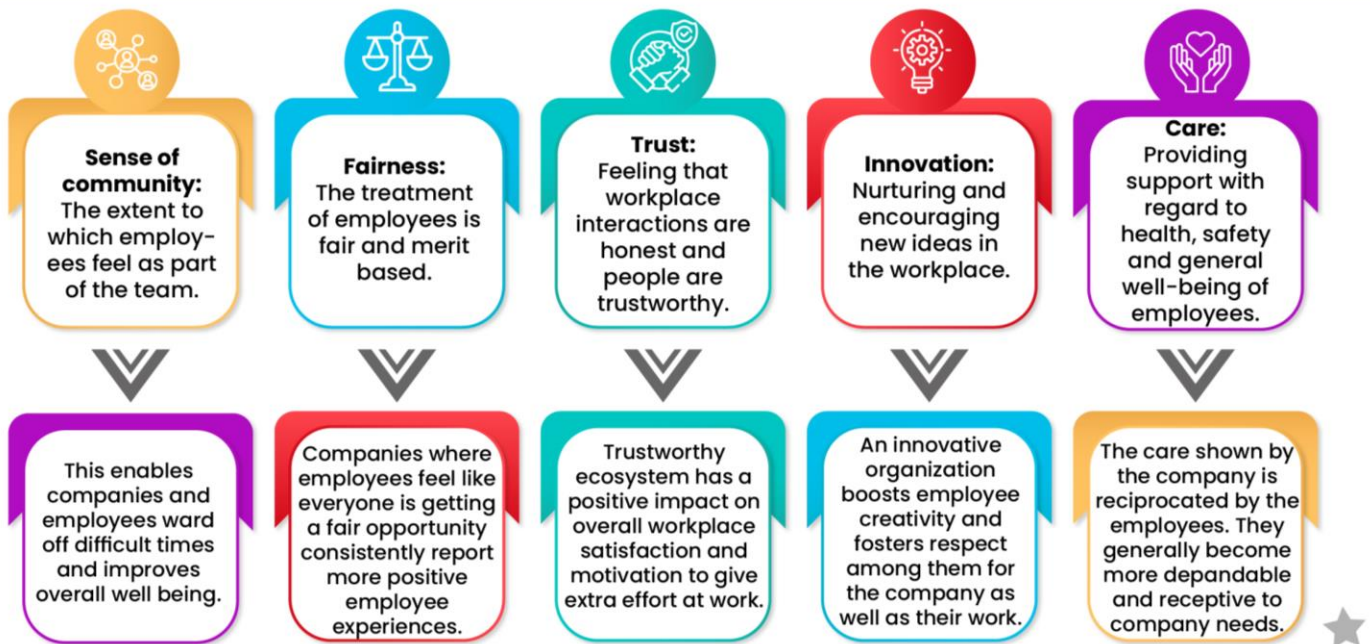
“TCS management makes stand clear on moonlighting.” “Toxic Work Culture Is The #1 Factor Driving People towards Great Resignation.” “Quiet Quitting and Quiet Firing have reiterated the importance of trust in the work culture.”

These headlines showcase the issues emerging with the changing work culture. These changes can be attributed to the permanent effects of the pandemic driven lockdown.

What is work culture?

Work culture is defined as the cumulative effect that **leadership practices, employee behaviour, workplace amenities, and organizational policies** create on a worker. For example, Tata Consultancy services (TCS) invites employee’s families to cultural events and envisages to offer a work-life balance. This can be seen as an example of positive work culture.

Key elements of positive work culture and their importance:



What have been the major changes affecting work culture in the recent times?

- **Remote work:** About 20 to 25 % of the workers are working from home between three and five days a week. This represents four to five times more remote work than before the pandemic.
- **Faster adoption of Automation and Artificial Intelligence:** Companies are stepping up investment in automation and AI significantly and redesigning work processes, which could reduce the share of jobs involving routine tasks.
- **Monitoring through technology:** Employers are using technologies to monitor their employees through methods such as virtual clocking in and out, tracking work computer usage, and monitoring employee emails or chats.
- **Increased work hours:** Pandemic has increased the number of hours employees spend working. It became the norm for many to respond to a quick email, review a report, or perform other tasks at all hours of the day (**always-on work culture**).

These changes have resulted in creation of larger trends in the workplace ecosystem.

| | |
|---|--|
| <p>Moonlighting</p> <p>The growing prevalence of remote work alongside technology has increased the instances of moonlighting.</p> <p>It means taking up a second job or multiple other work assignments apart from one's full-time job without the knowledge of employers after the hours of office.</p> | <p>Quiet Quitting</p> <p>Increased work-hours and blurring of boundaries between work and home ecosystems has prompted Quiet Quitting.</p> <p>It refers to employees doing bare minimum at a job. For example, leaving work exactly at the end of one's shift, demanding additional pay for extra work, and/or setting clear work-life boundaries.</p> |
| <p>Hustle Culture</p> <p>The growing start-up culture has had a spillover effect on overall work culture in the form of Hustle Culture.</p> <p>It is a culture of encouraging employees or workers or labourers to work more than normal hours. Work is on their minds even when they have free time or on holidays.</p> | <p>Quiet Firing</p> <p>The culture of quiet firing has been prevalent for some time, especially in large companies.</p> <p>Making the workplace as unpleasant as possible and encouraging employees to quit or neglecting them through lack of feedback or resources.</p> |

What are the ethical issues arising from these changes?

- **Diminishing sense of community:** Growth in technology along with the growing culture of hybrid work has decreased the sense of community among the employees. This has also aggravated issues like loneliness.
- **Erosion of trust between employees and employer:** The issues like Quiet Quitting and Quiet Firing stem the flow of honest communication between employees and employer. In the long-run, this erodes the trust within the organization.
- **Health issues due to overworking:** The paper in the journal Environment International showed that 745,000 people died from stroke and heart disease associated with long working hours in 2016. That was an increase of nearly 30 per cent from 2000.
- **Rapid Digitalization risks:** Threat to digital well-being has increased. There are sign for anxiety due to digitalization along with cyber security threats.
- **Burnout and issues related to Mental Health:** There is growing concern around mental wellness and the state of mind that is required to think critically, rather than just accept information at face value.

Work and Mental Health issues


- **Insecurity:** Unemployment or unstable or precarious employment, discrimination in the workplace or poor working environments become sources of stress and pose a risk to mental health.
- **Psychosocial risks:** It is associated with negative mental health outcomes, including suicidal behaviours due to negative or toxic work culture.

Strategies to tackle mental health issues

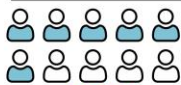
- **Prevent** work-related mental health conditions through psychosocial risk management.
- **Protect and promote** mental health at work, especially through training and interventions that improve health literacy.
- **Create an enabling environment** with cross cutting actions to improve mental health at work.

Mental health at work in numbers

CONTEXT



60%
of the
world population
is in work



61%
of workers work in the
informal economy


207 million
unemployed people are
expected in 2022

PREVALENCE

301 million
people lived with
anxiety
in 2019


280 million
people lived with
depression
in 2019

703 000
people died by
suicide
in 2019



15%
of working-age adults
had a mental disorder in
2019

IMPACT



50%
of total societal cost of mental
health conditions is driven by
indirect costs such as reduced
productivity

12 billion
working days are lost every year
to depression and anxiety

US\$ 1 trillion
cost to the global economy due
to depression and anxiety,
predominantly from lost
productivity

What can be done overcome these issues and create a positive work culture?

- **Aiming at overall well-being:** Success has different meanings for different people. The organization should envisage overall growth of its employees which includes all elements of positive work culture along with monetary compensation.
- **Using technology to simulate reality as far as possible:** Ideas like video-conferencing, shared work platforms and instant messaging can keep the work flow stimulated in a hybrid work environment.
- **Maintaining healthy and clear communication:** The issues like quiet quitting/firing generally arise with expectations on either side are not met. To minimize that, regular and clear communication regarding expectations can be clearly laid out.
- **Transparency in workflow:** Transparency ensures that the responsibilities are clearly assigned, opportunities are provided in fair manner, and credit is given to the deserving employees.

Role of leader to improve work culture

- **Be a role model:** Those at the top must exemplify the culture they preach.
- **Provide an open communication platform:** It is a good way to reinforce the company’s goals and values.
- **Empower employees:** A culture of autonomy allows for more problem solving and greater innovation.
- **Remind workers that failing isn’t fatal:** Leaders can encourage them to learn from what went wrong and make improvements the next time around.
- **Recognise a job well done:** Employees who are openly shown appreciation at work are happier and more productive.
- **Take meaningful action on feedback:** Leaders should work upon the feedback provided by the employees.

“Customers will never love a company until the employees love it first.” - Simon Sinek

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10. SCHEMES IN NEWS

10.1. UDE DESH KA AAM NAGRIK (UDAN)

Why in news?

Recently, UDAN (Ude Desh Ka Aam Nagrik) Scheme has successfully completed 5 years since the launch of its first flight in 2017.

| Objectives | Salient Features |
|---|--|
| <ul style="list-style-type: none"> To make air travel widespread in the country. To facilitate/stimulate regional air connectivity by making it affordable by supporting airline operation through <ul style="list-style-type: none"> Concessions by Central Government, State Governments and airport operators Financial (Viability Gap Funding or VGF) support To provide connectivity to un-served and under-served regions through revival of existing air strips and airports. <ul style="list-style-type: none"> Under-served airports are those which do not have more than 7 flights a week (14 for priority areas), while unserved airports are those where there are no scheduled commercial flights. To generate Employment in the sectors like Airport Operation, Aircraft Maintenance, Air Traffic Control, and Technical Staff. | <ul style="list-style-type: none"> The Regional Connectivity Scheme (RCS)- Ude Desh Ka Aam Nagrik (UDAN) is a flagship scheme of the Ministry of Civil Aviation. It was initiated on 21st October 2016 to fulfill the aspirations of the common citizen by following the vision of 'UdeDeshkaAamNagrik'. Airports Authority of India (AAI) is designated as implementing agency. It is a key component of National Civil Aviation Policy, 2016. The scheme would be in operation for a period up to 10 years from the date of notification of the Scheme Version 1. 0. It has a unique demand and market-based model to develop regional connectivity. <div data-bbox="634 800 1503 1640" data-label="Diagram"> <p>Performance of UDAN</p> <ul style="list-style-type: none"> 58 Airports, 8 Heliports & 2 Water Aerodromes have been connected 954 routes have awarded to connect 156 airports 220 destinations under UDAN are targeted to be completed by 2026 425 new routes initiated under the scheme More than one crore passengers have availed the benefits of this scheme </div> <ul style="list-style-type: none"> RCS will be operational only in States and at airports/aerodromes/ helipads which commit and support the scheme by providing concessions as required in the scheme. Airfares on regional flights are capped at ₹2,500/ hour of approximately 500 km on an aircraft or for a 30 min on helicopter. Airlines have to provide 50% of the seats (minimum of 9 and a maximum of 40 UDAN Seats) at subsidized rates. Remaining 50% seats will be priced at market rate. |

- For helicopters, if seats are less than or equal to 13 then it is required to provide 100% as RCS seats, but if capacity is more than 13 then maximum 13 will be considered as RCS seats.
- Support in the form of **Concessions and Viability Gap Funding** will be provided to selected operators for RCS routes under the scheme.
 - **Centre will share 80% of the VGF** collected by charging a levy of up to ₹8,500 on each departing flight of domestic airlines and the rest **20% will come from the respective state governments** (other than NE states, UK, HP and UTs which will contribute 10%). **Regional Connectivity Fund would be created** for this purpose.
 - For routes classified as State RCS Routes and Lakshadweep Specific Route, the **State Governments and Ministry of Home Affairs respectively, shall be responsible for reimbursing 100% of the VGF** under the scheme.
 - State governments must provide free security and fire service, utilities at concessional rates, free land for RCS airports etc.
 - Airport/Aerodrome/Helipad operators: **No landing charges, parking charges and Terminal Navigation Landing Charges will be imposed for RCS flights** etc.
- In case any rehabilitation/upgradation of infrastructure is required at airports/water aerodromes/helipad to make them operational for RCS operations, it can be undertaken by AAI upon payment of required costs from respective State Government/airport/ Water Aerodrome/Helipad operator. However, ownership will not change.

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CIVIL SERVICES EXAMINATION - 2022

Starts:
11th Oct

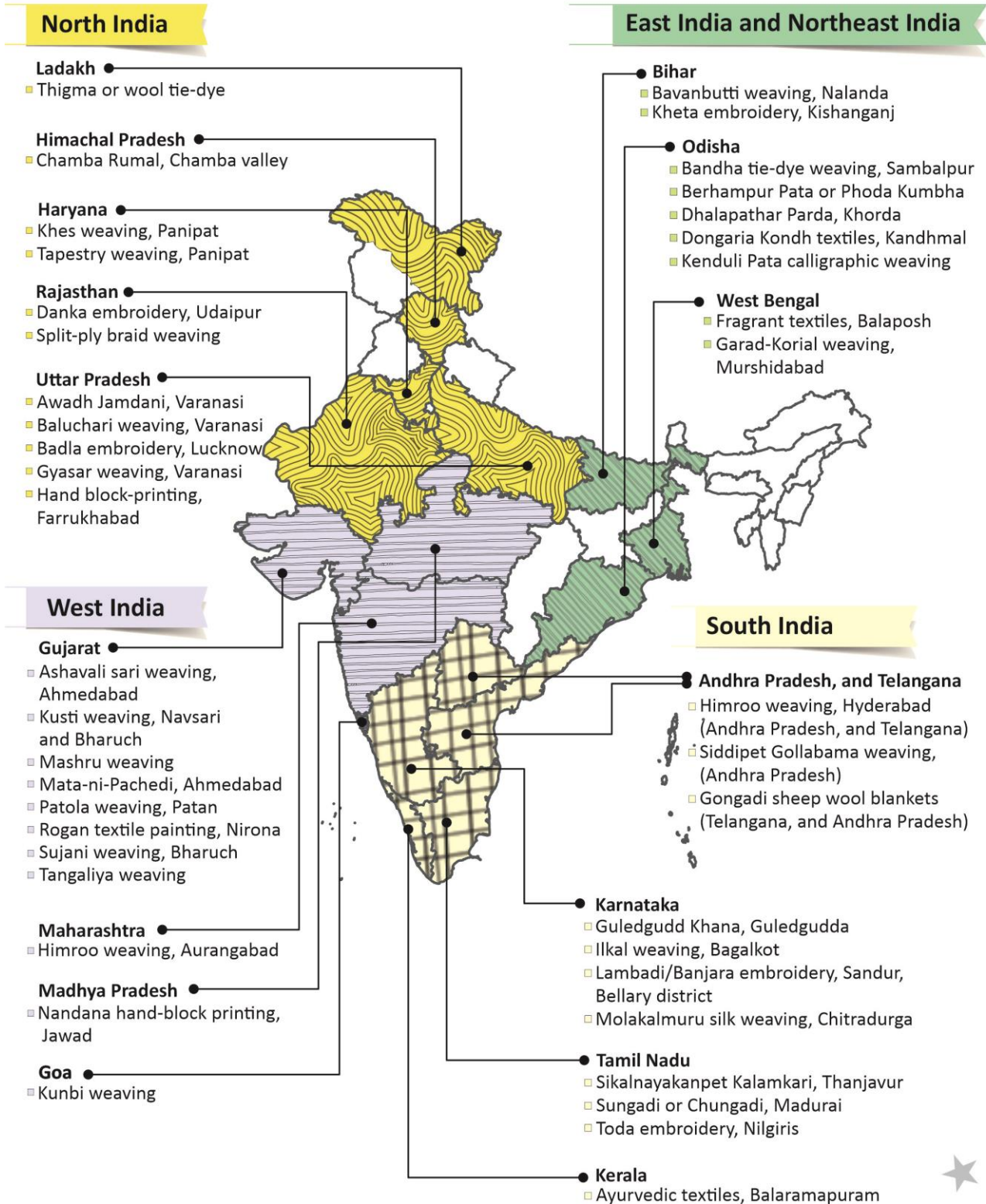
Programme Features

- ★ DAF Analysis Session with senior faculty members of Vision IAS
- ★ Mock Interview Session with Ex-Bureaucrats/ Educationists
- ★ Interaction with Previous toppers and Serving bureaucrats
- ★ Performance Evaluation and Feedback

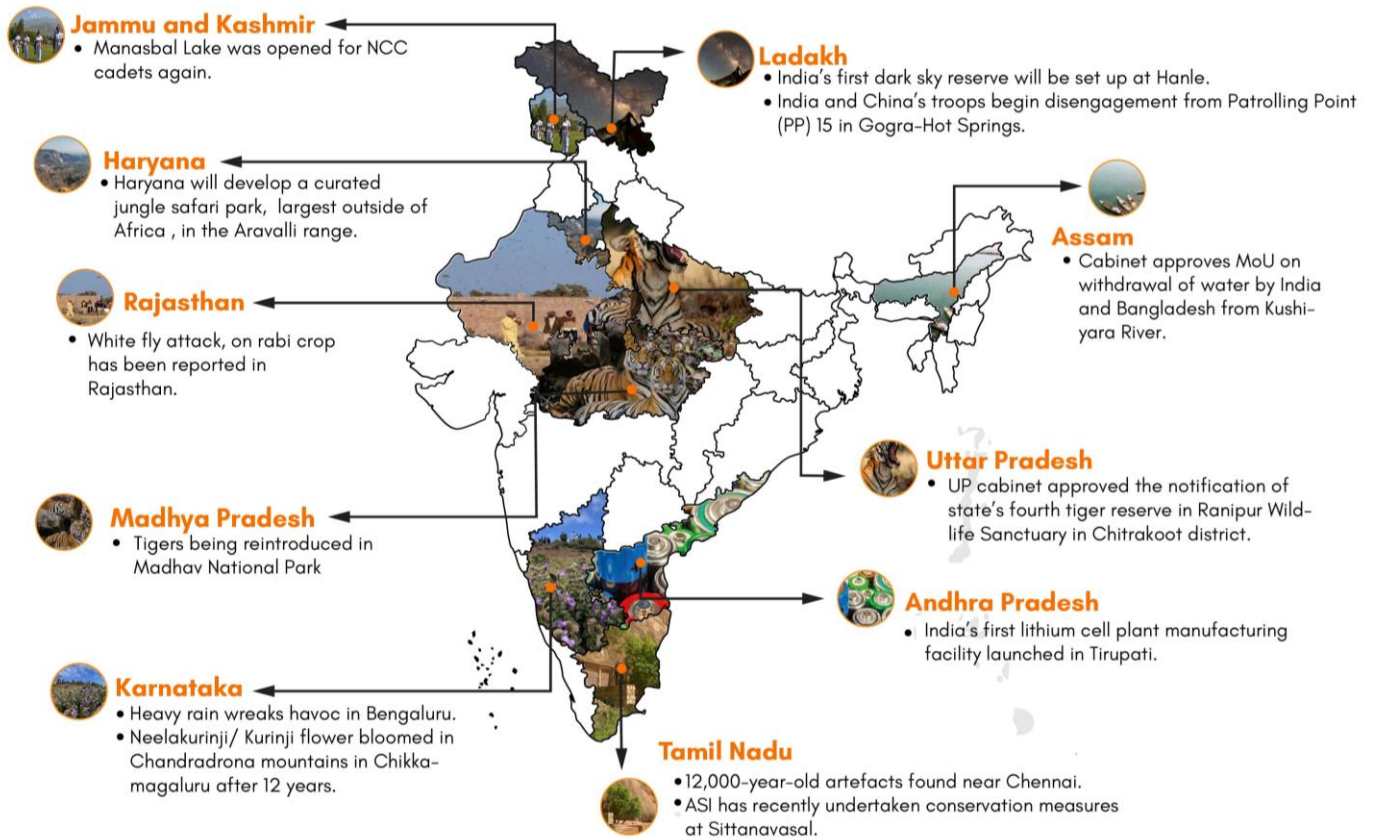


APPENDIX: HERITAGE TEXTILE CRAFTS OF INDIA

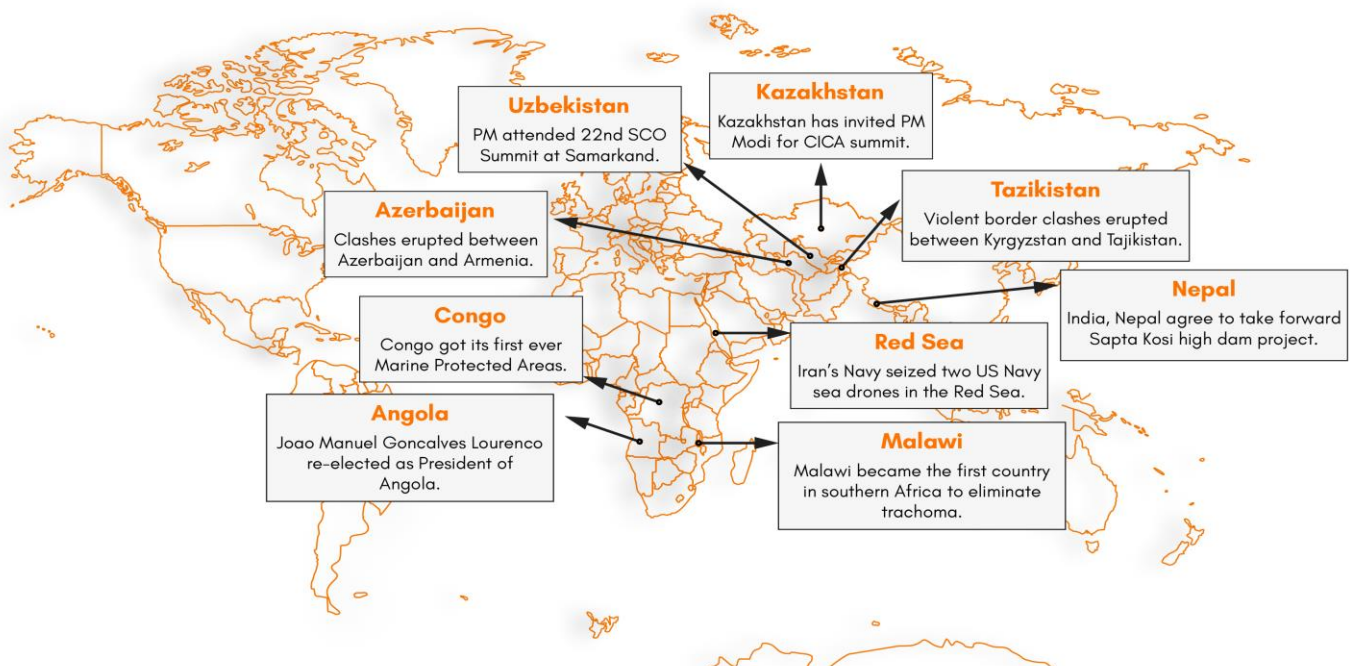
Appendix: List of Heritage Textile Crafts of India








Places in News: India



Places in News: World











Personalities in News

| Personality | About | Ethical Values Exhibited by the personality |
|--|--|---|
|  <p>Dara Shikoh</p> | <ul style="list-style-type: none"> ● Vice-President released the Arabic Version of Majma Ul-Bahrain of Dara Shikoh. <ul style="list-style-type: none"> ▫ Majma-ul-Bahrain (which means 'Confluence of Two Oceans') throws light on the similarities between Hinduism (Vedanta) and Islam (Sufism). ● He was eldest son of Shah Jahan and was executed after losing the war of succession against his brother Aurangzeb. ● He is described as a "liberal Muslim" and showed keen interest in Sufi mysticism and was initiated into the Kadiri order of Sufis by his pir (spiritual guide), Mulla Shah. ● He translated into Persian the Bhagavad Gita as well as 52 Upanishads, which were earlier known only to a few upper caste Hindus. ● Other Famous works: Safinat-ul-Awliya, Risala-i-hak Numa, Shathiyat or Hasanat-ul-Arifin and Iksir-i-Azam, Jug Bashist and Tarjuma-i-Akwal-i-Wasili. | <ul style="list-style-type: none"> ● Assimilation and Harmony <ul style="list-style-type: none"> ▸ He developed a deep understanding and knowledge of major religions, particularly Islam and Hinduism, is known as a pioneer of the academic movement for interfaith understanding in India. ▸ He not only discovered commonalities but even said that the foundation of the two religions is the same, which is the belief, "One Reality and One God". |
|  <p>Puli Thevar (1715 to 1767)</p> | <ul style="list-style-type: none"> ● He was a Tamil warrior and the leader of western poligars who revolted against Mohammed Ali, the Nawab of the Carnatic. ● He is one of the earliest opponents of the British rule in South India. <ul style="list-style-type: none"> ▫ He is also regarded by some is regarded as the first ruler in Indian history, who sowed the seed, by his gallant resistance, to expel foreigners from his native land. | <ul style="list-style-type: none"> ● Bravery and Fearlessness <ul style="list-style-type: none"> ▸ From 1750 to 1766, for 16 years, Puli Thevar was undefeated in every battle against the Anglo-Nawab forces. ▸ He refused to pay the Nawab the customary rice tribute, and the area became known as Nelkatumseval, or "place that does not pay rice tribute." |
|  <p>Vallinayagan Olganathan Chidambaram Pillai (1872-1936)</p> | <ul style="list-style-type: none"> ● The freedom fighter from Tamil Nadu is popularly known as 'Kappalottiya Tamizhan' (The Tamil Helmsman). Bal Gangadhar Tilak was his guru. ● In 1906, he started the Swadeshi Steam Navigation Company to break the monopoly of British shipping in the Indo-Ceylon waters. ● On 13th March, 1908 the people of Tirunelveli retaliated against his imprisonment for leading a strike in the British owned Coral Mills at Tuticorin. Now this day is observed by as Tirunelveli Uprising Day. ● Literary work: Commentary on the Thirukural, compiled ancient works of Tamil grammar (Tholkappiam), and wrote a biography on Bal Gangadhar. | <ul style="list-style-type: none"> ● Patriotism and Zeal <ul style="list-style-type: none"> ▸ He aimed at expanding the reach of Swadeshi in the country and making the common Indian man aware of the faulty British government. ▸ He provided a strong leadership and zeal to trade unions functioning in his native state Tamil Nadu and also fought for India's freedom from the British. |
|  <p>Madam Bhikaji Cama (24 September 1861 - 13 August 1936)</p> | <ul style="list-style-type: none"> ● Contribution <ul style="list-style-type: none"> ▫ Active member of Abhinav Bharat (Revolutionary freedom fighter group) and often called as Mother of Indian Revolution. ▫ Assisted Shyamji Verma in establishment of India House in London. ▫ Founded the Paris Indian Society. ▫ Unfurled the first version of Indian National flag at International Socialist Conference in Germany in 1907. ▫ Launched the weekly periodical 'Bande Mataram and Madan's Talwar in 1909. | <ul style="list-style-type: none"> ● Patriotic and Indomitable spirit <ul style="list-style-type: none"> ▸ Bhikaji was a nationalist at heart and believed that the Britishers had ruthlessly exploited India for their own profit. ▸ Unshaken by the difficulties thrown by British government, she continued to maintain active contacts with Indian, Irish, and Egyptian revolutionaries as well as with French Socialists and Russian leadership for the cause of freedom struggle |
|  <p>Dr. Sarvepalli Radhakrishnan (1888-1975)</p> | <ul style="list-style-type: none"> ● He was a renowned Indian philosopher born in Tiruttani, Tamil Nadu, he became India's first Vice-President and second President. ● Since 1962 his birth anniversary has been celebrated as national Teachers' Day. ● Books Authored by him: The Philosophy of Rabindranath Tagore, The Reign of Religion in Contemporary Philosophy, Indian Philosophy, The Philosophy of the Upanishads, etc. ● Awards: Bharat Ratna (1954), the Peace Prize in the German Book Trade in 1961, appointed a Knight Bachelor in 1931 | <ul style="list-style-type: none"> ● Leadership and Scholar <ul style="list-style-type: none"> ▸ He introduced the thinking of western idealist philosophers into Indian thought. He placed Indian philosophy on world map. ▸ He was an educator who made significant contributions to the realm of education. The report of the University Education Commission 1940-49 is greatest contribution to educational thinking and practice. |
|  <p>Shaheed Bhagat Singh (27 September 1907 - 23 March 1931)</p> | <ul style="list-style-type: none"> ● Chandigarh airport is renamed Shaheed Bhagat Singh International Airport as a tribute to the freedom fighter on his 115th birth anniversary ● Birth: In Banga village of Faisalabad district, now in Pakistan's Punjab province. ● Education: Dayanand Anglo-Vedic High School and National College in Lahore. ● 1926: established the 'Naujawan Bharat Sabha (Youth Society of India). ● 1929: Bombed the Central Assembly Hall in Delhi, and shouted the slogan of "Inquilab Zindabad!" with Batukeshwar Dutt to oppose the Public Safety Bill and Trade Dispute Bill. ● Books: Why I am an atheist, Jail diary | <ul style="list-style-type: none"> ● Patriotism, Courage and Socialism <ul style="list-style-type: none"> ▸ Being a freedom fighter, he stood for patriotic values and socialism. ▸ He furthered the goals of freedom movement by his revolutionary thinking and courageous acts. He was arrested and given death penalty by Britishers for his revolutionary zeal to oppose them |

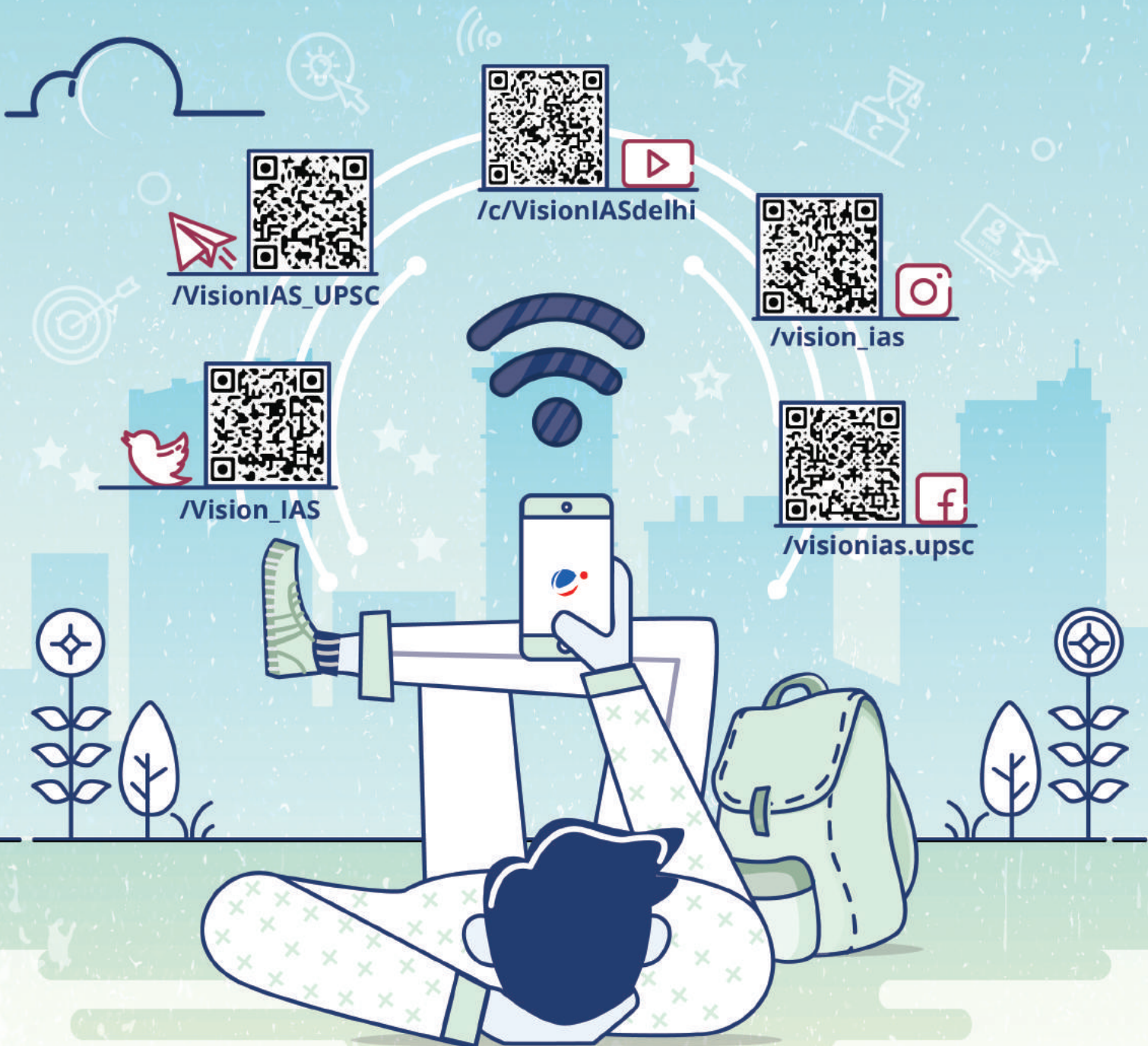
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