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FOUNDATION COURSE GENERAL STUDIES PRELIMS CUM MAINS 2025, 2026 & 2027

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

- Includes 70 Pre Foundation Classes
- Includes comprehensive coverage of all the topics for all the four papers of GS Mains, GS Prelims & Essay
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- Includes All India GS Mains, GS Prelims, CSAT & Essay Test Series
- Our Comprehensive Current Affairs classes of PT 365 and Mains 365 of year 2025, 2026 & 2027

ONLINE Students

NOTE - Students can watch LIVE video classes of our COURSE on their ONLINE PLATFORM at their homes. The students can ask their doubts and subject queries during the class through LIVE Chat Option. They can also note down their doubts & questions and convey to our classroom mentor at Delhi center and we will respond to the queries through phone/mail.

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PERSONALITY DEVELOPMENT PROGRAMME CIVIL SERVICES EXAMINATION - 2023

ADMISSION OPEN

FEATURES OF THE PERSONALITY DEVELOPMENT PROGRAM



Pre-DAF Session: For a nuanced understanding of DAF entries and how to fill it mindfully to reflect desired personality traits.



Mock Interview Sessions: With Senior Faculty, Ex-Bureaucrats and Educationists for enhanced Interview readiness and instilling confidence.



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GENERAL STUDIES

PRELIMS CUM MAINS

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NOTE:

Dear Students,

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



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



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



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



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

1. POLITY AND GOVERNANCE

1.1. ELECTORAL FUNDING

Why in the news?

Recently, the Supreme Court directed the Election Commission of India (ECI) to **submit data on the electoral bonds received by political parties** till September 30, 2023.

More on news

- In **2019**, while hearing the **Association for Democratic Reforms' (ADR)** petition against the Electoral Bond Scheme, the SC asked the ECI to submit data on electoral bonds received by political parties.
 - ECI received status reports from 105 parties.
 - State Bank of India has revealed that **only 25 political parties have opened the bank accounts necessary to receive electoral bonds.**

Status of Electoral Funding

- According to data collected by ADR, **69% of the total income of political parties** during the 11-year period between **FY 2004-05 and 2014-15** was from 'unknown sources'.
- Sources of Income of National Parties for FY 2021-22:**
 - 66.04% - Income from Unknown Sources** (as per the Annual Audit Reports)
 - 23.74% - Income from Known Sources** (donation details declared to ECI)

Concerns associated with Electoral Funding

- Huge expenditure:** Lok Sabha 2019 elections have been termed as the '**most expensive election ever, anywhere**'.
 - As per the Centre for Media Studies report, nearly Rs 55,000-60,000 crore was spent during the 2019 elections.
- Disrupts Level playing field:** The increased use of money power in the election **disrupts the level playing field**.
 - It actively **deters small political parties and independent candidates** from taking part in the elections.
- Increased Cash Transactions:** Electoral funding in the form of cash transactions is widespread in India making it **difficult to trace the sources of funds increasing corruption and reducing transparency**.
 - As per rules currently, **political parties do not have to disclose all donations below Rs 20,000.**
- Corporate and political parties' nexus:** Corporate donations of political parties have been growing significantly.

IMPACTS OF SUCH FUNDING



Results in rise of demand for **Black money.**



Parties' preference for candidates who can **finance their own elections.**



Distorts the **level playing field.**



Criminalization of politics.

Electoral Bonds (EBs)

- EBs are **interest-free bearer bonds or money instruments** that can be **purchased by companies and individuals** in India from **authorised branches of State Bank of India (SBI).**
- Announced in **Union Budget 2017-2018.**
- Sold in multiples of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh, and Rs 1 crore.**
- Purchased through a KYC-compliant account** to make donations to a political party.
- No cap on number of EBs** that a person or company can purchase.
- Available for **purchase for a period of 10 days** each in **January, April, July and October.**

Benefits of EBs

- Promote transparency** by ensuring that **political parties receive donations through formal banking channels.**
- Identity of donors remains confidential**, reducing the risk of retaliation or intimidation for their political affiliations.
- All transactions of EBs are **carried out via cheques or digitally.**

Concerns associated with EBs

- Lack of transparency** regarding the source of funds.

- **Violates** citizen's fundamental **right to information under Article 19 (1) (a)** about political parties.
- Anonymous donation may compromise with principle of free and fair election.
- **Shell companies can be used to fund political parties** as 7.5% annual profit limit has been removed, also Indian subsidiaries of foreign companies have been allowed to donate funds.

Way forward

- **State funding of elections:** Various committees such as the **Indrajit Gupta Committee (1998)** endorsed state funding of elections to **establish a fair playing field for parties with less money.**
- **Transparency:** Details of all donors should be made available for public scrutiny under RTI as practised in countries like **Nepal, Germany, France, USA** and Japan to bring transparency in election funding.
- **Proactive Disclosure: Mode of payment of all donations** (above and below Rs 20,000), membership fees, etc. **can be declared by the parties** in the 'Schedules' of their audit reports, submitted annually to the Income Tax department and ECI.
 - Further, Scrutiny of financial documents submitted by the political parties should be **conducted annually by a body approved by CAG and ECI** to enhance transparency and accountability.
- **Tax exemption:** ECI has recommended that tax exemption be awarded only to those political parties which contest and win seats in Lok Sabha/ Assembly elections.
 - ECI has also recommended that **details of all donors who donate above Rs 2,000 be declared in the public domain.**
- **Bringing Political Party under the ambit of RTI:** National and regional political parties must provide all information under the RTI Act to **strengthen political parties, elections and democracy.**

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

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



1.1.1. ELECTORAL LITERACY

Why in the news?

Recently, ECI signed an MoU with the Ministry of Education to bring **Electoral Literacy to Classrooms** across the country.

Salient features of MoU on Electoral Literacy

- Systematically **integrating voter education and electoral literacy into the curriculum**, starting from classes 6 to 12 in all schools.
 - Electoral Literacy includes:
 - ✓ **information on government;**
 - ✓ **principal economic, social and political issues** that the nation is facing;
 - ✓ **the value of democracy** and
 - ✓ **equal rights of women and men** among others.
- Fosters a **sense of responsibility within State Education Departments** for establishing **Electoral Literacy Clubs (ELCs)** in schools and colleges.
- **Designate one of the rooms** in every senior secondary school as the '**Democracy Room**' for regular display of voter education materials and conduct of **Continuous Electoral and Democracy Education (CEDE)** activities throughout the year.

Importance of Electoral Literacy



Educate children about election process since childhood and importance of voting



Help in smooth conduction of election in a diverse country like India



Address urban and youth apathy, leading to better electoral participation in general elections



Preparing future voters for ethical electoral participation and in effect strengthening democracy

- **NCERT will introduce and update textbooks to include content on electoral literacy** and will advise State Education Boards and other Boards to follow suit.

Initiatives taken to promote Electoral Literacy

- **Systematic Voter Education and Electoral Participation (SVEEP) program:** Flagship program of ECI for voter education, **spreading voter awareness and promoting voter literacy** in India.
- **Electoral Literacy Clubs (ELCs):** ELCs were **set up in institute campuses across country** by ECI under SVEEP campaign.
 - ELC is a **platform to engage school students** through interesting activities and sensitise them on their electoral rights and familiarise them with electoral process of registration and voting.



Way forward

- **Teacher's training:** Organising seminars to train teachers for effectively imparting electoral literacy to students.
- **Campaigns:** Regular campaigns can be organised by the state election commission to enhance electoral literacy among the masses.
- **Increasing funding and coordinating with NGOs and Gram Sabhas** to augment Electoral Literacy programs in the rural areas.

ECI's Strategic Plan on Electoral Literacy 2016-2025

- **Enhance voter awareness** and promoting Ethical Electoral Participation.
- **Continuous Education in Electoral Democracy** by Developing tools and content.
- **Building Partnerships for wider Engagement.**

1.2. ROLE OF GOVERNOR

Why in the News?

Recently, Kerala, Tamil Nadu and Punjab moved the Supreme Court against their respective Governors over the pending bills.

More on the News

- The Kerala government has claimed inaction on the part of Governor in relation to eight Bills passed by the Assembly. Of these, **some bills have been pending** with the Governor for more than two years.
- In Punjab, three **money bills were withheld** by Punjab Governor.
- Tamil Nadu petition mentions **12 bills as pending** with the Governor, apart from delay in approving the **transfer of investigation** to the CBI in various cases.

Constitutional Provisions for Governor

- **Provisions regarding bills:** Under **Article 200**, the assent of the Governor is necessary for a bill to become a law. In this regard, the Governor has been given some options (refer table).

Governor's Options	Status of Bill
Give assent to the bill	• Bill becomes a law
Withhold the assent	• Bill fails to become a law
Return the bill for reconsideration of the legislature as soon as possible	• If the State Legislature passes the bill in its original shape or in a modified form, the Governor has to give the assent to re-enacted bill .

	<ul style="list-style-type: none"> The Constitution does not lay down any time limit within which the Governor is required to return the bill for reconsideration. It only insist on 'as soon as possible'.
Reserve the bill for the consideration of the President	<ul style="list-style-type: none"> President can either give his/her assent or withhold the assent. President may direct the Governor to return the bill to state legislature with his/her message. Such bill, if re-enacted by the state legislature with or without amendment, is presented again to the President.

- **Reserving bill for President:** In one case such reservation is **obligatory**, that is, where the bill passed by the state legislature endangers the position of the state high court.
 - In addition, the governor can also reserve the bill if it is of the following nature:
 - ✓ Ultra-vires, that is, against the provisions of the Constitution.
 - ✓ Opposed to the Directive Principles of State Policy.
 - ✓ Against the larger interest of the country.
 - ✓ Of grave national importance.
 - ✓ Dealing with compulsory acquisition of property.
- **Discretionary powers:** **Article 163** states that except when required to exercise his/her functions in his/her discretion, the Governor is bound by the aid and advice of the Council of Ministers.
 - If any question arises whether **Governor is required to act in his/her discretion, the decision of the Governor in that regard is final.**
 - However, Supreme Court in **Nabam Rebia case (2016)** held that if a governor exercised his discretion beyond his jurisdiction or power, it would **fall under the subject matter of judicial review.**

Recent judgements regarding role of Governor

- **SR Bommai Case (1994):** The court held that the Governor's power should be **exercised in rare and exceptional circumstances** and that the subjective satisfaction of the Governor should be open to judicial review.
- **Shamsher Singh Case (1974):** Supreme Court held that the Governor does not exercise their discretionary powers while withholding assent or returning a Bill to the State Legislature. They are required to act as per the advice of the Council of Ministers.
- **Recent Judgements:**
 - **State of Punjab Case (2023):** If a Governor decides to withhold assent to a Bill, then he/she has to return the bill to the legislature for reconsideration. Such bill cannot be kept with the Governor indefinitely.
 - ✓ Supreme Court observed that Governor has only three options as per Article 200 - granting assent, withholding assent or referring to the President- and that **after exercising any of these options, he/she cannot then exercise another option.**
 - **Vice Chancellor Case (2023):** SC underlined that Governors acting in their statutory capacity as University Chancellor are not bound by the aid and advice of the council of ministers.
 - **Tamil Nadu Governor case (2023):** SC stated that Governor cannot refer the bills to the President after the Assembly has re-enacted the Bills following the Governor's declaration of withholding the assent.

Various issues concerning Governor's role

- **Pending decisions:** Delays in assent to legislations and crucial appointments leads to a constitutional deadlock and disrupts parliamentary democracy.
- **Political Interference:** There have been instances where Governor have been accused of political bias, especially in cases of government formation and use of discretionary powers.
- **Administrative inefficiency:** Friction between Governor and state government, especially where there is political difference sometimes leads to deadlock in administrative decisions and appointments.
- **Burden on judiciary:** Disputes arising from the Governor's exercise of discretionary powers or their actions regularly leads to legal challenges and interpretations.

Way Forward - Recommendations of different commissions

- **Sarkaria Commission:** It is **only under rare circumstances that the Governor may exercise their discretion**, where they feel that the provisions of the Bill will **contravene the provisions of the Constitution** and therefore, should be reserved for the consideration of the President.
 - In such exceptional cases, the Governor must discharge his functions under Article 200 **as per the advice of ministers**.
 - Governor appointee should be a **detached outsider** and a person of eminence in some walks of life.
 - Governor should **not act as an agent of the President** and should not be removed from office merely on the ground that the new government at the center desires a Governor of its choice.
- **Punchhi Commission:** Governor should take a decision with respect to a Bill presented for his/her assent within a period of six months.
 - Governors are expected to be **independent**, and to act in a manner devoid of any political consideration.
 - The Governor should have a **fixed term of five years**, and removal should be through a resolution passed by the state legislature.
- **Venkatachaliah Commission:** The Governor should make use of the advice of the Council of Ministers in the day-to-day administration of the state.

1.3. SPECIAL AND LOCAL LAWS (SLL)

Why in the news?

Recent tabling of Bills on criminal laws **has kept Special and Local Laws (SLL) away** from the ongoing reform process.

About Special and Local Laws (SLL)

- A “**special law**” is a law applicable to a particular subject covering specific issues.
 - **Example:** Unlawful Activities (Prevention) Act, 1967 (UAPA).
- A “**local law**” is a law applicable only to a particular part of India.
 - **Example:** Maharashtra Control of Organised Crime Act (MCOCA), 1999
- Cognizable crimes are broadly categorized as those falling either under the ‘Indian Penal Code (IPC)’ or under the ‘Special and Local Laws (SLL)’
 - **Cognizable offence** is defined as the one which an officer in charge of a police station **may investigate without the order of a magistrate** and effect arrest without warrant.



Significance of SLLs

- **High Case of Registration:** As per the Crime in India Statistics of 2021 **nearly 39.9%** of all cognisable offences registered in 2021 were under SLLs.
- **Efficiency in Enforcement:** Special laws enable law enforcement agencies to focus on particular types of criminal activities, allowing for more effective and specialized investigation and prosecution.
 - **For e.g.:** - Narcotic Drugs and Psychotropic Substances Act, 1985
- **Protection of Vulnerable Groups:** Some special laws are enacted to protect specific vulnerable groups, such as children, women, and marginalized communities.
 - **For e.g.:** - Protection of Children from Sexual Offences Act (POCSO), 2012
- **Technological Advancements:** Special laws can address crimes arising from technological advancements, such as cybercrime.
 - **For e.g.:** - Information Technology Act, 2000

Need for Reforms in SLLs

- **Unclear definitions:** Ambiguous and vague definitions of offences and terms such as 'terrorist act', 'unlawful activity', 'organised crime', 'organised crime syndicate' etc in MCOCA, Unlawful Activities (Prevention) Act
- **Applicability dilemma:** The Protection of Children from Sexual Offences Act, 2012 (POCSO) is increasingly being criticised for its applicability to consensual sexual activities between minors
- **Clarity Issue:** Concerns raised regarding categorisation of matter falling under criminal or civil wrong doing.
- **Dilution of due process:** Universally accepted **due process values** are increasingly being diluted
 - For e.g.: - Increased **powers of search and seizure** under of the UAPA and the admissibility of confessions recorded by police officers under MCOCA.
- **Stringent provisions:** Provided under UAPA, Narcotic Drugs and Psychotropic Substances Act, makes the granting of bail an impossibility.

Way forward

- **Separate Chapter & procedure:** All SLLs which criminalise/seek to criminalise a conduct should find a place as separate chapters & procedure within the larger structure of the penal code.
- **Due Process Safeguards:** Strengthen the implementation of universally accepted due process values by conducting regular training programs for legal professionals and law enforcement agencies.
- **Enhancing Categorization Clarity:** Introduce guidelines or amendments to provide clarity on categorization between criminal and civil wrongs.
- **Emerging Crimes and Threats:** New types of crimes, such as cybercrimes and terrorism, constantly emerge. Reforms are needed to equip legal systems with the necessary tools to address these evolving threats effectively.

1.4. RIGHT TO INFORMATION (RTI)

Why in the news?

Recently, the Supreme Court directed the Centre and State governments to fill the vacancies in the Central Information Commission (CIC) and State Information Commission (SIC).

More on the news

- SC stated that non-fulfilment of these vacancies will make the **Right to Information (RTI) Act 2005** a "dead letter".
- Despite the **2019 judgment of the Supreme Court in Anjali Bhardwaj and Ors v. Union of India**, the vacancies in the Central Information Commission and State Information Commissions had not been filled.
 - This has led to a **large number of pending cases and long delays in the disposal of appeals/complaints**.

Central Information Commission (CIC) and RTI (Amendment) Act, 2019

- CIC, a **statutory body**, has been constituted with **effect from 2005 under RTI Act, 2005**. Jurisdiction of Commission extends over all Central Public Authorities.
- According to **RTI (Amendment) Act, 2019**, the central government will notify the term and quantum of salary of CIC and ICs (at both central and state level) through rules.
 - **The Right to Information Rules, 2019** notified that the CIC and ICs will **hold office for a term of 3 years**.
 - **Earlier, the 2005 Act** gave them a **fixed tenure of 5 years** or a **retirement age of 65 years**, whichever is earlier.
 - Amendment was done to ensure that **ICs can use their powers even with senior-most officers of the administration** without any fear of their jobs.

About the Right to Information (RTI)

- RTI means that **any Indian citizen can request any information** (which is supposed to be public knowledge) **from offices and departments** of state or central governments.
- In 1986, the Supreme Court through its judgement in **Mr. Kulwal v/s Jaipur Municipal Corporation case** directed that **freedom of speech and expression provided under Article 19 of the Constitution implies RTI**, as without information freedom of speech and expression cannot be fully used by citizens.
 - It **replaced Freedom of Information Act, 2002**.

- Nodal agency responsible for the implementation of the RTI Act is the **Department of Personnel and Training (DoPT)** under the **Ministry of Personnel, Public Grievances and Pensions**.
- **Key Provisions of RTI Act, 2005:**
 - **Section 2(h): Public authority** means any authority or body or institution of self-government established or constituted-
 - ✓ by or under the **Constitution**;
 - ✓ by any other **law made by Parliament/State Legislature**.
 - ✓ by **notification issued or order made by the appropriate Government**, and includes any
 - body owned, controlled or substantially financed;
 - non-Government organisation substantially financed, directly or indirectly by funds provided by the appropriate Government.
 - **Section 4(1)(b):** Lays down **information which should be disclosed by Public Authorities on a suo motu or proactive basis**.
 - **Section 6 (1):** A person, who desires to **obtain any information**, shall make a request in writing or through electronic means to the Central Public Information Officer (PIO) or State PIO.
 - **Section 7:** Fixes the **time limit** for providing information(s) by PIOs.
 - **Section 8: Exemption** from disclosure of information.



Exemptions under RTI Act 2005

- Recently, Central government through **DoPT** issued a **notification under section 24 (2)** of RTI Act, 2005 to **exempt** Indian Computer Emergency Response Team (**CERT-In**) from **purview of RTI Act** and **added CERT-In in Second Schedule of RTI Act**.
 - **Section 24 of RTI Act** says that this law is **not applicable to the intelligence and security organizations** specified in Second Schedule.
 - ✓ However, information pertaining to **allegations of corruption and human rights violations shall not be excluded**.
 - **Second Schedule** includes, under its ambit institutions like **RAW, IB**, etc. After inclusion of **CERT-in**, it has **27 agencies**.

Other exemptions under RTI Act 2005 includes-

- **Section 8(1):** Lists all of the exemptions
 - Information, disclosure of which would prejudicially **affect sovereignty and integrity of India**, security, strategic, scientific or **economic interests of State**, relation with foreign State or lead to incitement of an offence;
 - Information which may **constitute contempt of court**;
 - Information that would cause a **breach of privilege of Parliament or State Legislature**;
 - Information including **commercial confidence, trade secrets or intellectual property**, disclosure of which would harm competitive position of a third party, **unless competent authority is satisfied** that larger public interest warrants disclosure of such information;
 - **Information available to a person in his fiduciary relationship**, unless competent authority is satisfied that larger public interest warrants disclosure of such information;
 - Information **received in confidence from foreign government**;
 - Information, the disclosure of which would **endanger life or physical safety of any person**;
 - Information which would **impede the process of investigation or apprehension or prosecution of offenders**;
 - **Cabinet papers** including records of deliberations, which come under specified exemptions;
 - **Information which relates to personal information** the disclosure of which has not relationship to any public activity or interest, or which would **cause unwarranted invasion of the privacy**.
- **Section 8(2):** Information exempted under sub-section (1) and Official Secrets Act, 1923 can be disclosed **if public interest in disclosure outweighs the harm to protected interest**.

Concerns associated with implementation of Right to Information (RTI)

- **Poor record-keeping:** RTI applicants have been denied information due to factors like **lack of records; records are not in a proper format or have gone missing**.

- Information was denied especially in case **information was sought on buildings, land titles, and transfer of officers** among others.
- **Lack of infrastructure and staff:** As per the Commonwealth Human Rights study, the **total number of RTI pleas rose by 83%** between 2012-13 and 2018-19.
 - However, CPIOs mandated to handle them increased by only about 13% highlighting a **shortage of staff to handle the increased RTI applications**.
 - Also, ICs in **Manipur, Chhattisgarh, Maharashtra, Bihar, and Punjab** are **functioning without a CIC**.
- **Huge pendency and delays:** Backlog of appeals and complaints in many commissions across the country has resulted in inordinate delays in the disposal of cases, which render the law ineffective.
 - As per Satark Nagrik Sangathan study, **approx. 3.14 lakh appeals and complaints were pending** as of June 2022.
- **Threat and Violence:** In the last 15 years, more than 80 people who had filed RTI applications have been killed while 175 others have been attacked, and several applicants reported being harassed.
- **Lack of awareness:** Since its enactment, there has been a lack of awareness among the masses about their rights under the RTI Act, leading to **underutilization of the law** especially in rural India.

Way forward

- **Filling up the vacancy:** Enhance the number of CICs and ICs to **quickly dispose of pending cases** and manage the increased workload effectively.
 - Also, **vacant posts must be filled within 3 months** as mandated by the Supreme Court in 2019.
- **Awareness:** Conduct extensive awareness campaigns and make it a part of the **school/college curriculum** to educate citizens about their rights.
- **Protection:** Strengthen legal provisions to **protect whistleblowers from disclosing information in the public interest**.
 - Also, creating a **safe environment for those who provide information** is essential for the success of the RTI Act.
- **Training:** Provide **training programs for government officials** to familiarize them with the provisions of the RTI Act, conduct **capacity-building programs for PIOs** etc, to keep them updated on the RTI Act and its implementation.
- **Proactive disclosure:** Public authorities should proactively disclose information without formal RTI requests which can further reduce the burden of RTI applications and enhance transparency in the governance structure.

1.5. SPECIAL CATEGORY STATUS (SCS)

Why in the news?

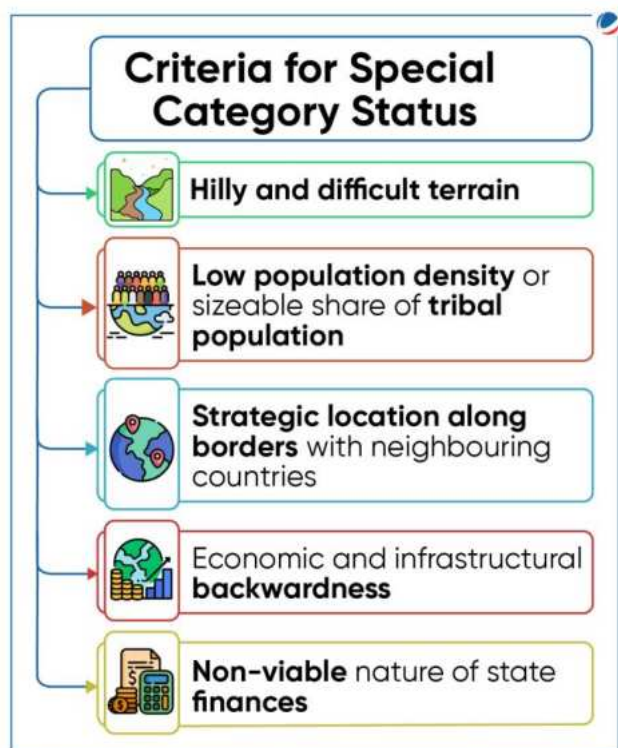
Recently, the **Bihar Cabinet passed a resolution** requesting the Centre to **grant Special Category Status (SCS)** to Bihar.

More on the news

- Bihar is demanding the SCS, citing-
 - **Poverty and backwardness of the State**, lack of natural resources, **regular floods** in the northern region and **severe droughts** in the southern part of the State.
 - The bifurcation of the State led to **shifting of industries to Jharkhand**, which created a **dearth of employment and investment opportunities** in the State.
- Apart from Bihar, Odisha and Andhra Pradesh have also been demanding SCS.

About Special Category Status (SCS)

- SCS was a **classification granted by the Centre** to assist the **development of States** that faced geographical or socio-economic disadvantages.
 - SCS was **introduced in 1969** on the **recommendation of the 5th Finance Commission (FC)** to **benefit certain**



disadvantaged states with preferential treatment like establishing special development boards, reservation in local government jobs, educational institutions, etc.

- The SCS States used to **receive grants based on the Gadgil-Mukherjee formula**.
- In the past, **SCS had been granted by the Union government** to States having certain characteristics (refer image) based on **recommendations of the National Development Council**.
- In 1969, **three States** — Jammu & Kashmir (first), Assam and Nagaland — were **granted the SCS**.
 - Subsequently, **eight more States were given SCS** including Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tripura, Himachal Pradesh, and Uttarakhand.
- **Constitution does not include any provision for categorisation** of any State in India as an SCS state.
 - However, a wide range of **special provisions are available** to as many states that have been listed **under Articles 371, 371-A to 371-H, and 371-J**.
- Following the **recommendations of 14th FC, SCS have ceased to exist** and thus **no SCS has been granted to any State**.

Benefits associated with Special Category Status

- **Central assistance:** Earlier, the Gadgil-Mukherjee formula earmarked **nearly 30% of total central assistance for States to the SCS States**.
 - However, 14th and 15th FC recommendations led to this allocation being merged into increased divisible pool funds for all States rising to **41% in 15th FC**.
- **Funding:** In SCS States, **Centre-State funding** of centrally sponsored schemes was divided in the ratio of **90:10, far more favourable than 60:40 or 80:20 splits** for general category States.
- **Continuity of unspent money:** Special category states had the facility that if they have unspent money in a financial year; it **does not lapse** and gets **carried forward for the next financial year**.
- **Incentives:** Several incentives are available to the SCS States in the form of **concession in customs and excise duties, income tax rates and corporate tax rates** to attract investments to set up new industries etc.
 - Also, SCS states had availed the **benefit of debt-swapping and debt-relief schemes**.

Concerns associated with idea of Special Category Status (SCS)

- **Criteria:** There is a **lack of consensus among states on criteria used to assign SCS status**.
 - SCS was granted to Uttarakhand, being a bordering, Himalayan state and was denied to Jharkhand and Chhattisgarh despite being below Uttarakhand on most growth parameters.
- **Inter-State Disparities:** Granting special status to certain states may lead to concerns about inter-state disparities, creating lop-sided economic and social structures.
- **Encourages fiscal indiscipline:** Debt-swapping and Debt-relief schemes indirectly encourage states to spend beyond their servicing capacity, creating long-term liabilities.
 - **For example**, the outstanding guarantee as a percentage of GSDP is 20% in Jammu and Kashmir, 10% in Himachal Pradesh.
- **Fiscal Burden:** For SCS category states, the Centre pays 90% of the funds required in a centrally-sponsored scheme as against 60% in the case of normal category states, further straining the resources of the Centre.

Way forward

- **Reduce Dependency:** Steps should be taken to reduce the dependency of SCS states on central assistance by promoting local industries, infrastructure creation and diversification of the economy etc.
- **Criteria:** Reviewing the criteria to determine SCS states, ensuring that the criteria reflect the unique challenges faced by these states and considering input from relevant stakeholders.
 - For example, SCS status can be **revised to include the State's socio-economic backwardness along with low resource base etc.**
- **Inter-State Collaboration:** Steps should be taken to **foster collaboration, and knowledge sharing among the states** to address the challenges and further **strengthen cooperative federalism**.
 - Continuous exchange of best practices and lessons learned could be done to promote development in SCS.

Road ahead after abolition of SCS

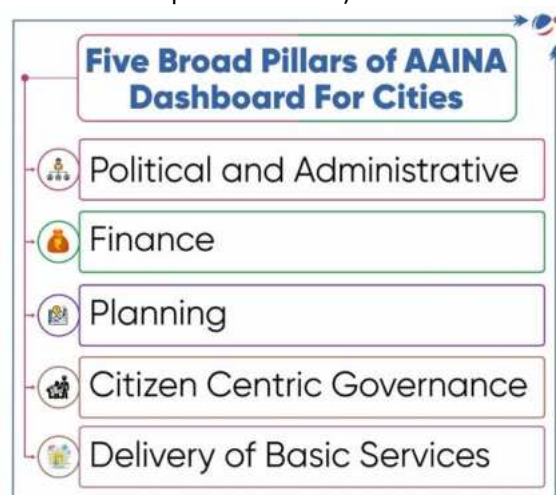
- **Core and Optional schemes:** Centrally Sponsored Schemes should be divided into **Core and Optional schemes**.
 - Amongst Core Schemes, **those for social protection and social inclusion should form the Core of the Core** (e.g. MGNREGA) and be the first charge on available funds for National Development Agenda.
 - **Centre and State funding pattern For Core and Optional Schemes,**
 - ✓ 8 NE and 3 Himalayan States (Himachal Pradesh, J&K and Uttarakhand): **90:10 and 80:20 respectively.**
 - ✓ Other States: **60:40 and 50:50 respectively.**
- **Release of funds** should be simple and **in accordance with a robust policy of cash management** at Centre and States.
- **Institutional arrangement:** NITI Aayog is mandated to **strengthen cooperative federalism**. It should create an appropriate platform for States and Centre for mutual interaction in a problem-solving mode.
- **Arrangements for UTs:** Transfer of funds to UTs for non-plan and non-development purposes is **administered through the Demand for Grants** of the Ministry of Home Affairs. All Core and Optional Schemes should be **funded 100% by Centre in all UTs.**

1.6. NEWS IN SHORTS

1.6.1. AAINA DASHBOARD FOR CITIES

- **Ministry of Housing & Urban Affairs** launched 'AAINA Dashboard for Cities' portal.
- Pioneering portal will provide **information on status and progress of cities** on **five broad thematic areas** (refer infographics).
 - **Urban Local Bodies (ULBs)** across country can **voluntarily submit their key data** including audited accounts, self-reported performance metrics on a regular basis.
 - Ministry through **Digital India Corporation (DIC)** will provide **handholding** to **ULBs / States in the data submission process.**
 - ✓ DIC provides **strategic support** to Ministries/ Departments for carrying forward **Digital India Mission.**
- **Key objectives of portal:**
 - **Healthy Competition:** ULBs can now see how their ULB is faring vis-a-vis other ULBs.
 - **Inspiration:** Motivation for ULBs to identify the possibilities available for improvement.
 - **Learning:** Opportunity for ULBs to learn and implement best practices from peers.
- **Need for the portal:** Critical data on single platforms would be helpful for **planning new schemes and making policy decisions.**
- **About ULBs**
 - **Constitutional body:** **74th (1992) Constitution Amendment Act** recognises ULBs as **third tier of government** and categorises them based on population size as:
 - ✓ **Nagar Panchayats** for 'rurban' areas.
 - ✓ **Municipal Councils** for smaller urban areas.
 - ✓ **Municipal Corporations** for metropolitan areas.
 - **Functions:** **18 specific functions enumerated in 12th schedule** of Constitution.

- **Term: 5 years** (re-election is scheduled within six months of completion of term).



1.6.2. REPORT ON BILLS FOR CRIMINAL LAWS

- **Parliamentary Standing Committee (PSC) on Home Affairs submitted reports** on the three bills aimed at reforming criminal laws
- The three bills include:
 - **Bharatiya Nyaya Sanhita 2023** replacing the **Indian Penal Code (IPC), 1860.**
 - **Bharatiya Nagarik Suraksha Sanhita 2023** replacing the **Code of Criminal Procedure (CrPC), 1973.**
 - **Bharatiya Sakshya Bill 2023** replacing the **Indian Evidence Act, 1872.**
- These bills were subsequently referred for further examination to the PSC.
- These bills aim to **address large pendency in courts, timely justice delivery, erasing colonial legacy, increasing conviction rates etc.**

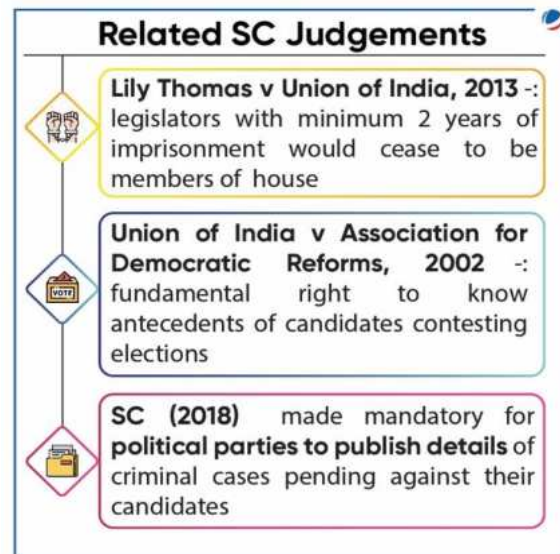
- **Key highlights of report**

Key Provision in bills	Key recommendations
<ul style="list-style-type: none"> • Section 377 of IPC has been deleted which is relating to unnatural sex against the order of nature. 	<ul style="list-style-type: none"> • Partially retain section 377 of IPC in gender-neutral form
<ul style="list-style-type: none"> • Section 497 of IPC relating to adultery has been deleted as Supreme Court read down the provision. 	<ul style="list-style-type: none"> • Retain the offence of adultery by making it gender neutral
<ul style="list-style-type: none"> • 6 types of punishments to which offenders are liable under the provisions of Sanhita are Death; Imprisonment for life, Imprisonment, Forfeiture of property; Fine; and Community Service. 	<ul style="list-style-type: none"> • Empower judicial magistrates to impose community service as punishment
<ul style="list-style-type: none"> • Enable online/electronic FIR registration 	<ul style="list-style-type: none"> • Allow online FIR only through State-specified modes
<ul style="list-style-type: none"> • Use of Handcuffs during arrest 	<ul style="list-style-type: none"> • Restrict the use of handcuffs for economic offences
<ul style="list-style-type: none"> • Admissibility of Electronic or Digital Record 	<ul style="list-style-type: none"> • Mandate proper handling of electronic and digital records

1.6.3. DISPOSAL OF CASES AGAINST MPS/MLAS

- **Supreme Court (SC)** issues **Guidelines to High Courts (HC) to monitor the early disposal** of cases against MPs/MLAs
 - Guidelines were issued by SC while hearing a case challenging **Section 8(3) of the Representation of People Act, 1951.**
 - **Section 8(3) of the Representation of People Act, 1951** states that a person convicted of any offence other than the offences and sentenced to imprisonment **for not less than two years shall be disqualified from the date of such conviction.**
 - ✓ He/she shall continue to be **disqualified for a period of six years** since his release.
- **SC issued following guidelines:**
 - Registration of **suo motu** cases titled '**In Re Designated courts for MPs and MLAs**' by chief justices of HCs to monitor such cases.
 - Such cases can be heard by a **Chief Justice-led special bench.**
 - **Designated court shall give priority –**
 - ✓ to criminal cases against MPs/MLAs punishable with death or life imprisonment,

- ✓ cases punishable with imprisonment for 5 years or more,
- ✓ **Other cases**
- ✓ The trial court shall not adjourn the cases except for rare and compelling reasons.
- **HCs** should evolve measures for **effective monitoring** of such cases by **invoking its powers** under **Article 227.**
 - ✓ **Under Art 227 (1),** HC shall have **superintendence over all courts** and tribunals throughout the territories in relation to which it exercises jurisdiction.



1.6.4. ENABLING COMMUNICATIONS ON REAL-TIME ENVIRONMENT (ENCORE)

- **Election Commission of India (ECI)** designed in-house software for **complete Candidate and election management** through '**ENCORE**'.
- It is an **end-to-end application** for returning officers to **digitize the votes polled, tabulate the round-wise data,** and then **take out various statutory reports of counting.**
- Another application called the **ENCORE Scrutiny Application** allows Returning Officers to scrutinize the nominations filed by the candidates online.
- Through the **ENCORE Nodal App,** various departments like **fire, education, police, environment,** etc. give '**no objection**' certificates for **holding rallies, road shows, etc.** to political parties or candidates.


1.6.5. CURBING FILM PIRACY

- **Ministry of Information and Broadcasting (MIB)** established an institutional mechanism to check film piracy

- Under it, **Nodal Officers** have been appointed from **Central Board of Film Certification (CBFC) and the Ministry to receive complaints** against piracy.
 - Mechanism has been established under the **Cinematograph (Amendment) Act 2023**.
- An **original copyright holder** or any person authorised by them can file complaint.
 - For complaints by non-authorized persons, the officer can hold **hearings on a case to case basis** to decide its genuineness.
 - After directions from officer, the **intermediaries** (digital platform) have to **remove internet links hosting pirated content within a period of 48 hours**.
- To curb piracy, **Cinematograph (Amendment) Act 2023 was passed** (amended the Cinematograph Act 1952).
 - It supports the existing laws viz. the **Copyright Act, 1957** and the **Information Technology Act (IT) 2000**.


- With the proliferation of internet piracy (unauthorized duplication) of films and other related content has increased.
 - It results in losses of up to Rs. 20,000 crore every year to the film industry.





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फाउंडेशन कोर्स

सामान्य अध्ययन

प्रारंभिक एवं मुख्य परीक्षा

2025, 2026 & 2027

इनोवेटिव क्लासरूम प्रोग्राम

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

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

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

DELHI: 5 दिसंबर, 9 AM

BHOPAL: 10 जनवरी, 9 AM

LUCKNOW: 10 जनवरी, 9 AM

JAIPUR: 13 दिसंबर, 7:30 AM & 4 PM

JODHPUR: 13 दिसंबर, 7:30 AM & 4 PM

2. INTERNATIONAL RELATIONS

2.1. INDIA-UNITED KINGDOM (UK) RELATIONS

Why in the news?

Recently, inaugural India-UK 2+2 Foreign and Defence Dialogue was held in New Delhi.

More on the news

- The 2+2 dialogue at Senior Official level is a **mechanism to discuss and review all aspects of India-UK Comprehensive Strategic Partnership**.
- Possibilities for further collaboration particularly in areas of **trade and investment, defence, critical and emerging technologies, in Indo-Pacific**, etc were discussed by two sides.

India-UK relations

- **Strategic convergence:** Assertive China in the Indo-Pacific is a concern for the interest of both the countries.
 - In 2021, both nations concluded a **Comprehensive Strategic Partnership**, outlining **India-U.K 2030 Roadmap**.
 - **India-UK Roadmap 2030** roadmap provides a framework for UK-India relations across health, climate, trade, education, science and technology, and defence.
- **Trade and investment Relations:** Bilateral trade stood at **£36.3 billion during FY 2022-23** with the trade balance in favour of India.
 - Under **Enhanced Trade Partnership (ETP)** both aim to **double bilateral trade by 2030** and have also launched **negotiation for an FTA**.
 - **India-UK Infrastructure Finance Bridge** was announced to leverage expertise and investment in support of **India's National Infrastructure Pipeline (NIP)**.
- **Defence:** Both signed **Defence and International Security Partnership (DISP)** in 2015 to provide a **strategic roadmap** and direction to evolving India-UK Defence Relations.
 - Joint exercises include **Ajeya Warrior (Army)**, **Konkan exercises (navy)**, **Cobra Warrior (multi-national air exercise)** etc.
- **Climate and Environment:** India-UK **Green Growth Equity Fund** is mobilizing institutional investments in renewable energy, electric mobility etc. in India.
 - Also, both cooperate at **International Solar Alliance (ISA)**, **Coalition for Disaster Resilient Infrastructure (CDRI)**.
- **Education, Research and Innovation:** Both have signed MoU on **Mutual Recognition of Academic Qualifications in 2022**.
 - **UK-India Education and Research Initiative (UKIERI)** facilitates educational linkages and **UK Research and Innovation (UKRI)** India plays a key role in enhancing the research and innovation collaboration.
 - **Science and Innovation Council (SIC)** is apex body to review overall bilateral scientific cooperation (except strategic sector).
- **People to people exchange:** Indian diaspora forms **3.1% of the total population of UK**.
 - Both have signed a **Migration and Mobility Partnership (MMP)** agreement to facilitate **easy movement of working professionals** between the two countries.

Potential benefits of FTA



Reduced costs to Indian professionals by **totalisation agreement**



Increase exports in categories like textile, furniture, electrical and general industrial machinery



Boost **labour-intensive sectors** like leather, textile, jewellery



De coupling from China by allowing shift of companies to India



Attracting investment by relaxed customs procedures



Easier immigration for Indian students through temporary work visas

Challenges in relations

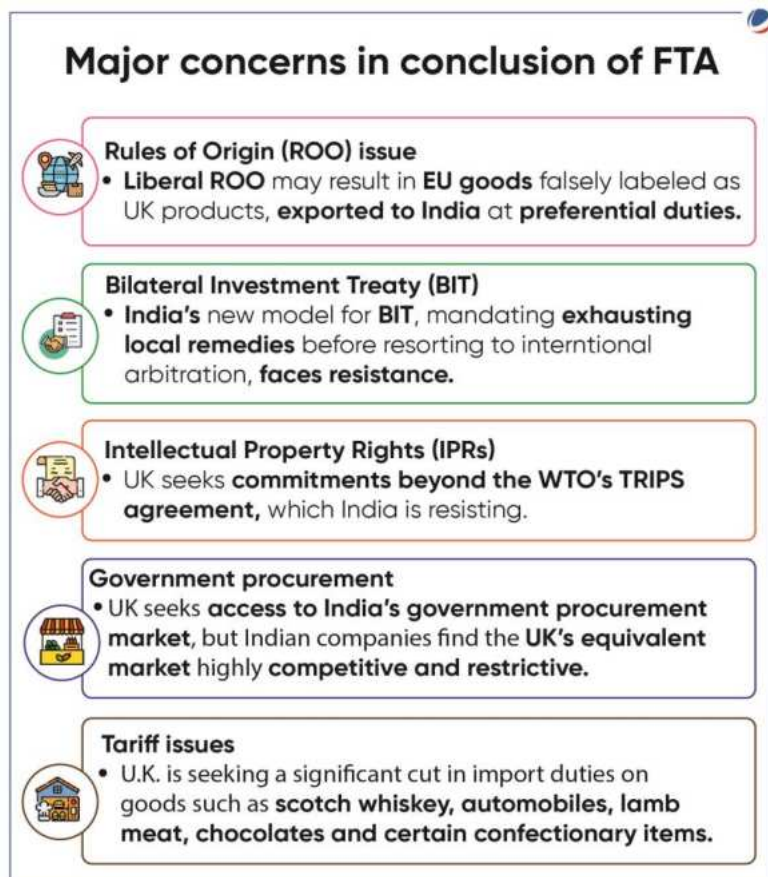
- **Limited defence cooperation:** For example, despite the existence of DISP, UK's share of India's defence market is around 2%.
- **UK stand on state sponsored terrorism:** Historically, the UK's lenient stance on terrorism sponsored by Pakistan has hindered the progress of bilateral relations.
- **Policies towards China:** Even though UK recognised China as a threat, particularly in the South China Sea, it has been making efforts to make China the anchor of post-Brexit economic policy.
 - Also, earlier, Britain **committed** to help realise potential of China's Belt and Road Initiative (BRI).
- **Immigration Policies:** Complex visa and immigration policies, especially concerning Indian students and businesspeople have been a bone of contention.
 - The **lack of credible data** of immigrants has complicated the issue.
- **Economic and Trade barriers:** For long, while India focused on self-sufficiency and public sector while UK became dynamic market economy, which restrained wider economic cooperation.
 - Also, now both countries are **not operating under any specific deadline** for concluding negotiations on FTA.

Way ahead

- **Early FTA finalization:** Work towards comprehensive trade agreements for the earliest promotion of free-flowing goods and services between both nations.
- **Collaboration in Shared Interests:** Focus on global challenges like climate change, clean energy, and global health, as outlined in Roadmap 2030, to provide leadership.
- **Security:** Finalize a reciprocal **logistics agreement** to allow Indian ships and aircraft to use British ports and air bases, especially in regions like Africa.
 - Prioritize collaboration in **counterterrorism**, Humanitarian Assistance and Disaster Relief (HADR), and **maritime security**, especially in the Indo-Pacific region.
- **Defence production:** Intensify efforts for **government-to-government procurement** to facilitate the export of UK military technology.
 - **Capitalize** on successful **co-production agreements**, such as the AgustaWestland–Tata Sons' JV, to revitalize the defence industrial partnership
- **People-to-People Ties:** Promote programs like the:
 - **Generation UK-India initiative**, facilitating short-term study and work placements to young people from the UK in India for greater people-to-people understanding.
 - **India-UK Young Professionals Scheme**, allowing graduates aged 18 to 30 to live, study, travel, and work for up to two years in either country.

Conclusion

As India seeks to carve out a new role for itself in the evolving global order as a 'leading power' and the U.K. recalibrates its strategic outlook post-Brexit, this is a unique moment in India-U.K. ties. India UK requires a "**quantum leap**" in the relations.



2.2. INDO-PACIFIC ECONOMIC FRAMEWORK FOR PROSPERITY (IPEF)

Why in the news?

The third Indo-Pacific Economic Framework for Prosperity (IPEF) Ministerial Meeting was held in San Francisco, USA.

More on the news

- During the meeting, **negotiations under the IPEF Pillar-III (Clean Economy), Pillar IV (Fair Economy)** were concluded.
- Additionally, ministers also signed the **IPEF Agreement Relating to Supply Chain Resilience** negotiated under Pillar II.
- The agreement envisages **establishment of**:
 - **IPEF Supply Chain Council**: For overseeing collaboration on supply chain issues across the Indo-Pacific.
 - **IPEF Supply Chain Crisis Response Network**: To help prepare for and respond to future supply chain disruptions.
 - **IPEF Labour Rights Advisory Board**: To identify labour rights concerns across IPEF supply chains and develop recommendations

About IPEF

- **Genesis**: IPEF was launched jointly by the **USA and other partner countries** of the **Indo-Pacific region** in May 2022 at Tokyo.
- **Objective**: To **strengthen economic engagement** among partner countries with the goal of **advancing growth, peace and prosperity in the region**.
- **Members**: **14 partner countries** include USA, Australia; Brunei; Fiji; **India**; Indonesia; Japan; Republic of Korea; Malaysia; New Zealand; Philippines; Singapore; Thailand; and Vietnam.
 - Together these countries **represent 40% of world GDP** and **28%** of global goods and services trade.
- **Modules**: The framework is structured **around four pillars**.
 - India **has joined all pillars except the trade one**.
- **Lead agency**: The **US Trade Representative (USTR)** is the lead agency for the **trade pillar**, while the **department of commerce** is leading the **other three pillars**.
- **Traditional trade agreements vs IPEF**:
 - **Unlike** Traditional trade blocs (like the RCEP) or Free Trade Agreements (FTAs), **IPEF will not negotiate tariffs or market access**.
 - **Also** unlike in FTAs, where **everything is negotiated under a single umbrella**, IPEF negotiations under the **four module (pillars) are in silos, independent of each other**.
 - ✓ While countries have to **agree to all the components within a module**, they **need not participate in every module**.
 - **IPEF** merely focuses on increasing **regulatory coherence** between the member nations.

Four pillars of Economic framework



Connected Economy (Trade)

- **High standard cules in the digital economy**, including standards on cross-border data flows and data localization.
- **Strong labor and environment standards** and corporate accountability provisions.



Resilient Economy (Supply Chains)

- Supply chain commitments to create a **more resilient economy** and guard against price spikes that increase costs.
- Establishing an **early warning system, mapping critical mineral supply chains**, improving traceability in key sectors, and coordinating on diversincation efforts.



Clean Economy

- Commitments on **clean energy, decarbonization and infrastructure** that promote good-paying jobs.
- Concrete, high-ambition targets that will accelerate efforts to tackle the climate crisis, including in the areas of renewable energy, carbon removal, energy efficiency standards, and new measures to combat methane emissions.



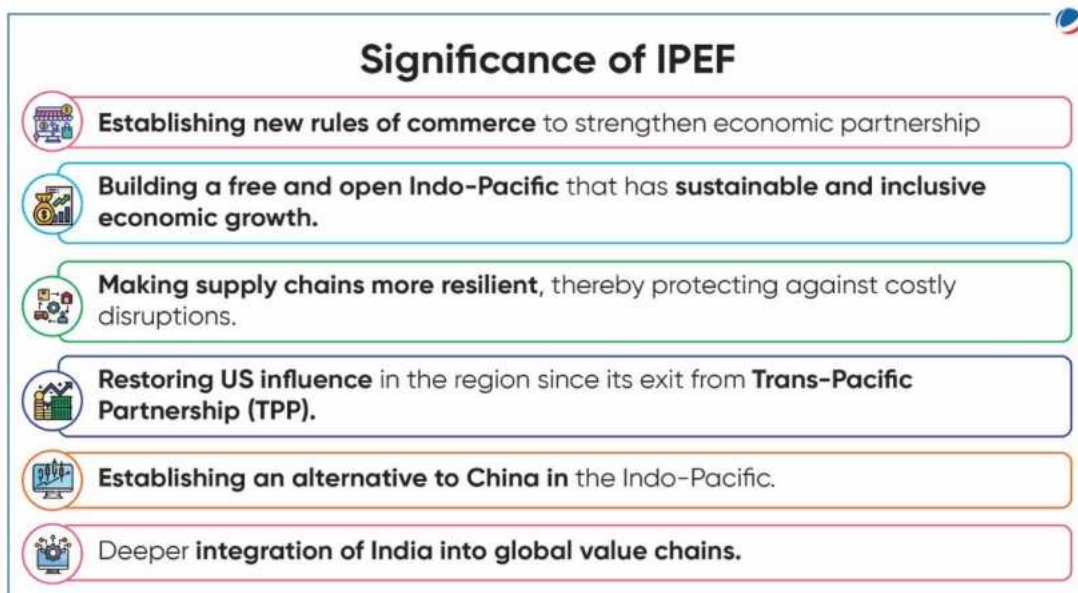
Fair Economy

- Enact and enforce effective **tax, anti-money laundering, and anti-bribery regimes** that are in line with existing multilateral obligations.
- Enforcing regimes that cut down on corruption and ensure fair taxation.

Challenges to IPEF

- **Concerns on durability:** The unpredictability of U.S. domestic politics may adversely impact IPEF.

- For example, U.S. had shown strong leadership on Trans-Pacific Partnership (TPP), abruptly withdrew from it during Trump administration.



- **De-coupling China is difficult:** China is already the leading trading partner of all IPEF member countries.
 - China is also a member of **Regional Comprehensive Economic Partnership (RCEP)** and willing to join Comprehensive and Progressive Agreement for TPP (CPTPP).
 - Even if companies move production elsewhere, they still **rely on Chinese raw materials and equipment**.
- **Concerns on reciprocity:** IPEF does not provide market access and it is difficult to secure substantial commitments from members without providing market access concessions to signatory countries.
- **Venturing into sensitive areas:** IPEF plans to cover new areas like the digital economy, clean energy, **from labour and environmental standards**.
 - However, many countries in the region may be reluctant to commit due to policy differences with the U.S.
 - For example, **due to similar concerns India did not join Pillar 1**.
- **Lack of binding commitments:** This raises concerns about the agreement's **ability to bring about meaningful change** in economic landscape of the region.

Way ahead

- **Strengthen IPEF Credibility:** Develop IPEF into a credible alternative that provides tangible benefits for economic activity and investment in the region.
- **Incentivize Participation:** Offer incentives to countries already signatories to regional FTAs (CPTPP and RCEP) to make joining IPEF more appealing.
- **Ensure Binding Rules:** Ensure that negotiated rules are binding and consider concerns from all stakeholders.
- **Expand IPEF Membership:** Develop the process and criteria for inviting other countries from the region to join IPEF negotiations.
- **Balanced approach towards China:** A pragmatic approach is needed as an overtly anti-China strategy might be counterproductive as many IPEF members in the Indo-Pacific may not support this.

Scan the QR code to know more about **Indo-Pacific**.

Weekly Focus #15: India and the Indo-Pacific



2.3. NEWS IN SHORTS

2.3.1. INDO-PACIFIC REGIONAL DIALOGUE (IPRD-2023)

- 2023 edition of IPRD concluded in New Delhi.
- IPRD is an **annual apex-level regional strategic dialogue** of Indian Navy.
 - Theme of IPRD-2023: **“Geopolitical Impacts upon Indo-Pacific Maritime Trade and Connectivity”**.
 - IPRD-2023 was **organised by National Maritime Foundation**, New Delhi, as the Indian Navy’s knowledge partner.
 - IPRD aims to **review various maritime trends**, regional **opportunities and challenges within Indo-Pacific region**, and foster exchange of **solution-oriented dialogue** amongst key stakeholders.

2.3.2. ASEAN DEFENCE MINISTERS’ MEETING - PLUS

- **10th ASEAN Defence Ministers’ Meeting - Plus (ADMM-Plus)** held in Jakarta, Indonesia
- **ADMM Plus** (established in 2010) is a platform for **ASEAN (Association of Southeast Asian Nations)** and its **eight Dialogue Partners** (aka **Plus Countries**).
 - Plus countries include Australia, China, India, Japan, New Zealand, South Korea, Russia and USA.
 - **ADMM** is the highest defence consultative and cooperative mechanism in ASEAN.
- Its **objective** is to **strengthen security and defence cooperation** for peace and stability.
- India’s proposal to **co-chair Expert Working Group on Counter-Terrorism** has been endorsed by ADMM-Plus.
 - It is one of the focus areas of **ADMM-Plus**.
- India has also **committed** towards **result-oriented cooperation** with **ADMM-Plus** for **enhancing maritime security in the region**.
- **India’s role in Maritime security**:
 - **Rule based order**: Through the implementation of the **United Nations Convention on the Law of the Sea (UNCLOS), 1982**.
 - ✓ It ensures **freedom of navigation, unimpeded lawful commerce** etc.
 - ✓ India emphasises on **dialogue and diplomacy** (for peace and stability) as **this is not an era of war**.
 - **Securing Sea-lanes and choke points** (such as **Malacca strait**): Through regular **surveillance**.
 - **Capacity Building**: It includes **exercises** {Singapore India Maritime Bilateral Exercise (SIMBEX)} and **defence cooperation** (Signed a deal to export **BrahMos missiles to Philippines**) etc.



2.3.3. INDIA-AUSTRALIA 2+2 MINISTERIAL DIALOGUE

- **2nd India-Australia 2+2 Ministerial Dialogue** held in **New Delhi**.
- The meeting was co-chaired by **India’s Defence Minister & External Affairs Minister** along with their **Australian counterparts**.
- Meeting highlighted the significance of a **strong India-Australia defence partnership for Indo-Pacific** and called for enhancing collaboration in **information exchange, defence research, etc.**
- **Strategic Convergence between India-Australia**
 - Both democracies of Indo-Pacific have **pluralistic societies and market economies**.
 - Hold a shared vision for Indo-Pacific that calls for a **free, open, inclusive and resilient rules-based order in the region**.
 - ✓ **Australia–India Indo-Pacific Oceans Initiative Partnership (AIPOIP)** helps shape **maritime cooperation in Indo-Pacific**.
 - ✓ **Supply Chain Resilience Initiative** by Australia, India, and Japan was launched for diversification of supply chain in the region.

- Shared interests in **balancing China's growing assertiveness**.
- Both are **members of the Quad**, along with Japan and US.
- Bilateral strategic partnership was elevated to **Comprehensive Strategic Partnership in 2020**.
- **Key defence cooperation**
 - **Military Logistics Support Agreement** facilitates sophisticated logistic cooperation.
 - **Defence Science & Technology Implementing Arrangement** facilitates interaction between **defence research organizations** in two countries.
 - **Information Fusion Centre - Indian Ocean Region (IFC-IOR) liaison officer** to enhance maritime situational awareness.
 - **Joint Military Exercises:** AUSINDEX, Malabar, Austra Hind, Pitch Black.
 - Other areas of cooperation include **cyber security**, **ocean-born trade security**, etc.

2.3.4. INDIA-US 2+2 MINISTERIAL DIALOGUE

- **Fifth India-US 2+2 Ministerial Dialogue** concluded successfully in **Delhi**.
- In 2+2 dialogue, **foreign and defence ministers** participated and discussed **strategic and security issues**.
 - India also has 2+2 dialogue mechanism with Australia, Japan, the United Kingdom and Russia.
- **Key Highlights:**
 - **Defence:** Both to **co-produce infantry combat vehicles** as part of **Defense Industrial Cooperation**.
 - ✓ Both looked forward to finalizing **Security of Supply Arrangement (SOSA)**.
 - ✓ It will further integrate the **defense industrial ecosystems** of both countries while **strengthening supply chain resilience**.
 - **Science and Technology Partnerships:** Reviewed **U.S.-India Initiative on Critical and Emerging Technology (iCET)**.
 - ✓ iCET aims to strengthen and broaden the **strategic technological partnership** between the companies, and academic institutions.
 - **Trade:** Welcomed the **progress of the Indo-Pacific Economic Framework for Prosperity (IPEF)**.
 - ✓ IPEF has four pillars relating to Trade (I); Supply Chains (II); Clean Economy (III); and Fair Economy (IV). India has joined three pillars of the IPEF, but stayed out of the trade pillar.
 - **Multilateral Diplomacy and Connectivity:** Both reaffirmed the importance of a **free, open, inclusive and resilient Indo-Pacific** and reiterated

benefits of **India-Middle East-Europe Economic Corridor**.

- **Other:** Improve Cooperation under the **USA's Cancer Moonshot program**.

Key Aspects of India-US relations:

- **US is India's largest export destination.**
- It is **3rd largest defence supplier to India**.
 - Also, it has recognized India as a key **defence partner** and signed defence cooperation treaties like **Basic Exchange and Cooperation Agreement (BECA)** in 2020.
- Recently, India has joined **US-led Mineral Security Partnership (MSP)**, which aims to ensure the supply of critical minerals.

2.3.5. VOICE OF GLOBAL SOUTH SUMMIT

- **India hosted** the second Voice of Global South Summit (VOGSS).
- It focused on ways to sustain the momentum generated toward a **more inclusive, representative, and progressive world order**.
- **Indian PM unveils DAKSHIN (Global South Centre of Excellence) and called for 5 'Cs'** for the Global South: **Consultation, Cooperation, Communication, Creativity, and Capacity building**.
- India previously **hosted the first VOGSS**, where 125 Global South countries came together with the theme **"Unity of Voice, Unity of Purpose."**
- The term **"Global South"** refers to various countries often described as "developing," "less developed" or "underdeveloped."
 - The concept of the Global South can be traced to the **Brandt report of 1980**.
- **Need for South-South Cooperation:**
 - To **address the disproportionate impact** of global challenges such as climate change.
 - To **improve representation** in global forums such as the UN Security Council.
 - To achieve **food and energy security**.
 - To fulfill **sustainable development goals**.
- **India's Initiatives for South-South Cooperation:**
 - Inducting **African Union in G20** Grouping.
 - **Institutional initiatives** such as the International Solar Alliance, Global Biofuel Alliance, Coalition for Disaster Resilient Infrastructure, etc.
 - **MAHARISHI** for global food security.
 - **G20 Digital Public Infrastructure Framework**.
 - Proposal for **weather and climate monitoring satellite** for Global South.



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3. ECONOMY

3.1. DIGITAL PUBLIC INFRASTRUCTURE (DPI)

Why in the News?

Recently, Prime Minister announced the launch of two India-led initiatives: the **Global Digital Public Infrastructure Repository (GDPIR)** and a **Social Impact Fund**, during the Virtual G20 Leaders' Summit.

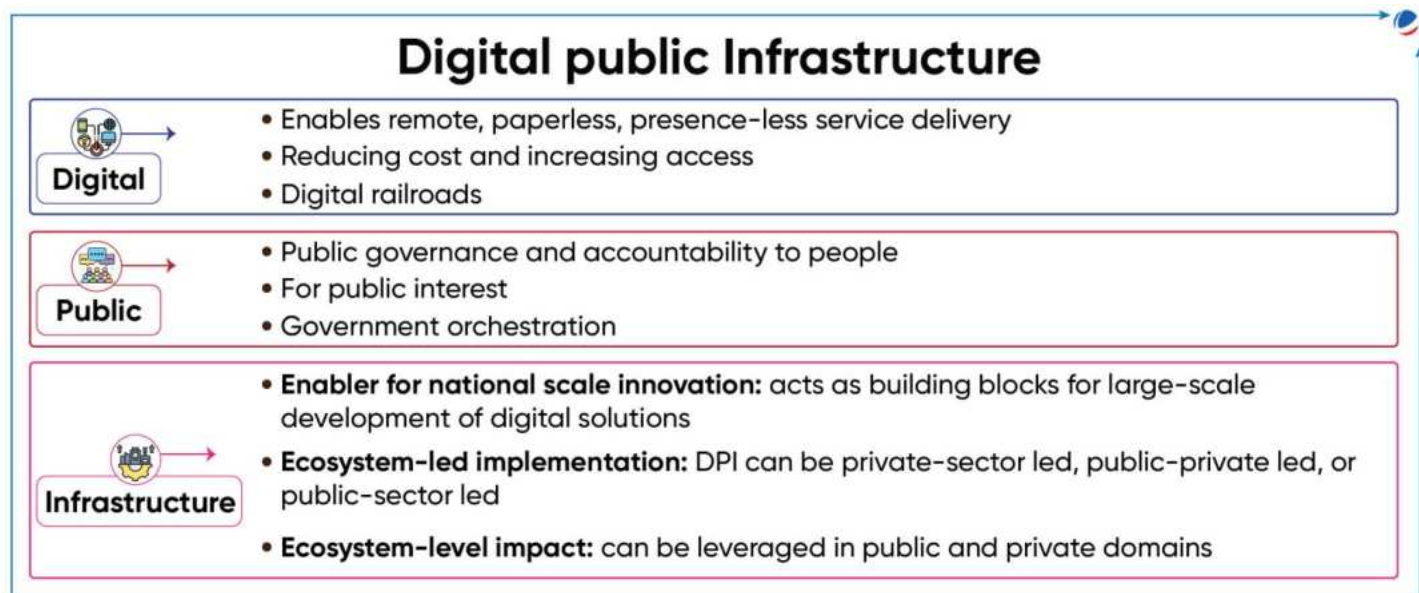
More on the News

- GDPIR is **one of the three DPI deliverables** that were endorsed by the G20 New Delhi Leaders' Declaration.
- Other two deliverables include a **Framework for building DPI** and **mobilizing finances** for DPI development in Low- and Middle-Income Countries (LMICs).

Global Digital Public Infrastructure Repository (GDPIR)	Social Impact Fund (SIF)
<ul style="list-style-type: none"> Developed by: Ministry of Electronics & Information Technology. Aim: To bridge the knowledge gap in the choices and methodologies required for the design, construction, deployment, and governance of DPIs. Constituents: GDPIR showcases the information in a standardized format from countries and organizations that have developed DPIs at scale, incorporating elements such as maturity scales, source codes, and governance frameworks. <ul style="list-style-type: none"> Currently, the GDPIR features 54 DPIs from 16 countries. 	<ul style="list-style-type: none"> Aim: Envisioned as a government-led, multistakeholder initiative to fast-track DPI implementation in the global south. <ul style="list-style-type: none"> It offers a platform for all relevant stakeholders to contribute to this fund and help accelerate the achievement of the Sustainable Development Goals (SDGs) in LMICs through DPIs. Funding: India has pledged an initial commitment of 25 million USD to SIF. <ul style="list-style-type: none"> This fund will offer financial support to provide upstream technical and non-technical assistance to countries in developing DPI systems.

Digital Public Infrastructure (DPI)

- DPI is a **set of shared digital systems** which are secure and interoperable, built on open standards and specifications to deliver and provide equitable access to public and/or private services at societal scale.



- Key pillars of DPI:**
 - Open, interoperable, extensible, and scalable **technology**.
 - Robust governance framework** with transparent legal framework, data protection mechanism, grievance redressal and protection of intellectual property.

- **Resilient local ecosystems** eliminating economic, technical or social barriers, ensuring community participation and sustainability.
- **Foundational elements:** A strong DPI has three foundational systems—**identity, payments, and data exchange**.
 - India's **DPI architecture, known as India Stack**, consists of Aadhaar (identity), UPI and Aadhar enabled Payment System (payments), and Digilocker and Account Aggregator (data exchange).

Significance of DPI for countries of Global South

- **Inclusion:** DPI helps overcome challenges of existing mechanisms that suffer from delays, leakages, and targeting errors—often excluding women and other marginalized communities.
- **Resilience:** Public emergencies (like COVID-19 and natural disasters) may impair conventional modes of service delivery.
 - DPI helps overcome these barriers **by enabling uninterrupted, remote assistance** through digital networks operating at national scale.
- **Sovereignty:** Centralized decision-making and legacy software restrict countries from imagining new digital solutions.
 - DPI are open and interoperable, which offers countries the **autonomy and flexibility to plan, design, and implement** their digital systems.
- **Innovation:** The DPI approach allows multiple stakeholders—governments, private sector, and civil society—to **collaborate and contribute to innovation** in the digital ecosystem, enabling fair market competition.
- **Socio-economic outcomes:** DPI incentivizes **entrepreneurship**, advances **competition**, improves quality of life and enhances **business opportunities**.
 - For instance, India's DPI has transformed Indian economy, bolstered productivity and supported equitable growth.

India's role in promoting DPI at global level

- **Identity system:** International Institute of Information Technology (IIIT) in Bengaluru launched the Modular Open Source Identity Platform (MOSIP) to **help other countries set up Aadhaar-like systems**.
 - More than 10 countries, from Sri Lanka to Sierra Leone, have initiated MOSIP projects so far.
- **Payment linkages:** India has signed agreements with various nations to **extend the reach of its UPI payment system**, like **Singapore, Malaysia, UAE, France** etc.
- **G20 Consensus:** Under India's presidency, G20 leaders arrived at a consensus regarding **promotion and adoption of DPI framework**.
- **Alternative Model:** India's DPIs offer an **alternative model to the traditional "big tech" approach**, emphasizing public ownership and control of critical infrastructure.
- **One Future Alliance (OFA):** India proposed OFA for **building capacity** and providing **technical assistance and funding** support for implementing DPI in LMICs.
- **Open Source Infrastructure:** India's commitment to open source technology has prevented the privatization of critical infrastructure and fostered innovation which enables their **flexible adoption at global scale**.

Conclusion

DPI systems are not a panacea and if **poorly designed can lead to severe lapses in data privacy and user protection**. However, if built with foresight, **DPIs can boost economic activity** and help communities lead more meaningful lives. In the coming decade, efficient implementation of DPI in yet-to-be-tapped sectors could potentially determine how we grow as a nation.

3.2. GLOBAL DEBT OF DEVELOPING COUNTRIES

Why in the news?

Sri Lanka faces an unsustainable debt and a severe balance of payments crisis which highlighted the issues of growing debt of developing countries.

Growing debt of developing countries

- Developing countries **often incur debt to fund large-scale infrastructure projects**, such as roads, bridges, and power plants, to stimulate economic growth.
- In a recent, United Nations report “A world of debt. A growing burden to global prosperity” finds global public debt reached an **all-time high of \$92 trillion in 2022 from \$17 trillion since 2000**.

Reasons for the growing debt of developing countries

- **Higher costs of funds:** When developing countries borrow money, they have to pay much higher interest rates than developed countries.
- **More resources to pay interest:** Currently, half of developing countries devote more than 1.5% of their GDP and 6.9% of their government revenues to interest payments, a sharp increase over the last decade.
- **Relying on private creditors:** Developing nations have markedly raised market-driven borrowings from private creditors like bondholders and banks, opting for commercial terms.
- This shift contrasts with traditional reliance on multilateral institutions for official credit.
- **Issue in debt restructuring:** Outsider creditors avoid debt restructuring of a country in crisis.
- **Poor debt management and low government revenues:** It is mainly due to inefficient tax policies and weaknesses in the rule of law are among the internal causes.
- **Other factors**
 - The COVID-19 pandemic, the cost-of-living crisis, and climate change
 - Debt trap diplomacy of china
 - Limited sources of financing

Concerns raised due to high debt burden

- **Issue of debt sustainability:** The burden of debt pushes them to borrow from more expensive sources, increasing their vulnerabilities and making it even harder to resolve debt crises.
 - Sri Lanka's public debt is unsustainable, and as a result, the country lost international financial market access in 2022.
- **Decreased Developmental spending:** 3.3 billion people live in countries that spend more on interest than health or education.
- **Hamper's sustainable development:** Currently, over 70% of public climate finance takes the form of debt thus **countries in debt crisis tend to spend less on climate finance**.
- **Political and social turmoil:** Masses blamed their government for the economic mess which resulted in **political instability**.
- **Global Financial Stability:** High debt levels in developing countries can contribute to global financial instability.

Way forward

- **Inclusive international financial architecture:** Improve the real and effective participation of developing countries in the governance of the international financial architecture.
 - Reforms such as updating IMF quota formulas to reflect the changing global landscape.
- **Provide liquidity:** Provide greater liquidity in times of crisis through IMF, and MDBs so that these developing nations do not opt for high-interest financing which is unsustainable.
- **Transparent reporting of debt:** Ensure that all countries adhere to comprehensive and transparent reporting of public debts.



Data Bank

- **30%** of the global public debt is held by Developing countries, of which 70% is represented by China, India and Brazil.
- **60%** is the total public debt to GDP of developing countries in 2021 (an increase for 35%)
- **59** developing countries face a debt-to-GDP ratio above 60% - a threshold indicating high levels of debt.

Know the term

- **Debt sustainability:** A country's public debt is considered sustainable if the **government is able to meet all its current and future payment obligations** without exceptional financial assistance or going into default.

- Greater transparency regarding public debt liabilities can help prevent the build-up of large “hidden” liabilities that in due course turn into explicit government debt.
- **Prudent Debt Management Strategies:** Low-income countries must proceed prudently in taking up new debt, focusing more on attracting foreign direct investment and boosting tax revenues at home.
 - Lenders need to assess the impact of new loans on the borrower's debt position before extending fresh credit.
- **Debt Restructuring:** Promote collaboration among official creditors to prepare for debt restructuring cases that involve non-traditional lenders.
- **Fulfilling climate finance commitments:** climate change is one of the leading reasons for high public debt, providing credit for climate mitigation can avert the debt crisis.

Global initiatives to solve debt crisis in developing countries

- **Role of IMF:** The IMF is helping countries address large financing needs to prevent debt crises or, for countries already in debt distress, to restore economic and financial stability.
- **Global Sovereign Debt Roundtable (GSDR):** Launched in February 2023 by the IMF in coordination with the World Bank and India's G20 presidency, the GSDR brings together key stakeholders involved in sovereign debt restructuring to foster consensus on debt and debt-restructuring challenges and how to address them.
- **Debt Management and Financial Analysis System (DMFAS) programme of UNCTAD:** The development objective of the DMFAS Programme is to strengthen the Government's capacity to manage its debt effectively and sustainably.
- **Heavily Indebted Poor Countries (HIPC) Initiative:** The IMF and World Bank launched the HIPC Initiative in 1996 to ensure that no poor country faces an unmanageable debt burden.

3.3. EXCHANGE RATE MANAGEMENT IN INDIA

Why in the news?




Indian rupee's valuation against currencies of major trading partners has surged to a near two-year high on central bank intervention and elevated domestic inflation.

What is Currency Valuation?

- It refers to the process of **determining the relative worth or value of one currency in terms of another**.
 - It is **influenced by several factors** including **interest rates, inflation, capital flow, and money supply** etc.
- The most common method to value currency is through **exchange rates**.
 - An exchange rate represents the **value of one currency in terms of another**. For example, if the exchange rate from USD to INR is 80, you can exchange 1 USD for 80 INR.

Methods for Exchange Rate Determination

- **Fixed Exchange Rates:** Here, the **value of a currency is pegged or fixed** to the value of another currency, a basket of currencies, or a commodity like gold.
 - Central banks **actively intervene** to maintain the fixed rate.
- **Flexible Exchange Rates:** Also known as floating exchange rates, the exchange rate is **determined by the forces of the market** i.e., demand and supply of currency in international markets.
 - Central Bank **does not intervene** directly to affect the level of the exchange rate.
- **Managed Exchange Rates:** It is a system where a currency's value is **primarily determined by market forces** but central banks **may occasionally intervene** to stabilize or influence the exchange rates.

Year	The Foreign Exchange Market and Exchange Rate
 Fixed Exchange Rate Era	
1947–1971	Rupee's external par value was fixed in terms of gold with the pound sterling as the intervention currency.
1971	Breakdown of the Bretton-Woods system and floatation of major currencies. The rupee was linked to the pound sterling in December 1971.
1975	Rupee was pegged to a basket of currencies . Currency selection and weight assignment was left to the discretion of the RBI and not publicly announced.
 Balance of Payments crisis (1991)	
 Start of Floating exchange era	
1991	End to the pegged exchange rate regime
1992	Liberalized Exchange Rate Management System (LERMS) was put in place,
1993	Market determined exchange rate regime was introduced.

Exchange Rate Determination in India

Since 1993, several mechanisms have been tried to effectively capture the market dynamics for Exchange Rate evaluation, currently **Nominal and Real Effective Exchange Rate (NEER and REER)** evaluations are used.

Nominal Effective Exchange Rate (NEER)	The Real Effective Exchange Rate (REER):
Measure of the value of a country's currency against a basket of other currencies , taking into account exchange rates with its major trading partners.	Measure of the value of a country's currency against a basket of other currencies, adjusted for differences in price levels or inflation rates between the home country and its trading partners.
<ul style="list-style-type: none"> It is a weighted average of bilateral exchange rates, where the weights reflect the importance of each trading partner in a country's overall trade. <ul style="list-style-type: none"> It does not account for differences in price levels (inflation). 	<ul style="list-style-type: none"> It provides a more accurate reflection of a currency's purchasing power in the international market.

Effects of exchange rate on other key economic variables

- Inflation:** An **over-valued currency** can contribute to **lower inflation** by reducing the cost of imported goods and services and vice versa.
 - For example, when the country imports goods and services from other countries, it needs fewer units of its own currency to purchase the same amount of foreign goods and services.
- Interest rates:** Central banks may respond to a strengthening currency by **lowering interest rates** to stimulate economic activity and exports.
 - Similarly, Central Banks respond to a weakening currency by increasing the interest rates.

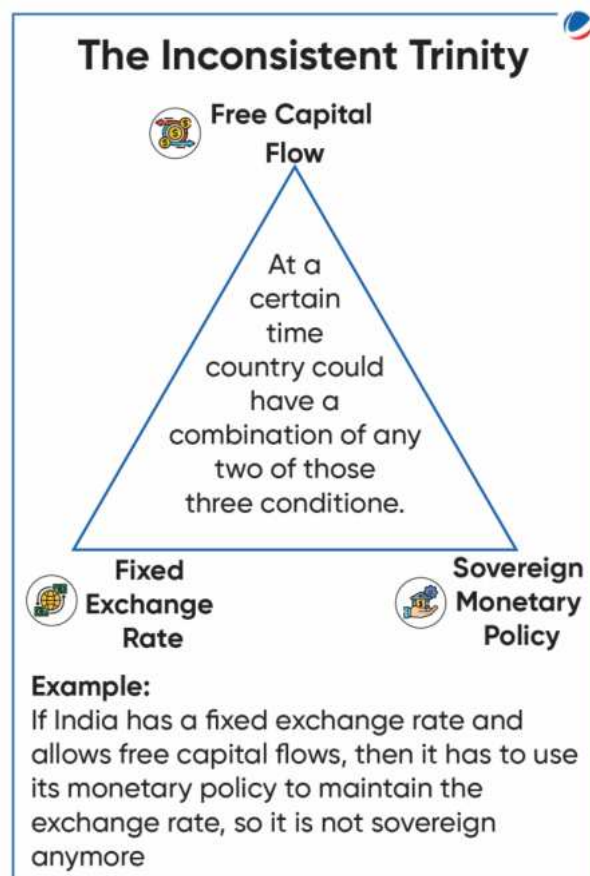
Do you know ?

- > As per RBI's monetary policy report, the **rupee's 40-currency real effective exchange rate (REER)** shows the rupee was **overvalued by 5.7% in September 2023**.
- > **Overvaluation** occurs when a currency's exchange rate is higher (stronger) than its fundamental or intrinsic value.

- **Economic growth:** While a stronger currency can contribute to lower inflation, it may reduce export-driven sectors, consequently a decline in overall economic growth.
- **Trade:** A stronger currency may contribute to **trade deficits as exports become less competitive and imports become more attractive** to domestic consumers.
- **Capital Flow:** A stronger currency **may attract more foreign direct investment** as investors seek higher returns due to currency appreciation.
- **Business decisions:** Exchange rates can be highly volatile, making it challenging for businesses to predict costs, prices, and profits accurately.

Challenges in managing exchange rates

- **Unpredictable geopolitical Events:** Unexpected global events, such as Trade war (e.g., U. S.-China trade war), geopolitical tensions (e.g., Ukraine-Russia war) or natural disasters, can lead to **sudden and unpredictable movements** in exchange rates.
- **Speculation and Manipulation:** Buying and selling of currency in the forex market for speculation and manipulation can **exacerbate exchange rate volatility**, creating challenges for policymakers in maintaining stable economic conditions.
- **Government Intervention:** Interventions by governments or central banks (e.g., devaluation, depreciation) to stabilize or influence exchange rates **may impact market perceptions** and create challenges for policymakers.
- **Impossible trinity (or inconsistent trinity):** It refers to the idea that an economy cannot pursue independent **monetary policy, maintain a fixed exchange rate, and allow the free flow of capital** across its borders at the same time.



Way forward

- **International Policy Coordination:** Governments and central banks should coordinate policies to maintain stability, e.g., through institutions such as the **Bank of International Settlements**.
- **Maintaining Foreign Exchange buffers:** Maintaining adequate buffers of key resources such as gold and important foreign exchange currencies can help better manage market volatilities.
- **Advocate against Currency Manipulation:** Concerns can be voiced at international forums against countries that engage in currency manipulation that distorts the global market for selfish gains.

3.4. INSOLVENCY AND BANKRUPTCY CODE (IBC), 2016

Why in the News?

Insolvency and Bankruptcy Board of India (IBBI) proposed reforms to make the Insolvency and Bankruptcy Code (IBC) process more transparent.

Key reforms proposed

- Review the work/progress of the **corporate insolvency resolution process (CIRP)** by the Committee of Creditors (CoC).
- **Resolution Professionals (RP)** should be mandated to conduct the meetings of the CoC every month.
- **Standardise the valuation methodologies.**
- To streamline the resolutions and prevent delay in the implementation, **resolution plans may adopt a two-part structure.**
 - Part A of the resolution plan shall deal with the inflow i.e., payment under the resolution plan, payment of insolvency resolution process cost, etc.

- Part B will deal with distribution to the various stakeholders.
- **Clarity in minimum entitlement to dissenting financial creditors.**

About IBC

- It **consolidated and amended** the laws relating to **reorganisation and insolvency resolution** of corporate persons, **partnership firms** and **individuals**.
 - The **Corporate Insolvency Resolution Process (CIRP)** is a recovery mechanism for the creditors of a corporate debtor.
- It ensures **resolution in a time-bound manner** for maximization of the value of assets.
- It provides an **exit mechanism** for a corporate person that has not defaulted, through a **voluntary liquidation process**.

Significance of IBC

- **Time value of money:** The Code necessitates resolution in a **time-bound manner** as **excessive delay** is most likely to **diminish the organisational capital** of the company.
- **Freeing up economic resources for a circular economy:** The Code provides a mechanism for a company to **exit with the least disruption** and cost and release idle resources in an orderly manner.
- **Improve Credit Culture:** IBC has improved credit culture in India by resolving a significant amount of stressed assets with better recovery rates compared with the previous mechanisms, such as the **Debt Recovery Tribunal**, the **SARFAESI Act, 2002** and **Lok Adalat**.
 - Other mechanisms had an average recovery rate of 5-20%.
 - In terms of value, It has helped resolve ₹3.16 lakh crore of debt stuck in 808 cases in the past seven years.
- **Improved Ease of Doing Business:** It has helped in attracting more Foreign Direct Investment (FDI) in the country.
 - It has promoted the interest of small investors.

Challenges with IBC

- **Huge Backlog:** There is a backlog of 13,000 cases under IBC, which includes 2,073 ongoing corporate insolvency resolutions.
- **Lack of NCLT benches:** Limited judicial bench strength and delays in identifying and acknowledging cases.
- **Falling Recovery Rate:** Recovery rates have declined from 43% to 32% between March 2019 and September 2023.
- **Long Resolution Process:** In recent years, the average resolution time has increased from 324 to 653 days versus the stipulated 330 days.
- **Low approval rate of resolution plans:** As per IBBI data, the majority of cases end with liquidation. It violates IBC's principal objective of resolving bankruptcy.

Pillars of the IBC Ecosystem

- **Insolvency and Bankruptcy Board of India (IBBI)**
 - It is responsible for **implementing the IBC**.
 - It performs **quasi-legislative, executive and quasi-judicial functions simultaneously**.
- **Adjudicating authority (AA)**
 - The **National Company Law Tribunal (NCLT)** shall be the AA for the insolvency resolution and liquidation process of a corporate person and **Debt Recovery Tribunal (DRT)** are for individuals and partnership firms.
 - ✓ Appeals from the order of NCLT shall lie to the **National Company Law Appellate Tribunal (NCLAT)**.
- **Insolvency Professional (IP)**
 - A **specialized cadre of professionals enrolled** as a member in an IPA and registered with the Board.
 - These professionals **will administer the resolution process (RP)**, manage the assets of the debtor, and provide information for creditors to assist them in decision-making.
- **Insolvency Professional Agency (IPA)**
 - It is responsible for the professional development of IPs.
 - It will **certify the insolvency professionals and enforce a code of conduct** for their performance (as per their bylaws).
- **Information Utilities (IU)**
 - IU **collates, authenticates and disseminates financial information from any person** including the financial and operational creditors of companies.

Know the term

- **Insolvency:** It is the situation when an **individual or company** can no longer **meet their financial obligations** to lenders as debts become due.
- **Bankruptcy:** It is a legal proceeding initiated when a **person or business** is **unable to repay outstanding debts or obligations**.
- **Haircut:** A haircut is a **debt foregone** by the **lender as a share** of the outstanding claim.

- In resolution, creditors can realise the maximum value of the outstanding claims in comparison to liquidation.
- **Haircuts:** In 2021, the Parliamentary Standing Committee on Finance pointed out, that creditors on average had to bear an 80% haircut in more than 70% of the cases.
- **Opacity:** The **committee of creditors (CoCs)** has significant discretion in **accepting resolution plans** and **appointing IPs**.

Way Forward

- **Implement reforms proposed by the IBBI to make the IBC process more transparent.**
- **The pre-packaged Insolvency Resolution Process (PIRP) option** should be extended to all corporates after review.
 - This is because, under PIRP, unlike CIRP, the debtor continues to manage company operations during the resolution process.
 - ✓ PIRP is an alternate **resolution mechanism for micro, medium and small enterprises in financial distress.**
- **Cross-border resolution** to address cross-border insolvency, the cross-border insolvency framework needs to be adopted.
- **Introduction of specialised resolution frameworks** for specific sectors (such as project-specific resolution for real estate) where IBC's success has been elusive
- **IBBI should set up benchmarks for haircuts** and other processes **similar to global standards.**

Steps taken by IBBI to Improve IBC

- Increasing the number of **NCLT benches** and **extending timelines** for filing claims.
- It authorized the CoC to request an **audit** during the CIRP, enhancing **transparency** and **accountability**.
- To better represent the interests of homebuyers, **authorised representatives (ARs)** of a class of creditors have been granted an expanded role in the insolvency process.
 - ARs are now responsible for assisting homebuyers in understanding the discussions and considerations at the CoC.

3.5. PM GATI SHAKTI INITIATIVE

Why in the news?

Recently, PM Gati Shakti Initiative **completed two years** since its inception in October 2021.

About GATI Shakti Plan

- **PM Gati Shakti National Master Plan (PMGS-NMP)** is aimed to provide **multimodal connectivity infrastructure** to various economic zones of India.
 - **Economic zone** refers to a cluster where any economic activity in the form of manufacturing or value addition services or other services, is being carried out.
- **Objectives of the Plan:**
 - To **incorporate Economic zones** like textile clusters, pharmaceutical clusters, defence corridors, electronic parks etc. in **PMGS-NMP**.
 - To set up a **unified portal** that would bring **16 Ministries** including Railways and Roadways together.
- **Primary Focus:** Strategic planning, innovative financing methods, leveraging technology, and expediting implementation processes.
- **Scope:** It will encompass the **seven engines (Roads, Railways, Airports, Ports, Mass Transport, Waterways and Logistics Infrastructure)** of the National Infrastructure Pipeline (NIP).

PM Gati Shakti Targets by 2025

- **Roads:** National highway network to be 2 lakh km.
- **Railways:** Increasing cargo handling capacity to 1,600 MMT.
- **Airports:** 220 new airports/heliports/ water aerodromes.
- **Ports:-** Total cargo capacity to be achieved 1,759 MMT per Annum.
- **Renewable Energy:** 225 GW
- **Telecommunication:** Total 2.6 lakh gram panchayat to be connected.
- **Total length of gas pipelines to be built:** 34,500 Km

Six Pillars of PM Gati Shakti Initiative



Comprehensive

Integrating all existing or planned initiatives of various **Ministries**



Prioritization

Enabling prioritization of projects through **cross-sectoral** interactions



Optimisation

Assist different **ministries** in planning for **modification** or **expansion** after identification of critical gaps



Synchronisation

By **ensuring coordination** of work between departments to reduce delays and clashes



Analytical

Providing the entire data in one place with **GIS based spatial planning** and **analytical tool**



Dynamic

Identify the **vital interventions** for enhancing and updating the **master plan of departments**

Impact of the GATI Shakti Initiatives

- **Saving Cost:** By cutting logistics costs and improving supply chains, it enhances the global competitiveness of local products. E.g., **digitization of NOC (No Objection Certificate)** for all projects.
- **Expediting implementation processes across projects:** E.g., Reduction of the pre-alignment finalization time for infrastructure projects **from 3-4 months earlier to 1 month.**
- **Increasing information availability:** By providing valuable data on upcoming connectivity projects, business hubs, and industrial areas.
 - E.g., Use of **Digital Master Planning tool by BISAG-N** (Bhaskaracharya National Institute for Space Applications and Geo-informatics) in a dynamic Geographic Information System (GIS) platform.
- **Developing Multi-modal logistics:** By establishing seamless transportation connectivity through various modes.
 - E.g., Integrating infrastructure schemes like **Bharat Mala, Sagar Mala**, inland waterways, dry/land ports.
- **Reducing traveling distances:** It will facilitate the last mile connectivity of the infrastructure so that road, rail, power, optic fibre cable, gas pipeline etc. are available to the people.
 - E.g., Integrating Public transport platforms such as the Indian Railways, Metro Trains, Regional Rapid Transit System (RRTS), Interstate Buses, Bus Rapid Transit (BRT) etc.

Challenges in implementation

- **Structural Problems:** Securing approvals for **land access**, obtaining **environmental clearances**, and **resettlement** and **compensation** issues for affected communities.
- **Financial Constraints:**
 - **Private banks are reluctant** to provide credit due to fear of increasing Non-Performing Assets.
 - With the pandemic and its associated challenges, the **state governments don't have enough financial resources.**
- **Centre-State Coordination issue:** Involvement of multiple authorities without clear flow of accountability and issue of disputes arising during the implementation of the project.

- **Balancing infrastructure development with environmental considerations:** E.g., need to minimize the ecological impact of new projects.

Way forward

- **Better Land-use planning:** Making use of Geographic Information Systems (GIS) and remote sensing technologies to **reclaim lands that have already undergone degradation** instead of acquiring new land.
- **Skill Development:** Include training on project management methodologies, engineering techniques, and the latest advancements in infrastructure technology.
 - Encourage **internships and on-the-job training** opportunities for students interested in infrastructure development.
- **Technological Use:** Harness the capabilities of digital technologies like artificial intelligence, big data analytics, blockchain, etc., to improve the effectiveness and transparency of infrastructure planning and execution.
- **Centre-State Cooperation:** Establishing a mechanism **for resolving disputes or conflicts** that may arise during the implementation of PM Gati Shakti projects.
- **Community Impact Assessment:** Assess the potential social and environmental impact of the infrastructure project on local communities.
- **International Collaboration:** Explore collaborations with international organizations and countries that have expertise in infrastructure development. E.g., collaborating **on robust transportation networks** and efficient rail systems with Germany and Japan.

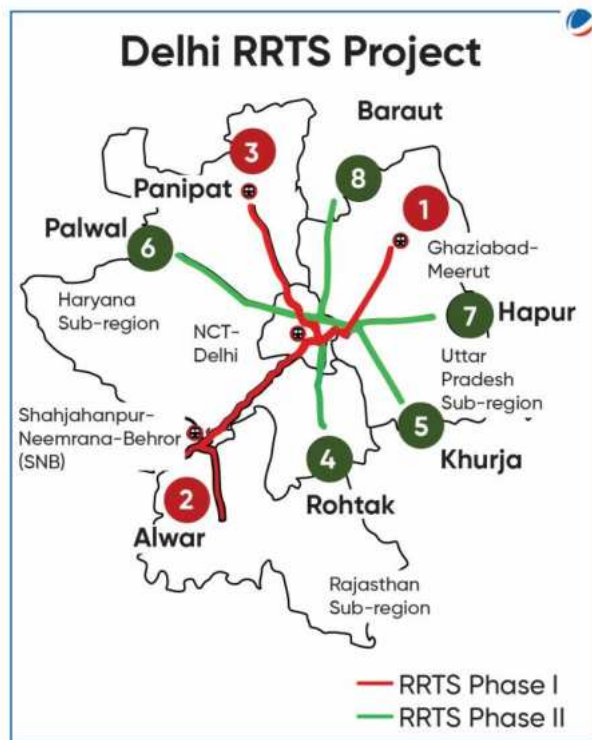
3.5.1. RAPID TRANSIT SYSTEM (RTTS) PROJECT

Why in the news?

Recently, the **First Regional Rapid Transit System (RTTS)** was launched in India with **Namo Bharat RapidX train** completing a 17-km stretch from Sahibabad to Duhai Depot in Uttar Pradesh.

About RTTS Project

- It is a new, **dedicated, high-speed, high-capacity, comfortable commuter service** connecting regional nodes in NCR.
- It is part of India's efforts to **enhance urban transportation** and address the challenges of increasing population and urbanization.
- These will operate at a speed of **160 km/hour** but are designed to be able to run at speeds up to **180 km/hour**.
- **Different from Metro and Indian Railways:**
 - RTTS is different from the metro as it caters to passengers looking **to travel relatively longer distances with fewer stops** and at **higher speeds**.
 - RTTS is different from conventional Railways as it will provide reliable, high-frequency, point-to-point **regional travel** at high speed along a dedicated pathway.
- **National Capital Region Transport Corporation (NCRTC)** is responsible for implementing the RTTS in the National Capital Region (NCR).



Significance

- **Increased Economic Activity:** With shorter travel times, the overall productivity of the region would be enhanced.
- **Balanced Economic Development:** Improved connectivity would lead to **deeper economic integration** in the region and consequently more balanced economic development.
- **Improved Access:** A faster commute would allow people access to more employment opportunities and better facilities for healthcare and education.

- **Savings in Travel Cost and Time:** Offered at an affordable price, these journeys would also lead to savings, increasing disposable incomes and quality of life.
- **Lower Emissions:** Small carbon footprint and high passenger throughput will lead to a significant reduction in pollution in the region.
- **Easing of Road Congestion:** The RRTS, which could shift a large amount of traffic from road to rail could free up a lot of road space and ease congestion on highways across the NCR.

Challenges in implementation

- **Financial Constraints:** Maintaining and operating railway networks demands substantial upfront investment, posing a potential strain on public budgets.
- **Environmental Concerns:**
 - Construction activities in the RRTS project pose a major risk for **Delhi NCR air pollution in the immediate term**.
 - Further, it is expected to add to the **noise pollution and vibration issues** in residential infrastructure.
- **Construction Challenges:** E.g., significant engineering challenges, including tunneling, bridge construction, and alignment considerations.

Way forward

- **Air-pollution control** through the establishment of **water pumps at casting yards**, installation of **air monitoring devices** at various points along the route etc. to bring down associated dust levels.
- **Ensure that the design aligns with urban planning goals**, environmental sustainability, and integration with existing transportation networks.
 - For example, adherence to design standards in **line with PM Gati Shakti master plan**.
- **Integrate advanced technologies** like automatic train control systems, communication networks, fare collection systems, and others to ensure seamless and optimized operations.

3.5.2. DEDICATED FREIGHT CORRIDORS (DFCS)

Why in the news?

The **Eastern Dedicated Freight Corridor (EDFC)** has been completed fully in October 2023.

What is a Dedicated Freight Corridor?

- It is a **railway corridor** designed for the rapid and efficient transportation of goods and commodities, characterized by **high speed** and **high capacity**.
- **Aim:** Decongesting India's railway network by separating **freight traffic** from **passenger traffic** on the railway network.
- **Implementing agency:** Dedicated Freight Corridor Corporation of India Limited (DFCCIL).
 - It is a **wholly owned enterprise of the Ministry of Railways** set up in 2006 for the construction, maintenance, and operation of DFCS.



**National Capital Region
Transport Corporation (NCRTC)**



About: Incorporated in 2013 as a **joint venture company** of Govt of India and the States of **Delhi, Haryana, Rajasthan and U.P.**

➤ It is under the administrative control of the **Ministry of Housing and Urban Affairs (MoHUA)**.

Purpose: Implementing the **Regional Rapid Transit System (RRTS)** project across the NCR of India.

Composition:

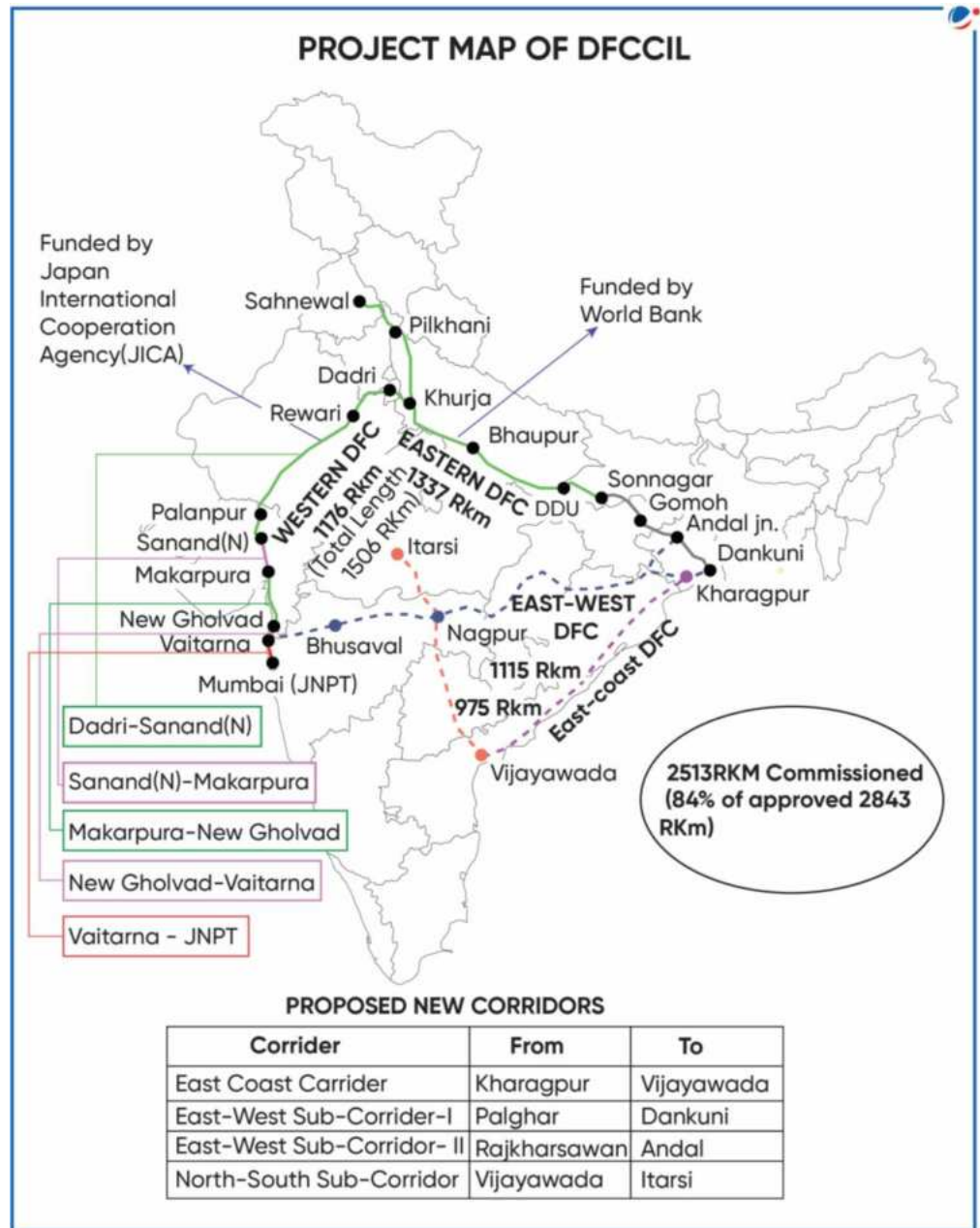
- Secretary (Urban Affairs Department) is the ex-officio Chairman of the Board of Directors.
- Managing Director, a nominee of the Ministry of Housing and Urban Affairs.
- 1 nominated Director each from the participating States.
- 4 nominee Directors from the Government of India.

Functions and responsibilities:

- Designing, developing, implementing, financing, operating and maintaining RRTS.
- Ensuring balanced and sustainable urban development through better connectivity and access.

Significance of DFC

- **Capacity Enhancement:** DFCs reduce congestion on existing rail routes, allowing for smoother passenger train operations and accommodating the growing demand for freight services.
- **Cost Reduction:** Quicker transit times, reduced fuel consumption, and increased carrying capacity per train can lead to lower transportation costs for businesses, making **goods more competitively priced**.
- **Infrastructure Upgradation:** It includes modern signaling systems, electrification of tracks, and the establishment of new rail lines.
- **Environmental Benefits:** By diverting a substantial portion of freight traffic from roads to rail, the DFC will help reduce congestion on highways and lower greenhouse gas emissions.
- **Equitable Regional development:** It can enable the economic integration of relatively less developed regions with developed regions.
 - For instance, the Eastern Dedicated Freight Corridor (EDFC) will provide a transportation route for coal from resource-rich regions (e.g., Jharkhand, Odisha) to power plants and industrial centres in other parts (e.g., U. P and Haryana) of the country.



Challenges in the creation of DFCs

- **Funding and Financing:** Due to the large-scale nature of the projects, delays in funding can affect the project timeline and increase overall costs.
- **Technical Challenges:** Dealing with diverse terrains, constructing bridges and tunnels, and ensuring the alignment meets safety and operational standards.
- **Integration with Existing Network:** Ensuring smooth connectivity and interoperability between the DFCs and the existing infrastructure poses a challenge.
- **Market Demand and Utilization:** Changes in market dynamics, economic conditions, and fluctuations in freight demand can impact the utilization of the dedicated corridors.

Way Forward


- **Efficient Integration with Existing Network:** Interchange-connecting points between the Indian Railways' network and the DFC need to get smoother.

- **Accelerated Land Acquisition:** Promptly providing **fair compensation** and utilizing technology for **land surveys** and **mapping** to expedite the acquisition process.
- **Market Analysis and Demand Forecasting:** Conduct thorough market analysis and demand forecasting to align the DFC capacity with the anticipated freight demand.


3.6. CENTRAL ELECTRICITY AUTHORITY (CEA)


Why in the news?

On October 15, 2023, the Central Electricity Authority (CEA) celebrated its **50th foundation day**.




Central Electricity Authority (CEA)



New Delhi



About: Statutory organization under Electricity Act 2003.




Ministry: Ministry of Power




Genesis

- Originally constituted under section 3 (1) of repealed **Electricity (supply) Act, 1948**.
- In 1951 established as part-time body and made **full-time body in 1975**.
- Superseded by section 70 of **Electricity Act, 2003**.




Objective:

- To regulate and oversee the **development of the electricity sector in the country**.
- To ensure reliable **24x7 power supply** of adequate quality to all consumers in the country.



Composition:

- **Not more than 14 Members (including its chairperson)**.
- Not more than 8 Full-time Members to be appointed by the Central Government.



Function and responsibilities

- **Advise the Central Government** on National Electricity Policy.
- **Specify the technical standards** for electrical plants and electric lines.
- **Specify the conditions for installation of meters**.
- **Promote measures for advancing the skill of persons** engaged in the electricity industry.
- **Promote and assist in the timely completion** of schemes and projects.

Emerging Challenges for CEA

- **India's aging power Infrastructure:** It requires **substantial upgrades and modernization**.
- **Increased Cybersecurity Risks:** New cyber threats associated with the growing **digitization** of the power sector.
- **Renewable Integration:** The increasing share of renewable energy sources, such as solar and wind, poses challenges in terms of grid integration, balancing, and ensuring grid stability.
- **Rise of Electric Vehicles (EVs):** It presents challenges and opportunities related to the demand for electricity, charging infrastructure, and managing grid impact.
- **Decentralized Power Generation:** Distributed renewable energy systems, for example- rooftop solar panels, **micro or mini-grid** etc. require new regulatory frameworks and grid management strategy.

Way forward

- **Energy Storage:** The CEA could explore and promote the adoption of **energy storage technologies** to balance supply and demand and improve grid stability.
- **Ensure cyber-Security:** CEA should focus on developing and implementing **cybersecurity policies** to protect the power grid from potential threats.
- **Data Analytics and Predictive Maintenance:** Implement predictive modelling for grid planning and management.
- **Awareness:** CEA must encourage public participation in energy efficiency programs and renewable energy initiatives like solar pumps etc.
- **International Collaboration:** with international organizations and sharing best practices can bring valuable insights to the CEA. E.g., **BIMSTEC energy centre** set up in Bengaluru.

3.7. MARITIME SECTOR

Why in the News?

The **third edition** of the **Global Maritime India Summit 2023** was hosted in Mumbai.

More about the News

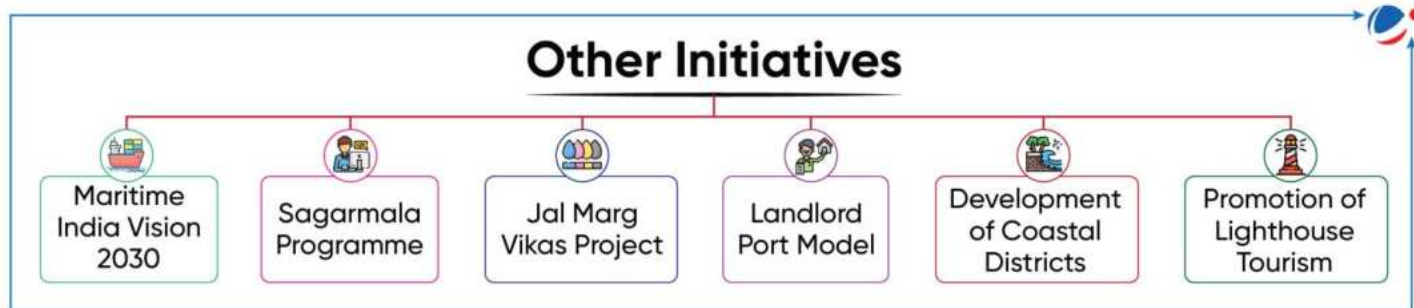
- At the summit, **Maritime Amrit Kaal Vision 2047** prepared by **Ministry of Ports, Shipping and Waterways** was also launched.
 - It is a comprehensive **roadmap to transform India's maritime sector** with an estimated investment of Rs. 80 trillion.

Maritime Amrit Kaal Vision 2047

It outlines **strategic initiatives** spread across **11 overarching themes** to transform India's maritime sector. These themes include:

- **Sustainable and Green Maritime Sector:** Aims at making all 14 major ports **carbon neutral, embracing green fuel** and making India a hub for **hydrogen production** and distribution.
 - Encouragement to **adoption of multi-fuel engine with alternative fuels**.
 - An **Inland Vessel Green Transition Program** will be launched.
 - 3 ports to set up the **green hydrogen bunkers** - Paradip Port (Odisha), Deendayal Port (Gujarat) and VO Chidambaranar Port (Tamil Nadu).
- **Port modernisation:** Transforming ports into **smart, automated and ports of the future** through enhanced **operational agility, accelerated digitalization** etc.
 - It also aims at placing **Indian ports among world's top 25 ports**.
- **Global player in shipbuilding, repair & recycling** to attain a spot in top 5 global shipbuilding centres.
- **Improving India's tonnage: Quadruple port capacity** to reach 10,000 million tons port capacity with **100% PPP** (Public-Private Partnership) model at major ports.
- **Ocean, Coastal & River Cruise Sector:** Making India a leader in **cruise tourism** in the Asia Pacific region and develop 25 cruise terminals.
- **Enhanced logistics:** Enhance **modal share** of coastal shipping and inland waterways from **6% to 12%** through infrastructural and policy reforms.
 - Government aims at increasing **operational waterways more than twofold**.
 - **Coastal cargo traffic has doubled** in the last decade, and cargo handling of national waterways grew by four times.
- **Offer maritime professional service:** Through enhancing competitiveness in maritime law, finance and insurance sector and ensuring compliance with international standards and best practices.
- **World class education, research & training.**
- **Maritime cluster development:** To optimize the entire supply chain, thereby elevating economic productivity by enhancing effectiveness and efficiency of logistics sector.
- **Global maritime presence:**

- Push to **international corridors such as India-Middle East-Europe Corridor (IMEC)** will integrate various regional projects and link maritime activities, creating robust supply chain networks.
- India will drive the establishment of a 5000 km multi-country waterway system, known as **Eastern Waterways Connectivity – Transport Grid**.
- **Efficiency enhancement:** Achieved through establishing a technology-driven innovation ecosystem.
 - Government is establishing **Digital Centre of Excellence for Maritime Efficiency (COEME)**.



Maritime sector in India

- Maritime Sector in India **comprises Ports, Shipping, Shipbuilding and Ship repair and Inland Water Transport Systems**.
- **Ministry of Shipping** is the **nodal central agency** administering the issues related to them.
- **India** has 13 Major Ports and about 200 minor ports along the coastline and Island.
 - Major Ports are the ports which are administered by the Union Government, while Non-major Ports are administered by the State Governments.
- In the last decade, the **capacity of India's major ports has doubled**, and turnaround time for big vessels has come down to less than 24 hours as compared to 42 hours in 2014.

Significance of developing India's maritime sector

- **Opportunities in Indian Ocean:** It is the **world's third largest water body**, covering 70 million square km with rich mineral resources and connectivity with global cities.
 - India has a vast coastline stretching over 7,517 km and 1,382 offshore islands that bring generous resources and opportunities.
- **Livelihood opportunities for coastal population:** Most coastal regions of India are densely populated and low-lying, with around 250 million people active within a 50-kilometre range of coast.
- **Food security:** India is the **second-largest fish producing nation** in the world with a fleet of 250,000 fishing boats.
- **International trade:** Indian Ocean is the corridor of the global economy and India is strategically located commercial shipping lanes between Strait of Hormuz and Strait of Malacca.
- **Regional power aspiration:** India has the potential and capability to play the role of net security provider and a reliable partner in the Indian Ocean region.

Maritime challenges to India

- **Infrastructural deficiency:** Inadequate port infrastructure and connectivity **hinders efficient movement of goods** and increase turnaround times.
 - Also, limited facilities for shipbuilding and repair impact the operational efficiency and expansion of the maritime fleet.



- **Security Concerns: Piracy and maritime terrorism** pose threats to the safety of shipping routes and maritime activities.
 - **Non-traditional security threats** also emanate from drug and contraband trafficking, armed robbery, human smuggling and illegal migration.
- **Environmental pollution from maritime sector:** It includes increased greenhouse gas emissions, water consumption, sewage, waste generation, and loss or degradation of coastal habitats, biodiversity, and ecosystem services.
- **Geopolitical challenges:** Political tensions in the region (for instance with China) impact the stability and security of maritime trade routes, affecting the smooth flow of goods.
 - China is constantly increasing its **economic and military influence** in the littoral states of the Indian Ocean, which is a **challenge to India's rise as major power** in the region.
- **Climate change:** Its impacts like sea level rise and consequent decline in marine resources, intensification of disasters, oceanic acidification etc. pose major challenges in realising the socio-economic potential of maritime boundaries.
- **Technological challenges:** India lags in adoption of modern technologies such as those required for deep sea exploration and mining.

Conclusion

As India endeavors to overcome obstacles and invest in the development of its maritime infrastructure, technology, and sustainable practices, it sets the stage for a future where its maritime prowess not only ensures economic prosperity but also solidifies its position as a key player in the global maritime landscape. India's maritime vision for 2047 stands as a pivotal roadmap for such aspirations of India.









3.8. NATIONAL PHARMACY COMMISSION BILL 2023

Why in the news?

Recently, the **Ministry of Health and Family Welfare (MoH&FW)** sought public comments on **Draft National Pharmacy Commission Bill, 2023**

More on news

- It aims to **replace the Pharmacy Act, 1948**, and the existing **Pharmacy Council of India (PCI)** with **National Pharmacy Commission**.
 - **Pharmacy Act, 1948** regulates the **practice and profession of pharmacy**.
- The legislation aims to -
 - Promote **national health goals**.
 - Improve access to quality and affordable **pharmaceutical education**.
 - Increase the availability of **high-quality pharmacy professionals**.
 - Establish an effective **grievance redressal mechanism** for relevant matters.
 - Promote **equitable healthcare** by making pharmacy services accessible to all citizens.
 - **Transparent assessment** of pharmacy institutions and facilitating the **maintenance of a pharmacy register** for India.
 - Encourage pharmacy professionals to adopt the latest **pharmacy research**, contribute to research, and uphold high ethical standards.

Pharmacy sector of India				
 3rd largest in the world in terms of volume	 Accounts for about 60% of global vaccine production	Major segments of the Indian Pharmaceutical Industry		
		 Generic drugs	 Vaccines	 Bulk drugs
70% of WHO's vaccines i.e. diphtheria-pertussis-tetanus (DPT), Bacille-Calmette-Guérin (BCG) are sourced from India		 Over-the-counter medicines	 Biosimilars and biologics	 Contract research & manufacturing

To know more about the **Pharmacy Sector of India**, kindly refer to **Article 3.16 Pharmacy (Amendment) Act, 2023** in the **August 2023 edition of VisionIAS Monthly Current Affairs Magazine**.

Key provisions of Draft National Pharmacy Commission Bill, 2023

National Pharmacy Commission (NPC)	
Appointment	<ul style="list-style-type: none"> Central Government shall establish the NPC with its head office in New Delhi on the recommendations of Search-cum Selection Committee.
Composition of NPC, Condition and Term of office of members and Removal	<ul style="list-style-type: none"> Composition: Chairperson, thirteen ex officio Members and fourteen part-time Members. Chairperson: S/he shall be appointed by the Central Government based on a set of qualifications including that s/he be a registered pharmacist, has proven administrative capacity, and experience of not less than 10 years among others. Conditions and Terms of Office: Members will hold office for a term not exceeding 4 years or 65 years of age from the date on which they enter upon their office and shall not be eligible for any extension or reappointment for the same post or equivalent post. <ul style="list-style-type: none"> However, they shall be eligible for appointment to a higher post after a cooling-off period of at least 6 months. Removal: It is done by the Central Government by order if the member has been adjudged insolvent, has been convicted of an offence, or has become physically or mentally incapable among others.
Functions of Commission	<ul style="list-style-type: none"> Frame policies and regulate standards for governance of pharmacy education and training. Exercise appellate jurisdiction with respect to decisions of Boards. Provide basic standards of education, physical and instructional facilities, research, maximum tuition fee payable etc. Collaborate with industry and other institutions for the use of cutting-edge technology and hybrid education to drive innovation and research in the pharmacy field.
Search-cum Selection Committee	
Composition of Search-cum Selection Committee	<ul style="list-style-type: none"> Chairperson: Secretary, MoH&FW. Members nominated by Central Government: <ul style="list-style-type: none"> 3 pharmacy experts with qualifications and experience of not less than 20 years in pharmacy education. 1 person, possessing outstanding qualifications and experience of not less than 20 years in management or law or economics or science and technology.
Three Boards	
Appointment of Boards	<ul style="list-style-type: none"> Central Government shall constitute three boards (functioning under NPC) namely <ul style="list-style-type: none"> Pharmacy Education Board: To maintain every pharmacy qualification granted by any University or pharmacy institution in India. Pharmacy Assessment and Rating Board: Establishment of new pharmacy institutions or courses prohibited without prior permission from this board. Pharmacy Ethics and Registration Board: To maintain a National Pharmacy Register containing details of pharmacy professionals, ensuring transparency.
Composition of Boards	<ul style="list-style-type: none"> Each board shall not have more than two whole time Members and two part-time Members other than a President.
Term of office and conditions of service of President and Members	<ul style="list-style-type: none"> Tenure for President and whole-time Members will be 4 years and shall not be eligible for any extension or re-appointment on same or equivalent post. <ul style="list-style-type: none"> However, they shall be eligible to be considered for the post of Chairperson of Commission after a cooling off period of six months. Tenure for Part-time Member will be 2 years and shall not be eligible for any extension or re-appointment in Board or Commission.
Pharmacy Advisory Council	
Appointment	<ul style="list-style-type: none"> Constituted by Central Government to advise Commission on measures to enhance equitable access to pharmacy education, training and research.
National Pharmacy Commission Fund	
About	<ul style="list-style-type: none"> A fund will be constituted which shall form the part of Public Account of India. Fund shall be applied for making payment towards salaries and allowances payable to Chairperson, Secretary and Members of Commission, Presidents and Members of Boards and administrative expenses.

Conclusion

India is recognised as the pharmacy of the world as it produces global standard medicine at affordable cost. Thus, a growth enabling framework is essential for the sector to meet evolving healthcare demands, along with embracing innovation and encouraging collaboration.

Scan the QR code to know more about **India's Pharmacy Sector.**

Weekly Focus #107: India: Pharmacy of the World



3.9. NEWS IN SHORTS

3.9.1. LEAP AHEAD INITIATIVE

- **LEAP AHEAD** (Launchpad for Tech Entrepreneurs towards Accelerated Growth and Pioneering AHEAD) is a **pan-India initiative**.
- It was launched to **select tech startups** for **high-quality mentorship**, **securing investments** & **establishing global connections**.
- LEAP AHEAD is designed for **Tech Startups with Early Traction** and in the Growth stage.
- A collaboration of **Software Technology Parks of India (STPI)** and **The Indus Entrepreneurs (TiE)** and a group of Investors.



- **About STPI**
 - A premier S&T organization under MeitY.
 - Engaged in promoting **software exports**, nurturing tech startup ecosystem etc.

3.9.2. MICROFINANCE IN INDIA

- Recently a **report** titled **“Micro Matters: Macro View”** was released by **Microfinance Industry Network (MFIN)**.
 - MFIN is an **Association of Non-Bank Finance Company Micro Finance Institutions (NBFC-MFIs)** established in 2009.
 - It is an umbrella body of **Micro Finance Institutions (MFIs)** of the country.
- **The key findings of the report**
 - **NBFC-MFIs followed by banks** are the largest provider of micro-credit amongst other regulated entities.
 - MFIs' **gross Non-Performing Assets (NPA)** decreased from 5.6% (FY22) to 2.7% (FY23).
 - The **share of East and Northeast states** fell to 34.9% from 37.7% from last year.
- **Microfinance** refers to the financial services provided to low-income individuals or groups who are typically excluded from traditional banking.
- **Significance of Microfinance in India**
 - **Financial Inclusion:** Helps in bringing the unbanked and underbanked population into the formal financial system.
 - **Women Empowerment:** A significant proportion of microfinance borrowers are women.
 - **Poverty Alleviation:** Provide the poor with access to credit for income-generating activities, breaking the cycle of poverty and enabling economic mobility.
 - **Community Development:** Through Self Help Groups (SHGs) and community-based approaches, microfinance has facilitated social cohesion and community development.
- **Issues with MFIs:** Low outreach, high-interest rate, Negligence of urban poor, instances of ever-greening of overdue loans, etc.



3.9.3. DIRECT LISTING

- **Companies (Amendment) Act 2020 (Section 5)** has been notified by the Ministry of Corporate Affairs
 - It amended the Companies Act 2013 and allowed direct listing for certain class of unlisted Companies to directly issue a certain class of securities in foreign stock exchanges.
- **Direct listing** is a process by which a company can go public by selling existing shares instead of offering new ones.
 - It facilitates access to global capital.
- Till now, Indian companies can access overseas equity markets only through **depository receipts** or by **listing their debt securities on foreign markets**.

3.9.4. CREDIT INFORMATION COMPANIES (CICS)


- RBI has directed CICS to **introduce a compensation framework** for delay in updation or rectification of credit information of borrower.
 - A CIC shall pay **compensation** to the complainant if the complaint could **not be resolved within 30 days**.
- CICS **maintain credit information of borrowers** which can be accessed by banks and other lenders.
 - They **collect information from** banks, credit card companies and non-bank financial institutions.
 - Lending institutions refer to CICS credit report to **decide borrowers' creditworthiness**.
 - CICS are **licensed by RBI**.

3.9.5. INVESTOR RISK REDUCTION ACCESS (IRRA) PLATFORM

- **Securities and Exchange Board of India** has launched **IRRA** platform at Bombay Stock Exchange (BSE).
- IRRA platform has been developed to **reduce risks faced by investors in eventuality of technical glitches at the trading member's end** at both the primary site and disaster recovery site.
 - It is **available to trading members supporting internet-based trading and security trading** through wireless technology for their investors.
 - It has been **jointly developed by all stock exchanges** – BSE, NSE, NCDEX, MCX and Metropolitan Stock Exchange of India.


3.9.6. UN "CONVENTION ON INTERNATIONAL TAX COOPERATION"

- **India voted in favour** of the UNGA resolution to establish a UN "Convention on International Tax Cooperation"
- The resolution titled "**Promotion of Inclusive and Effective International Tax Cooperation at the United Nations**," was introduced by **Nigeria**.
- **Objective of resolution**
 - Mandates forming a **member state-led, open-ended intergovernmental ad hoc committee** to develop a **comprehensive UN Tax Convention**.
 - Prioritizes international tax cooperation, aiming to finalize the **UN Tax Convention by June 2025**.
- **Significance/ Need of the move**
 - Address **various issues** related to **global taxation**, viz.
 - ✓ **Aggressive tax avoidance,**
 - ✓ **Illicit financial flows,**
 - ✓ **Recovery of stolen assets,**
 - ✓ **Fair taxation of the digital economy** etc.
 - Prevent **over \$480 billion** in **loss in tax income** every year due to **international tax abuse**.
 - Ends the **Organisation of Economic Cooperation and Development (OECD) monopoly** in tax-related policy.
 - Allows all countries to participate in **developing the rules**, by respecting **tax sovereignty**.
 - **Promotes cooperation** for a fair, sustainable, **modern international tax system**.



UN General Assembly (UNGA)

New York



About: One of the six principal organs of the United Nations

Genesis: Its powers, composition, functions, and procedures are set out in Chapter IV of United Nation charter of 1945


Objective:

- Appointing the Secretary-General on the recommendation of the Security Council,
- Consider and approve the United Nations budget,
- Discuss any question relating to international peace and security,
- Initiate studies and make recommendations to promote international political cooperation, the development and codification of international law, the realization of human rights and fundamental freedoms, etc.

Membership: 193 Member States


Is India a Member ☒

- Antrix is the **commercial arm of ISRO**.
- Indian government approached the **district court of Hague for cancellation of the UNCITRAL award** citing a 2022 Indian Supreme Court (SC) order.
 - SC ruled for the **liquidation of Devas Multimedia** on the charge of fraud.
- An award made under **UNCITRAL Arbitration Rules** is **binding** on all parties to the proceeding.
- **Arbitration laws in India**
 - **India's Arbitration and Conciliation Act 1996** (last amended in 2021) has been modeled on lines of the UNCITRAL framework of laws.
 - ✓ It aims to **modernize Indian arbitration law** and bring it in line with the best global practices and also make India a global hub for arbitration.
 - **New Delhi International Arbitration Centre Act, 2019** established the New Delhi International Arbitration Centre later renamed India International Arbitration Centre.



United Nations Commission On International Trade Law

Vienna, Austria
New York, USA



About: Core legal body of the United Nations system in the field of **international trade law**.

Genesis: Established in 1966 by UN General Assembly resolution

Mandate: To remove legal obstacles to international trade by progressively modernizing and harmonizing trade law.

Membership: 70 member states representing different geographical regions

- The General Assembly elects members for terms of six years
- India's membership expired in 2022

3.9.7. DEVAS INVESTORS CASE

- **Court in Hague rejected Indian government plea** against compensation to Devas investors.
- Mauritius investors of Devas Multimedia were **awarded \$111 million in compensation by the UN Commission on International Trade Law (UNCITRAL)** tribunal over a failed 2005 deal with Antrix Corp.
 - Under the deal, **ISRO was supposed to lease two communication satellites** for 12 years to Devas Multimedia.
 - **The cabinet terminated the agreement** due to security reasons in 2011.

3.9.8. BHARATIYA BEEJ SAHAKARI SAMITI LTD (BBSSL)

- The Ministry of Cooperation unveiled the Logo, Website and Brochure of the Bharatiya Beej Sahakari Samiti Ltd (BBSSL).

About BBSSL

- It was established in 2023 to provide **certified and scientifically** prepared seeds to every farmer in the country.
 - It was established under the **Multi-State Cooperative Societies (MSCS) Act, of 2002.**
- It will contribute to the field of **traditional seed conservation**, promotion and research.
 - **Traditional seeds** have to be conserved and passed on to the coming generations so that the production of healthy grains, fruits and vegetables continues.
- It is **jointly promoted** by the
 - Indian Farmers Fertilizer Cooperative Ltd (IFFCO)
 - Krishak Bharati Cooperative Ltd (KRIBHCO)
 - National Agricultural Cooperative Marketing Federation of India (NAFED)
 - National Dairy Development Board (NDDB)
 - National Cooperative Development Corporation (NCDC)
- **BBSSL and other cooperative societies are playing a key role in ensuring the welfare of farmers.**

3.9.9. INCREASE IN IMF QUOTA

- **International Monetary Fund (IMF) Executive Board approved** a proposal to increase in IMF Quota.
- The board proposes a 50 % quota increase allocated to members in proportion to their current quotas.
 - Now, the proposal will be considered and voted on by the Board of Governors, after which it will be made effective.
- **Significance of the rise in Quota**
 - Help **safeguard global financial stability** by enhancing the IMF's permanent resources.
 - **Reducing reliance on borrowed resources.**
 - ✓ Currently, the Fund relies on **bilateral borrowing arrangements** and pledges to a crisis lending fund called the **New Arrangements to Borrow** for nearly 60% of its lending resources.
- **About IMF Quota**
 - Quotas are the building blocks of the IMF's financial and governance structure.
 - ✓ Quotas are denominated in **Special Drawing Rights (SDRs)**, the IMF's unit of account.
 - **Use of Quotas is to determine**

- ✓ **Resource contribution of a member**
- ✓ **Voting power** in IMF decisions.
 - Members get **one vote per SDR100,000 of quota** plus basic votes, which are the same for all members.
- ✓ **Amount of loans a member can obtain** from the IMF.
- ✓ **General allocation of SDRs.**
- **India** currently has **Quota of 2.75 %** with voting rights of **2.63%.**



3.9.10. INTERNATIONAL COMPETITION NETWORK (ICN)

- **The Competition Commission of India (CCI)** became a member of the steering group of the ICN for the first time.
- **CCI membership** will be for two years.
- The ICN is a **specialized yet informal network** of 140 competition authorities.
- **The ICN's mission** is to advocate the adoption of superior standards and procedures in competition policy around the world.
- It is guided by its apex body- **the Steering Group of 18 members.**

3.9.11. BROADCASTING SERVICES (REGULATION) BILL, 2023

- **Ministry of Information and Broadcasting** proposed Broadcasting Services (Regulation) Bill, 2023.
- It will replace the **Cable TV Networks (Regulations) Act, 1995** and other policy guidelines that govern Information and broadcasting sector.
- **Key provisions:**
 - **Consolidated Legal Framework:** Will cover the **Over-the-Top (OTT)**, Direct-to-Home (DTH), Internet Protocol Television (IPTV), digital news and current affairs etc.

- **Introduction of Content evaluation committees:** To enhance self-regulation.
- **Programme and Advertisement Code:** It allows for a **differentiated approach** and it requires self-classification by broadcasters and access control measures for restricted content.
- **Broadcast Advisory Council:** Will replace the existing Inter Departmental Committee.
- **Equitable Penalties:** Monetary penalties and fines will be linked to the financial capacity of the entity.
- **Accessibility measures for persons with disabilities:** By enabling provisions for the issue of comprehensive accessibility guidelines.
- **Infrastructure Sharing, Platform Services:** Bill provides infrastructure sharing among broadcasting network operators and carriage of platform services.
- **Need of the bill:**
 - **Adopt unified and future-focused approach**
 - **Improve broadcasting sector's regulatory framework** by replacing out-dated Acts, Rules, and Guidelines.
 - **Promote Inclusion** of Divyangjan community, etc.
 - Enhance **ease of doing business** as one stop legislation.

3.9.12. DIGITAL ADVERTISEMENT POLICY 2023

- **Ministry of Information and Broadcasting approved the Digital Advertisement Policy 2023.**
- It will enable the Central Bureau of Communication (CBC) to **leverage the digital media space to create awareness about government schemes and policies.**
- **Objectives of policy**
 - To **improve the social media outreach** of various Ministries and Departments of the Government of India.
 - To implement a policy framework that enables Ministries and CBC to **engage with Social Media Platforms.**
- **Key features of the policy**
 - Enable CBC to **empanel agencies and organizations** in the OTT and Video on Demand Space.
 - The empanelment of **Digital Audio platforms** to leverage the growing number of listeners to Podcasts and Digital Audio.
 - **Introduces competitive bidding** for rate discovery, ensuring transparency and efficiency.
 - Empower CBC to **onboard New and Innovative Communication Platforms** in the Digital Space.

- **Benefits of policy**
 - **Effective delivery of citizen-centric messages** in a targeted manner,
 - **Cost efficiencies** in public-oriented campaigns.
 - Leverage a huge **subscriber base** (internet penetration in India as of March 2023, is over **880 million and over 1172 million telecom subscribers**)
 - **Technology-enabled messaging options**
 - Can channelize public service campaign messages through **Mobile Applications.**



3.9.13. INSURANCE SURETY BONDS

- NHAH accepted the **first insurance surety bond** as bid security.
- **About Insurance Surety bonds**
 - It is a **three-party contract** by which **one party (the surety)** guarantees the performance or obligations of a **second party** (the principal) to a **third party** (the obligee).
 - It acts as a **security arrangement for infrastructure projects** and insulates the contractor as well as the principal.
 - Insurance Surety Bonds (ISB), allowed by **Insurance Regulatory and Development Authority (IRDAI)** in April 2022, has been brought as a replacement of bank guarantees.

3.9.14. REFERENCE FUELS

- Indian Oil Corporation Limited (IOCL) launched India's first gasoline and diesel Reference Fuel (RF).
 - Currently, reference fuels are being imported by India.
- RFs are premium high-value products, used for calibration and testing of vehicles by Auto Original

Equipment Manufacturers and organizations involved in testing and certification in automotive field.

- Specification requirements of RF are more stringent than commercial gasoline and diesel.
- Indigenous RF meets Automotive Industry Standard specifications and is available at better price with reduced lead time.



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4. SECURITY

4.1. DISTURBANCE IN NEIGHBORING NATIONS AND INDIA'S INTERNAL SECURITY

Why in the news?

Recently, after a gunfight between the Myanmar Army and pro-democracy militias, about 1,500 people sought refuge in Mizoram's Champhai district.

Background of the Civil war in Myanmar

- Myanmar has been unstable since a **military coup in February 2021**, in which a democratically elected government led by Nobel laureate Aung San Suu Kyi was unseated.
- The recent conflict was part of the ongoing civil unrest between the Myanmar Army of the **ruling military junta (or the Tatmadaw)**, and pro-democracy militias 'The Brotherhood Alliance'.
 - The alliance is comprised of **three ethnic armed groups** – the Myanmar National Democratic Alliance Army (MNDAA), Ta'ang National Liberation Army (TNLA) and the Arakan Army (AA).
- The attacks are followed by a **major coordinated attack on regime forces** by three ethnic armed groups (**termed Operation 1027**).
- The UN stated around **2,00,000 have been displaced** following the current hostilities.
- **India's Stand:** Advocates for the **cessation of hostilities and dialogue in Myanmar** while continuing its security cooperation with the junta to address insurgencies.
 - The regional instability caused by the conflict in Myanmar has become a significant concern for India's internal security.

Impact of disturbances in the neighborhood on India's internal security

- **Illegal and influx of refugees:** This may cause unrest among the local population, and raise concerns about infiltration of extremists and smuggling of narcotics and weapons.
 - E.g., migration from Bangladesh during the Bangladesh Liberation War of 1971 led to ethnic clashes in regions of northeast India.
 - This also happened during the Rohingya crisis in Myanmar.

Ethical dilemma of refugees and illegal migrants

Arguments for Accepting Refugees

- **To uphold the rights of migrants** which must be guaranteed by all countries. Herein the Principle of Non-Refoulment gains significance.
 - This Principle prohibits States from transferring or removing individuals from their jurisdiction for believing that the person would be at risk upon return.
- **Humanitarianism:** It demands that humans accord respectful treatment and meaningful assistance to fellow beings and especially to the vulnerable.
- **Concept of Global citizenship**, transcending national boundaries, in the era of the interconnected globalized world.

Arguments against accepting Refugees

- **Against national security:** Illegal migrants are **more vulnerable to getting recruited** by terrorist organizations.
- **Governance challenge** as it is difficult to process and integrate a large number of refugees.
- **Resource allocation:** Puts a strain on the economy, as it may require additional resources for housing, education, and healthcare.

Characteristics of India's Neighbourhood



Diversity: It is highly diverse having absorbed **cultural, social, political, and economic influences** from far-flung regions.



Asymmetry: India and China are several times larger in population and size than any other country.



Democracy: Democracy has taken root in India but the task of **nation-building** is yet not complete in neighbouring countries.



Least Integrated region: It is one of the **world's least integrated regions** despite numerous commonalities and complementarities.



Influence of external powers: **External powers** have traditionally had a **large influence** on the **developments in the region**.

- **Political instability: Poor law and order in neighboring regions facilitate criminal activities** such as drug trafficking, arms smuggling, counterfeit currency etc.
 - E.g., There are apprehensions about the flourishing drug trade in the Shan State, known for narcotics production, sneaking into India.
- **Cross-border terrorism:** India has faced persistent challenges related to cross-border terrorism due to instability in Pakistan, Bangladesh, and Myanmar.
 - E.g., Terrorist organizations like the United Liberation Front of Assam get **safe haven** in Myanmar or Bangladesh due to the porous border and law and order situations in these countries.
- **Escalation of internal conflicts:** E.g., The influx of refugees in Manipur may heighten the ethnic conflict between Kuki and Meitei communities.
 - Meitei people have accused the Kuki community, who have ethnic ties with Myanmar's Chin state, of sheltering their kinspeople from Myanmar which, they feel, will alter the demographic balance.

India's engagement with its neighbour to bring peace

- **Joint military exercise:** To promote exchange of ideas and jointly rehearse tactics, techniques and procedures for conducting tactical operations for example Sampriti exercise with Bangladesh.
- **Support democracy:** India has been a strong proponent of democracy to give power to the people.
- **Humanitarian aid:** Indian disaster response capacities were rapidly and effectively deployed in response to disasters ranging from the tsunami in Sri Lanka and the water crisis in Maldives (Operation NEER) to the earthquake in Nepal.
- **India's Citizenship Amendment Act (2019)** provides amnesty and a fast track to citizenship for certain refugees currently in India from three neighbouring countries.
- India is **supporting more than 1 lakh Tibetan refugees and the Central Tibetan Administration** based in Dharamshala.

Way forward to address threats due to disturbance in neighbouring countries

- **Strengthen border security:** Through advanced technology, increased personnel, and improved infrastructure.
 - Herein, the recommendations of **Madhukar Gupta committee** assume significance.
- **Checking illegal migration:** The Ministry of External Affairs should work in close coordination with the Ministry of Home Affairs and the State Governments to address the issue of illegal migration by monitoring the demographic changes along bordering villages.
 - The government should also take up the issue **of repatriation of such illegal migrants with the Governments** of neighbouring countries for an early resolution.
- **Utilize Diplomatic engagements:** Along with bilateral dialogue, India should use various multilateral forums such as the United Nations, Commonwealth, South Asian Association for Regional Cooperation (SAARC), etc. to engage with neighboring nations for peaceful and coordinated resolution of internal issues.
- **Strengthening intelligence efforts holistically:** By combining technology, human intelligence, and international cooperation, to create a robust defence against cross-border terrorism.

4.2. GLOBAL NUCLEAR REGULATION

Why in the news?

Recently, the Russian parliament passed a bill revoking Russia's ratification of the Comprehensive Test Ban Treaty (CTBT).

More about the news

- The passage of the bill **will "mirror" the stand taken by the U.S.**, which has signed but not ratified the CTBT.
- The move has raised concerns that Russia may resume nuclear tests to try to discourage the West from continuing to offer military support to Ukraine.
- The incident sheds light on nuclear regulations and their efficacy across the globe.

International regulations regarding nuclear regulations

- **Comprehensive Test Ban Treaty (CTBT):** It prohibits **any nuclear weapon test explosion or any other nuclear explosion** anywhere in the world.
 - The treaty, adopted in 1996, cannot formally enter into force until it is ratified by 44 specific nations, **8 of which have yet to do so:** China, India, Pakistan, North Korea, Israel, Iran, Egypt, and the United States.

- India did not sign the treaty due to the **failure of the treaty to include a commitment by the nuclear-weapon States** to eliminate nuclear weapons within a time-bound framework.
- **Non-Proliferation Treaty (NPT), 1968:** It is aimed at **limiting the spread of nuclear weapons** through the three pillars of non-proliferation, disarmament, and peaceful use of nuclear energy.
 - **India, South Sudan, Israel, and Pakistan have never been signatories of the Treaty**, and North Korea withdrew from the Treaty in 2003.
 - India did not sign the treaty **due to biases** as it divided the world into “nuclear haves” and “nuclear have-nots.”
 - The **International Atomic Energy Agency (IAEA)** is entrusted with key verification responsibilities under the Treaty.
- **Treaty on the Prohibition of Nuclear Weapons (TPNW):** It is the **first legally binding multilateral agreement** to ban nuclear weapons.
 - A **United Nations treaty adopted** in July 2017 and came into force in 2021.
 - It is **signed by 91 states and ratified by 68 states**.
 - India did not sign as the treaty does not **constitute or contribute to the development** of customary international law, nor does it set any new standards or norms.
- **Concept of Nuclear-Weapon-Free Zones (NWFZ):** It is a regional approach to **strengthening global nuclear non-proliferation and disarmament norms** and consolidating international efforts towards peace and security.
 - **Presently there are five treaties:** Treaty of Tlatelolco (For Latin America and the Caribbean), Treaty of Rarotonga (for south pacific), Treaty of Bangkok (for southeast Asia), Treaty of Pelindaba (for Africa), Treaty of Semipalatinsk (for Central Asia).
- **Nuclear supplier groups, 1974:** It was established after India's nuclear test by the name of **Operation Smiling Buddha in 1974** and has 48 members.
 - It aims to **prevent nuclear exports for commercial and peaceful purposes** from being used to make nuclear weapons.
 - India wants NSG membership, **to enhance its nuclear power capacity and its need for raw nuclear materials**.

International Atomic Energy Agency
Vienna, Austria

IAEA

Genesis: It is an **autonomous organization** that came into force in **1957**.

Mandate: It works for the **safe, secure, and peaceful uses** of nuclear science and technology.

Members: 178 countries

Functions

- Encourages and assists **research, development, and practical application** of atomic energy for peaceful uses throughout the world.
- Provides **independent, international verification** that governments are abiding by their commitments to the peaceful use of nuclear technology.
- Enhances national, regional, and international capacities to **respond to nuclear and radiological incidents**.

Other Key Information: It is an independent international organization that reports annually to the UN General Assembly and UN Security Council.

Is India a member? ☒

Other treaties

Missile Technology Control Regime (MTCR)	<ul style="list-style-type: none"> It seeks to limit the risks of proliferation of weapons of mass destruction (WMD) by controlling exports of goods and technologies that could contribute to delivery systems. It has 35 members including India.
Fissile Material Cut-off Treaty (FMCT)	<ul style="list-style-type: none"> It is a proposed international agreement that would prohibit the production of the two main components of nuclear weapons: highly enriched uranium (HEU) and plutonium.
Outer Space Treaty (OST)	<ul style="list-style-type: none"> It prohibits the placing of nuclear weapons in space. India is a member of OST.

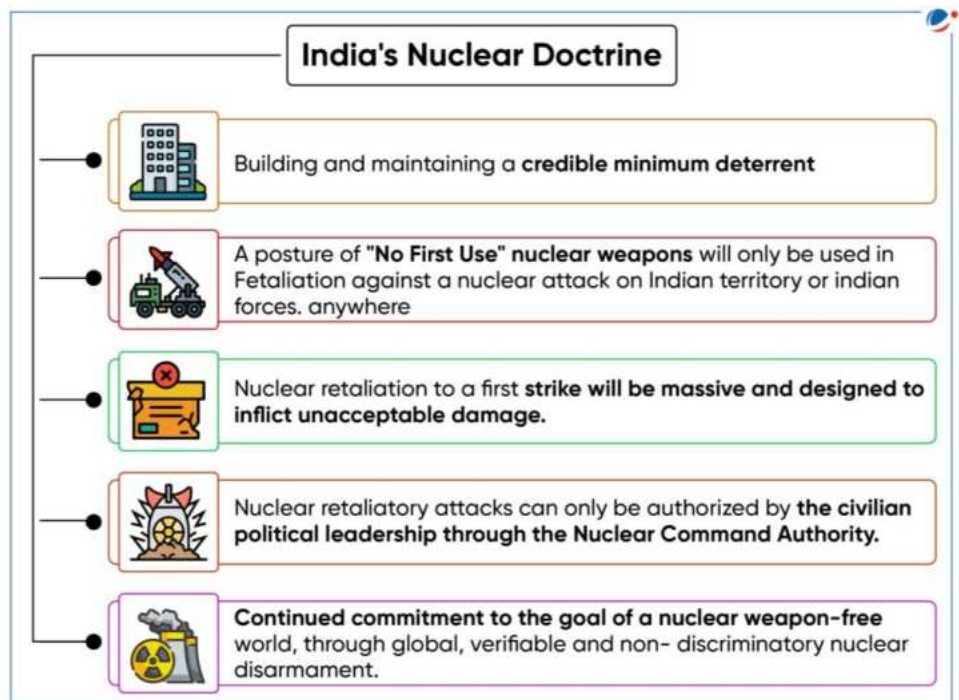
Effectiveness of Global Nuclear Regulations

- **Consensus Building:** Global consensus has been achieved on IAEA-established safety standards against the harmful effects of ionizing radiation.
- **Reduction in World nuclear stockpile:** Since its peak in the mid-1980s, global arsenals have shrunk by over three-fourths.

- More countries have **given up weapons and programs in the past 30 years** than have tried to acquire them.
- **Peaceful use:** It has been promoting peaceful use of nuclear technology for energy production, medicine, agriculture, and research without diverting it for military purposes.
- **Limited nuclear testing:** North Korea is the only nation to have tested a nuclear weapon in the 21st century.
- **Mechanisms for Response to nuclear accidents:** The IAEA helps maintain and strengthen effective emergency preparedness and response capabilities on a national and international level against nuclear accidents.

Limitations of Global Nuclear Regulations

- **Inadequacies in verification:** This has raised concerns about illicit trafficking in nuclear materials and the possibility of nuclear terrorism.
 - The access, budget, personnel resources and technological resources of IAEA, fall short of what would be needed to effectively monitor nuclear proliferation.
- **Rapid advancements in nuclear technology:** This includes new reactor designs and fuel cycles, pose challenges for regulators to keep pace with evolving risks.
- **Noncompliance:** E.g., Iran has allegedly engaged in a clandestine nuclear weapons program for many years, in violation of its obligations under NPT as a State Party.
- **Limited focus on disarmament:** E.g., Treaties like the NPT do not specify an end date for achieving disarmament.
- **Dual nature of technology:** Countries may pursue nuclear programs for peaceful purposes under full safeguards, and later divert it for military purposes.
- **Lack of commitment:** This is lacking from nuclear-armed states for disarmament of nuclear weapons due to the strategic importance of these weapons.
- **Lack of trust among countries:** This impedes international cooperation in the establishment of effective agreements and transparency between states regarding nuclear weapons.



Way forward

- **Increasing the IAEA budget** and reforming its safeguards, security, and personnel systems.
 - IAEA can regularly review and adapt to address evolving challenges and technological advancements.
- **Negotiating new-age non-discriminatory nuclear arms control treaties** that aim toward complete nuclear disarmament.
- **Revisit the safeguards and constraints placed on the production of fissile material**, so that they cannot be used for military purposes.
- **Role of UN** should be to advance international peace and security through the pursuit of the elimination of nuclear weapons and other weapons of mass destruction as mentioned in its goals.

Related news

- NATO announced the formal suspension of the **Treaty of Conventional Armed Forces** in response to Russia's pullout from the treaty.
- It was signed in 1990.
- The treaty set **equal limits on the number of tanks, armored combat vehicles, heavy artillery, etc.** that NATO and the Warsaw Treaty Organization could deploy between the Atlantic Ocean and Ural Mountains.

- Warsaw Treaty Organization (also called the Warsaw Pact) was a **political and military alliance that was established in 1955**.
 - It was between the Soviet Union and several Eastern European countries disbanded in 1991.

4.3. SPACE WARFARE

Why in the news?

China has reportedly established the world's first 'near-space command,' equipped with powerful hypersonic weapons.

More about the news

- The new command will act as China's 5th force, apart from the 4 current branches—Army, Navy, Air Force and Rocket Force.
- **Near Space:** It refers to the area in Earth's atmosphere, approximately **20 to 100 kilometers from the Earth's surface**.
 - In this region, the air is very thin, **preventing military aircraft from flying**, and **satellites can't be placed due to strong gravity**, creating a No-Man's land region.
- The near-space command will be equipped with-
 - **Modern hypersonic missiles** to target critical military assets of enemies;
 - ✓ Hypersonic missiles are projectiles that can move at a speed of at least Mach 5 (5 times the speed of sound).
 - ✓ Such missiles can operate in near space **due to the rarefied atmosphere**, enabling them to fly at **hypersonic speeds for long ranges**.
 - ✓ They are far more difficult to be detected by radar systems and to be destroyed by defence shields.
 - **Spy balloons, solar-powered drones** and other supporting equipment to carry out **High-altitude surveillance** around the globe.
- The command highlights the emergence of space as the 4th dimension of warfare.

“Space may hold the key to our future on the earth. No one can predict what the ultimate meaning will be of mastery of space.”

— John F. Kennedy

Know the term

- **Militarisation of space:** It refers to the use of space in support of ground, sea, and air-based military operations.
 - It helps **improve command and control, communications, strategic and battlefield surveillance, and weapon targeting**.
- **Spatial weaponization:** It refers to the placement in the orbit of space-based devices that have destructive capacity.
 - Through this outer space itself becomes the battlefield and emerges as the **'fourth frontier of war'**.

About Space warfare

- Advent of Space warfare **began in 1962** when the US exploded a ground-based nuclear weapon in space, which eventually led to the **Outer Space Treaty of 1967**.

Space weapons can be divided into

Earth-to-space kinetic weapons	<ul style="list-style-type: none"> • Includes direct-ascent and briefly orbital Anti-satellite (ASAT) weapons with a warhead or projectile that directly strikes or detonates near the target spacecraft
Earth-to-space non-kinetic weapons	<ul style="list-style-type: none"> • Includes jammers, lasers, cyber-attack methods, electronic attacks such as jamming and spoofing, high-powered microwave (HPM) and electromagnetic pulse (EMP) weapons etc. • Affect the working of the satellites (temporarily or permanently).
Space-to-space kinetic weapons	<ul style="list-style-type: none"> • Includes debris-creating, co-orbital ASAT weapons that may directly crash into a target satellite (damaging it or pushing it out of its orbit)
Space-to-space non-kinetic weapons	<ul style="list-style-type: none"> • Includes co-orbital jammers, HPMs, lasers, etc.
Space-to-Earth kinetic weapons	<ul style="list-style-type: none"> • Some weapon is de-orbited from a carrier spacecraft to attack terrestrial targets. • E.g., Fractional orbital bombardment system (FOBS)- a missile/satellite with a nuclear warhead placed in low orbit that can be directed at a target on Earth.

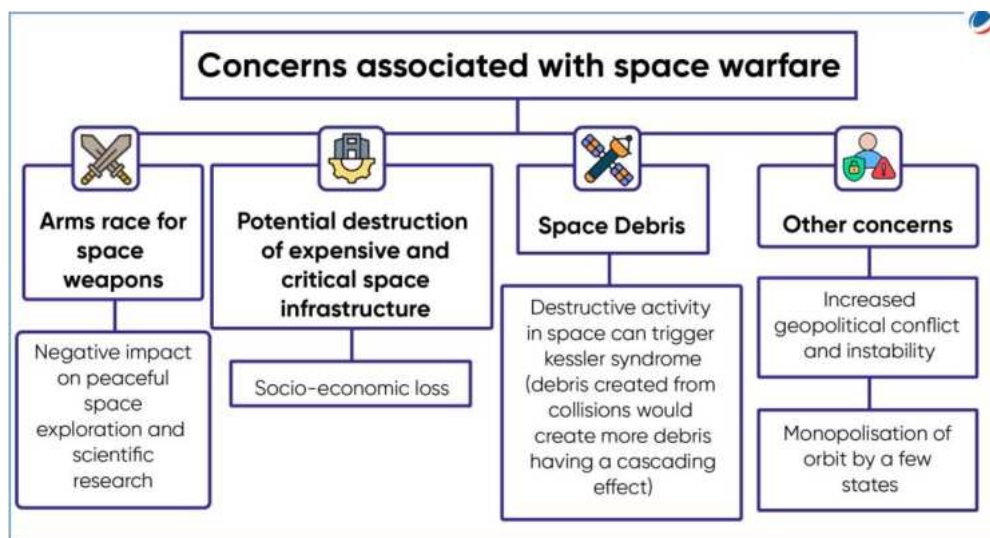
Why space is emerging as the next battleground of war?

- **Satellites are critical components within a state's national infrastructure** used for commercial as well as military purposes, making them a potential target for adversaries.

- E.g., **India** has two dedicated **military satellites** — the GSAT-7 (Rukmini) and GSAT-7A (Angry Bird).
- **Absence of comprehensive international agreements** and regulations governing military activities in space.
 - E.g., Treaties like the Outer Space Treaty, 1967 prohibit weapons of mass destruction in space but don't explicitly limit other kinds of space weapons, tests, or military space forces.
- **Rapid developments in space technology** like micro and nanosatellites, maneuvering satellites, satellite jammers, hypersonic missiles etc. have significantly enhanced the capacity of a nation to partake in offensive and defensive space operations.
 - E.g., China has developed capabilities to execute remote proximity operations (physically interacting with a target satellite to repair or refuel the satellite).
- **Lack of transparency and dual-use nature** of space technologies have created an element of distrust.
 - E.g., a Chinese high-altitude balloon was shot down in the U.S. on suspicion of conducting surveillance activities but was claimed to be for meteorological purposes.
- **Countries are investing in weaponization of space to create deterrence** and maintain a technological edge over adversaries or future threats.
 - Countries like China, India, Russia, and USA have conducted anti-satellite (ASAT) weapons testing.
- **Creation of dedicated space forces** in countries like the USA, France, Japan, etc to preserve their strategic interests.

Global framework for maintaining peace in space

- **Outer Space Treaty (1967)**: It is the basis of international space law and prohibits the placement of weapons of mass destruction in outer space.
 - India is a signatory to this treaty and ratified it in 1982.
- **Liability Convention (1972)**: It outlines the liability of Launching States for damage caused by their space objects both on the Earth or in space.
- **Convention on Registration of Objects Launched into Outer Space (1975)**: This convention requires space-faring nations to register their space objects with the UN.
- **Moon Agreement (1979)**: It states that the moon and other celestial bodies should be used exclusively for peaceful purposes and their environments should not be disrupted.
- **Partial Test Ban Treaty (PTBT)**: It prohibits all testing of nuclear weapons in outer space.



India's steps for developing capabilities in space

- **Defence Space Agency**: Created in 2019, supported by the Defence Space Research organization, and has been tasked with operating the space-warfare and Satellite Intelligence assets of India.
 - **Defence Space Research Organization** was created to facilitate the development of civilian space technology for military purposes.
- **Mission Shakti, India's Anti-Satellite Missile test (2019)**: It successfully demonstrated its capability to interdict and intercept a satellite in outer space based on complete indigenous technology.
- **IndSpaceEx**: It is India's **first-ever simulated space warfare exercise conducted in 2019**.
 - It assessed the requisite space and counter-space capabilities that are needed by India to protect its national security interests.
- **Mission DefSpace** was launched to make India Atmanirbhar in defence technologies in the space domain.

Challenges in India

- **Limited budgetary allocation**
- **Limited indigenous technologies** for detection of threats, protection, and offensive operations in space
- **Absence of 'defence of space' strategy**
- **Low focus on the military applications** of space technologies

Way forward for maintaining peace in space

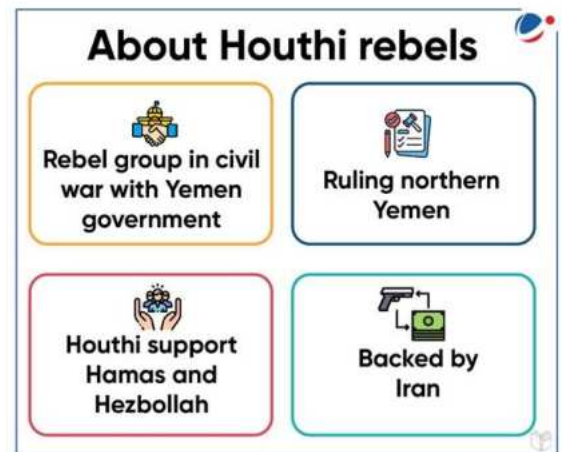
- **Develop comprehensive International Agreements** with features such as
 - robust verification mechanisms on the deployment of space weapons,
 - the principle of non-interference in sovereign space assets,
 - **proximity rules** on how close satellites can manoeuvre to each other,
 - mechanisms of data sharing,
 - cooperation in the removal of space debris etc.
- **Adopting Prevention of an Arms Race in Outer Space (PAROS):** It is a UN resolution seeking a ban on the weaponization of space.
- Creating an **international organization with expertise and credibility in outer space issues** to regulate the behavior of states and non-state actors in space.
- **Greater cooperation among nations** for sharing of technological capabilities of satellites that are located closely or pass each other regularly.

4.4. NEWS IN SHORTS

4.4.1. SHIP HIJACKED IN RED SEA

- **India-bound cargo ship hijacked** by Houthi rebels in Red Sea.
- **Saudi-led coalition** (an alliance of nine countries from West Asia and North Africa, led by Saudi Arabia) termed this as an act of armed group of “piracy”.
- The ship is called **Galaxy Leader** is **British-owned and Japanese-operated** and was heading from **Turkey towards Pipavav in Gujarat**.
 - The hijacking occurred approximately **150 km off the coast of Yemen’s port city of Hodeida**, near the coast of Eritrea.
- **The Red Sea** is, a **narrow strip of water** extending southeastward from the **Suez Canal** to the **Bab el-Mandeb Strait**, which connects with the **Gulf of Aden** and then with the **Arabian Sea**.
- **Importance of Red Sea trade Route:**
 - It is a **crucial route for international trade and energy shipments**; around 93-100%, of Arab countries’ total exports pass through it.
 - Approx. 10% of seaborne cargo sails through the **Red Sea** including most of the **Asian trade with Europe**.
 - Both the **US and China** have **Naval bases in Djibouti** which points towards the **geostrategic importance** of this region.
- **Challenges of Piracy**
 - Piracy can **deter trade along** key global shipping chokepoints and **disrupt critical supply chains**.
 - Strong nexus with **local mafia groups, illegal trafficking, or even terrorism**.
 - **Higher costs** arise as ships divert around piracy areas, requiring extra fuel, and **increased shipping insurance premiums**, etc.

- Piracy poses a **significant risk to sailors**, the **shipping industry**, and the coastal states that border the piracy-prone zone.



4.4.2. PROJECT KUSHA

- The **Defence Ministry** has accorded **Acceptance of Necessity (AoN)** for the development of the indigenous **Long-Range Surface-to-Air Missiles (LR-SAM)** defence system.
- **About Project Kusha**
 - The Project is designated under the purview of the **Defence Research and Development Organization (DRDO)** and aims to operationalize it by 2028-29.
 - Currently, India possesses **Russia’s S-400 air defence systems** for safeguarding its air space.
 - The system is to be **designed to detect and destroy a wide array of threats**, including stealth fighters, aircraft, drones and cruise missiles at **ranges of up to 350 km**.
 - The LR-SAM system will comprise three layers of surface-to-air missiles, each designed to engage targets at different ranges.

4.4.3. PRISONER'S DILEMMA

- Defence Minister referred to the concept of “Prisoner’s Dilemma” in his address to the Goa Maritime Conclave.
- **About Prisoner’s Dilemma:**
 - Prisoner’s Dilemma refers to one of the most popular “games” in Game Theory.
 - It is a paradox in decision analysis in which two individuals acting in their own self-interests do not produce the optimal outcome.
 - The best outcome lies in cooperation.

- **Game theory:** It is the science of strategy and attempts to determine mathematically and logically the actions that “players” should take to secure the best outcomes for themselves.

4.4.4. MILITARY EXERCISES IN NEWS

- **KAZIND-2023:** It is an annual India-Kazakhstan Joint Military Exercise.
- **Mitra Sakti-2023:** It is a joint military exercise between India and Sri Lanka.
- **Exercise Vajra Prahar:** It is a joint exercise conducted between the Indian Army and US Army Special Forces.

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5. ENVIRONMENT

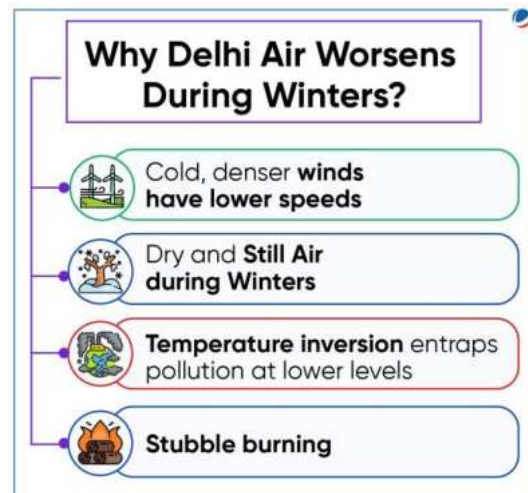
5.1. AIR POLLUTION IN URBAN INDIA

Why in the news?

Recently, Delhi, Mumbai, and Kolkata were among the world's 10 most polluted cities, according to a Swiss air quality technology company, IQAir.

Causes of air pollution in cities

- **Burning of Fossil Fuels:** Most air pollution occurs **due to the incomplete burning of fossil fuels**.
 - These include coal, oil, and gasoline to produce energy for electricity or transportation.
- **Industrial Emission: Particulate Matter (PM) 2.5 and 10, NO₂, SO₂, and CO** are key pollutants that are emitted from industries.
- **Open Burning of Garbage Waste:** Open-air garbage burning releases toxins such as **black carbon, soot, and carcinogens**.
 - It actively contributes to pollution and in turn to the **greenhouse effect**.
- **Construction and Demolition:** Construction and demolition sites are a rich source of **PM and other air pollutants including Volatile Organic Compounds (VOCs) etc.**
- **Indoor Air Pollution:** Use of toxic products also called VOCs, inadequate ventilation, uneven temperature, and humidity level can cause indoor air pollution.
- **Some Agricultural Practices:** Like **stubble burning** and use of **fertilizers and pesticides** in agriculture can release ammonia.
 - Also, **Livestock farming** is one of the major contributors to **methane emissions**.
- **Variations due to geographic processes:**
 - **Change in weather patterns.** For example, a dip in La Nina (**cooling of the ocean surface and change in wind patterns**) partially caused the recent spike in PM in coastal cities (including Mumbai).
 - **Dust storms, wildfires, and natural sources** of pollution also impact air quality in various regions of India. E.g., the temperature difference between the city and nearby hills draws winds and dust from areas like **Navi Mumbai** towards the city.



Impacts of urban air pollution

- **Adverse health outcomes:** It increases the risk of **respiratory infections, heart disease and lung cancer**.
 - **Children, elderly, and poor people** are more susceptible.
- **Climate Change:** Certain air pollutants, such as **black carbon (soot) and methane**, contribute to climate change.
 - **Methane** is a potent greenhouse gas, contributing to global warming.
- **Environmental Damage:** Air pollution contributes to environmental degradation, including damage to ecosystems, soil, and water bodies.
 - For instance, **Acid rain**, resulting from the release of **sulphur dioxide and nitrogen oxides**, can harm forests, aquatic systems, and soil quality.
- **Reduced Agricultural Productivity:** **Ground-level ozone** damages plant tissues, affecting photosynthesis and reducing crop productivity.
 - **Particulate matter** can also get deposited on crops, affecting their growth.
- **Economic Costs:** Health impacts of air pollution result in significant economic costs, including healthcare expenses, lost productivity due to illness, and the cost of premature mortality.
 - **Environmental damage and reduced agricultural productivity** can impact various sectors of the economy.

Regulatory measures taken to improve air quality

- **Vehicular Emission:**
 - **BS-IV to BS-VI norms** and introduction of **cleaner/alternate fuels** like CNG, LPG, and ethanol blending in petrol.
 - **Faster Adoption and Manufacturing of Electric Vehicles (FAME) -2 scheme** has been rolled out.
- **Industrial Emissions:** Ban on the use of **pet coke** and **furnace oil** in **NCR**, use of pet coke in processes in **cement plants, lime kilns and calcium carbide manufacturing units**.
 - **Shifting of brick kilns in Delhi- NCR to zig-zag technology** (zigzagging the air flow in brick kilns) for reduction of pollution.
- **Air Pollution due to dust and burning of waste:** **Extended Producer Responsibility (EPR)** framework for plastic packaging, battery waste, tire waste and e-waste have been implemented.
- **Monitoring of Ambient Air Quality:** **System of Air Quality and Weather Forecasting And Research (SAFAR)** was launched to know the Air Quality and Overall city pollution and Location-specific Air Quality through AQI.
- **National Clean Air Programme (NCAP):** Envisages to achieve **reductions up to 40%** or achievement of **National Ambient Air Quality Standards** for PM 10 concentrations by 2025-26.



Way ahead

- **Reduce Emissions by Optimizing Power Sector:** Inefficient power plant systems could be replaced by efficient super-thermal plants or with power generators that are based on renewable energy.
- **Implementing a National Emissions Trading System:** A market-based instrument within a regulatory framework based on the concept of '**polluters pay**' could be implemented.
 - Similar models exist in the **European Union (Emissions Trading System)**.
- **Implementation of a Business Model to Utilize Crop Residue:** Direct procurement of crop residue by large **agro-waste management companies, inter-state trading** for paddy stubble.
- **Tackle City Dust through ULBs:** Undertaking reforestation and afforestation drive along roadsides, covering landfills with vegetation.
- **Decarbonization of the transport sector:** Declaring some expressways and national highways as **green freight corridors**.

Global success stories to combat air pollution

- **Seoul, Republic of Korea:** **5G-enabled autonomous robots** scan industrial complexes to monitor air quality, while a **satellite monitoring** system offers real-time air quality data to the public.
- **Bogota, Colombia:** Strict emissions standards on trucks and other heavy-polluting vehicles; a fully electric metro rail system etc.
- **Spain:** **Four-day work week** trial in Spain leads to healthier workers, less pollution.
- **Southern California:** Electric cars, ship at-port electrification, cleaner fuel for trucks, ships and trains and mandatory installation of newer and cleaner engines.

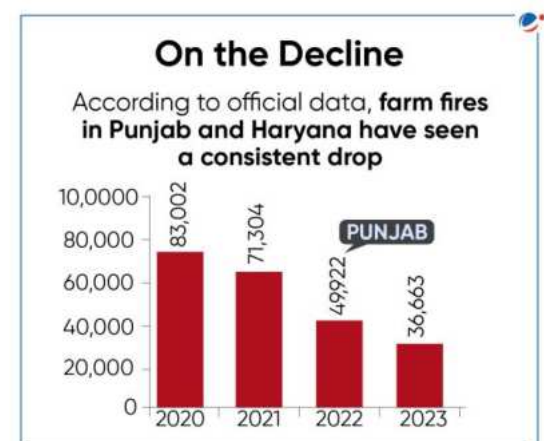
5.1.1. STUBBLE BURNING

Why in the news?

Supreme Court directed **Punjab, Haryana, Uttar Pradesh, Rajasthan, and Delhi** to stop stubble burning immediately which is considered a **major cause of air pollution in Delhi**.

About Stubble (Parali) burning

Stubble burning is a process of setting on fire the straw stubble, left after the harvesting of grains, like paddy, wheat, etc. It is usually required in areas that use the **combined harvesting method** which leaves crop residue behind.

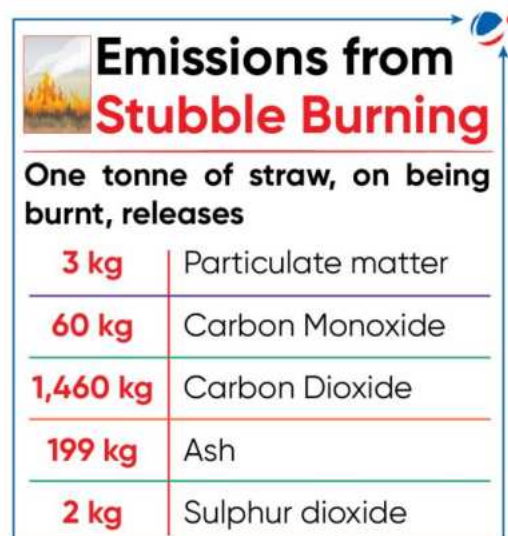


Reasons why farmers burn the stubble

- **Time Constraints:** In many agricultural regions, there is a narrow window between the **harvest of one crop and the sowing of the next**. Stubble burning is seen as a quick and efficient way to clear fields.
 - **For example**, in Punjab and Haryana, there is only **a two to three-week time** between cropping cycles.
- **Increased mechanization of harvesting:** Use of mechanized harvesters leaves **stubble of 10 – 30 cm in the field**, depending on the type of crop, which was not the case earlier with **manual harvesting**.
- **Labour shortage:** Use of expensive labour for stubble extraction is not feasible. Costs are high, especially in Punjab and Haryana, where farm sizes are large, and the use of mechanized harvesters is common.
- **No market for crop residue:** Low commercial and economic value of crop residue, coupled with the **high costs of processing**, reduces its value for farmers.
- **Tradition and Conventional Practices:** Stubble burning has been a long-standing practice in some agricultural communities and is considered a traditional approach passed down through generations.
- **Pest and Disease Management:** Farmers view burning the stubble can help eliminate pests, diseases, and weed seeds that may be present in the crop residue.
- **Access to Resources:** Limited access to resources such as equipment for residue management also indirectly encourages stubble burning.

Impact of stubble burning

- **Pollution:** Stubble burning emits toxic pollutants in the atmosphere containing harmful gases like **Carbon Monoxide (CO)**, methane (CH₄), carcinogenic **polycyclic aromatic hydrocarbons**, and **volatile organic compounds (VOC)**.
 - These pollutants disperse in the surroundings and eventually affect air quality and people's health by **forming a thick blanket of smog**.
- **Soil fertility:** **Soil becomes less fertile**, and its nutrients are destroyed when the husk is burned on the ground.
 - Burning paddy straw radiates heat **that kills fungus and bacteria which are essential for soil fertility**.
- **Heat penetration:** Stubble burning generates **heat that penetrates the soil**, causing an increase in **erosion and loss of useful microbes and moisture**.
- **Impact on Biodiversity:** Fires can destroy habitats for various wildlife species, such as insects, birds, and small mammals, which may rely on crop residues for shelter or food.

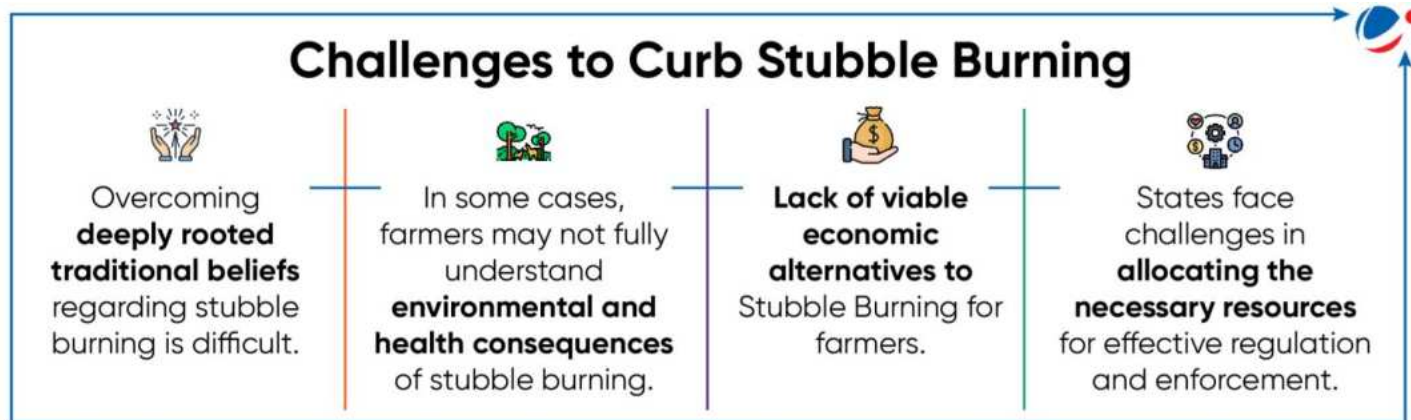


Emissions from Stubble Burning	
One tonne of straw, on being burnt, releases	
3 kg	Particulate matter
60 kg	Carbon Monoxide
1,460 kg	Carbon Dioxide
199 kg	Ash
2 kg	Sulphur dioxide

Regulatory Measures and Policies

- **National Policy for Management of Crop Residue (NPMCR) 2014:** Envisages adoption of **technical measures** including **diversified uses of crop residue, capacity building & training** along with formulation of suitable law/legislation.
- **National Green Tribunal (NGT)** had issued the following directions in 2015:
 - **Mechanism for collection of crop residue**, transportation, and utilization to be evolved.
 - **For persistent defaulters of crop residue burning**, appropriate coercive and punitive action could be taken.
 - **Every state must provide machines**, mechanisms and equipment or cost to the farmers to remove, collect and store straws.
- **Commission on Air Quality Management in NCR and Adjoining Areas (CAQM)** has developed an action plan for effective prevention and control of Stubble Burning.
 - **In-situ Crop Residue Management:** Setting up of Custom Hiring Centers, high yield, and short duration paddy varieties, staggering of harvesting schedule, extensive use of bio-decomposer.
 - **Ex-situ Crop Residue Management:** Alternative usage of paddy straw viz. **Biomass Power Projects**, Co-firing in Thermal Power Plants, Feed stock for 2G Ethanol plants, Feed stock in Compressed Biogas plants, fuel in industrial boilers, WTE plants, packaging materials etc.

- **Crop Diversification Programme (CDP):** A sub-scheme of **Rashtriya Krishi Vikas Yojana (RKVY)** in Haryana, Punjab & Western Uttar Pradesh since **2013-14** to **divert the area of water-intensive paddy crop** to alternative crops like **pulses, oilseeds etc.**
 - Government is implementing a Scheme for the Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and the National Capital Territory (NCT) of Delhi.



Way forward

- **New and Improved Seed Varieties:** Recently, the Indian Agricultural Research Institute has developed a **high-yielding short-duration variety** namely **Pusa-2090**.
 - The **Pusa-2090 variety matures in only 120 to 125 days** as compared to currently Pusa-44 which takes 155 to 160 days to mature.
 - New paddy variety **will give around 30 days time** to farmers to ready their fields for the next crop.
- **Innovative farm technologies:** Employing agricultural machines like **Happy Seeder, Rotavator, Baler, Paddy straw chopper etc.**
 - As these machines are cost-intensive, the **Government could provide adequate subsidies** to make these machinery affordable for farmers.
- **Biogas plants can curb crop burning:** These plants are installed by the government under '**waste to energy mission**' and they generate bio-gas by utilising crop waste such as rice straw through bio-methanation technology.
- **Pusa-bio-decomposer:** Developed by scientists at the **Indian Agricultural Research Institute**, which turns **crop residue into manure in 15-20 days** by accelerating the decomposition process.
- **Educating and empowering the stakeholders:** Educating and empowering the farming community could be an important step to making a significant impact.
- **Encouraging Sustainable Alternatives to Crop Residue Management:**
 - **Mulching:** Mulching involves **spreading crop residues** on the soil surface as a protective layer.
 - **Zero-Till Farming:** It minimizes soil disturbance and relies on the direct planting of seeds into crop residues.
 - **Residue Incorporation:** Instead of burning crop residues, farmers can incorporate them into the soil. Techniques like chiseling and ploughing help bury crop residues, enriching the soil with organic matter and nutrients.

5.1.2. CLOUD SEEDING

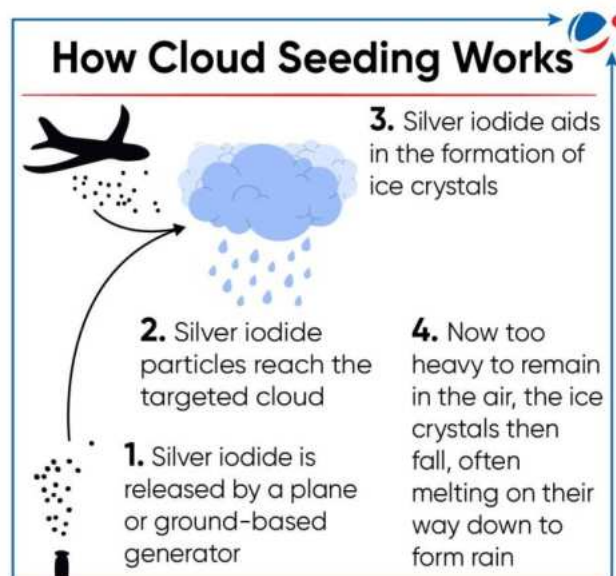
Why in the news?

Researchers discussed the possibility of **using cloud seeding to tackle Delhi's air pollution.**

About Cloud Seeding

- **Cloud Seeding:** It is a **weather modification technique** to enhance precipitation by dispersing substances into the air that help to saturate the clouds.
- **The Process:**
 - It starts with **identifying suitable clouds** through weather analysis using aircraft or ground-based generators.
 - Following this, **seeding agents are released** into the targeted clouds.
 - **Seeding particles help in the formation of larger water droplets**, which leads to increased rainfall.

- **Chemicals used:** To initiate cloud seeding, clouds are injected with salts such as **silver iodide, potassium iodide, sodium chloride, or dry ice (solid carbon dioxide)**, which acts as the seed.
 - These salts are dispersed to provide additional nuclei around which more cloud droplets can form.
- **Conditions required for cloud seeding to be effective:**
 - **Cloud type:** Not all clouds are suitable for seeding. Clouds should be **deep enough** and have a **suitable temperature**, typically between **-10 and -12 degrees Celsius**.
 - **Cloudiness:** Clouds should **cover at least 50% of the target area**.
 - **Wind:** Wind speeds should be **below a certain level**.
 - **Humidity:** Cloud seeding tends to be **less effective when relative humidity is less than 75%**.
 - **Temperature:** Clouds should be **cold enough to contain supercooled liquid water**.



Methods of cloud seeding

- **Hygroscopic cloud seeding:** It involves **dispersing salts through flares or explosives** in lower portions of clouds. Following the dispersal, the salts grow in size.
 - It has proved to have positive results in research conducted by countries such as South Africa and Mexico.
- **Use of electrical charges:** Electrical charges work similarly to silver iodide by helping water droplets to merge and form precipitation.
 - In 2010, researchers from the University of Geneva directed infrared to the air above Berlin.
 - The experiment showed that **infrared can help atmospheric sulphur dioxide and nitrogen dioxide form particles** that act as **seeds and cause rainfall**.

Applications of Artificial Rain (using Cloud Seeding)

- **Agriculture:** It helps to create rain, which can provide relief to **drought-stricken areas**.
 - For example, the **Karnataka government, in 2017, launched "Project Varshadhari"**, under which an aircraft was used to spray chemicals to induce rainfall.
- **Power generation:** Cloud seeding method has been shown to augment the production of **hydroelectricity** (enhancing rainfall in catchment areas) **in Tasmania, Australia**, during the last 40 years.
- **Water pollution control:** The process of cloud seeding can maintain **minimum river flows and dilute the impact of treated wastewater discharges** from industries.
 - Minimum river flows refer to **minimum quantity of water or ecological flow** that **various stretches** of the river **must necessarily have through the year**.
- **Fog dispersal and cyclone modification:** During winters, cloud seeding is initiated to **increase the mountain snowpack** to ensure that **additional runoff** is received during the spring melt season.
 - For example, **USA in 1962 launched "Project Sky Water"**, aimed at fog dispersal, hail suppression, and cyclone modification.
- **Controlling forest fires:** In regions prone to wildfires, cloud seeding can be used to **induce rainfall and help extinguish fires**, preventing the release of smoke and pollutants into the atmosphere.

How Artificial rain can help tackle pollution?

- **Clearing the atmosphere:** Rainfall induced through cloud seeding can help remove **particulate matter and pollutants from the air**.
- **Reduction of airborne pollutants:** Artificial rain can assist in reducing **concentration of pollutants, including dust, smoke, and chemicals**, by washing them out of the atmosphere and depositing them on the ground.
- **Mitigating smog and haze:** Cloud seeding can help **disperse smog and haze**, making the air clearer and more breathable.

Know the term

➤ **Snowpack** is snow on the ground in mountainous areas that persists until the arrival of warmer weather. Melting snowpack is an important source of water for many areas.

- **Research and Experimental Studies:** To better understand **atmospheric processes, cloud physics, and potential impacts of weather modification.**

Issues with inducing Artificial Rains

- **Side-effects:** The chemicals used in cloud seeding may cause **harm to plants, animals, people, and even the environment.**
 - For example, **silver iodide**, the material used in cloud seeding, **can be toxic to aquatic life.**
- **Abnormal weather patterns:** It may lead to **changes in climatic patterns**, interfering with local weather patterns.
- **High cost:** Cloud seeding involves dispersing chemicals to the sky using aircraft or flare shots, which involves **huge costs and logistic preparations.**
- **Ethical and Legal challenges:** Issues **related to water rights** and environmental impact.
 - Also, **ethical considerations regarding human intervention in natural processes** raise questions about different communities' rights to natural resources.

Conclusion

Collaborative efforts between **scientists, policymakers, and the public** are crucial to **establish clear guidelines, ethical standards, and regulatory frameworks** for the responsible implementation of cloud seeding projects. Also, dedicated research is necessary to understand the **long-term impacts of Cloud Seeding on ecosystems, weather patterns, and human health.**

5.2. UNITED NATIONS FORUM ON FORESTS

Why in the news?

India hosted a **Country-Led Initiative (CLI)** event as part of the United Nations Forum on Forests (UNFF) in Dehradun, Uttarakhand.

More about the News

- United Nations Forum on Forests (UNFF) **was established in 2000**, by the resolution of the **Economic and Social Council of the United Nations (ECOSOC)**, UNFF promotes the management, conservation, and sustainable development of all types of forests.
 - India holds the distinction of being a **founding member of UNFF.**
- **Country-Led Initiative (CLI)**'s primary goal is to **contribute to the discussions of UNFF regarding the implementation of Sustainable Forest Management and the UN Strategic Plan for Forests (UNSPF).**
 - It also aims to **facilitate the sharing of best practices among UNFF member States** for the implementation of SFM and the UNSPF.
 - India led CLI focused on one of the themes of **forest certification and Sustainable Forest Management (SFM).**

Forest Certification

- **Forest certification** is a **market mechanism** to promote the sustainable use and management of forests and to **identify "sustainably produced" products** for the consumer.
 - Some countries consider forest certification as an **effective means to ensure Sustainable Forest Management (SFM)** and a tool for preventing forest degradation or deforestation.
- It is a **voluntary process** whereby an independent third party (the "certifier") **assesses the quality of forest management and production** against a set of requirements ("standards") predetermined by a public or private certification organization.
- **Types:** There are **two types of forest certification:**
 - **Certification of Forest Management**, which assesses whether forests are being managed according to a specified set of standards; and





Do you know ?

- **UNGA** adopted the first-ever **UN Strategic Plan for Forests** for the period of 2017-2030, which serves as a global framework for actions at all levels **to achieve the sustainable management of all types of forests.**
- It consists of **six Global Forest Goals** and 26 associated targets to be achieved **by 2030**, which are **voluntary and universal.**

- **Certification of the Chain of Custody (CoC certification)**, which verifies that certified material is identified or kept separate from non-certified or non-controlled material.
- **Total forest area under certification has increased by 35%** (or 120 million ha) since 2010.
- **Developing countries continue to face several challenges** such as excessive costs of certification, audit and compliance issues, inaccessibility to forest owners in remote regions and lack of capacity due to the complexity of various certification standards.

What are the benefits of certified sustainable forests?

Environmental aspects

	Existing local biodiversity is maintained and enhanced.
	Ecologically important forest areas are protected.
	No use of hazardous chemicals or genetically modified organisms (GMOs).
	Climate-positive practices, such as reduction of GHG emissions , are applied.

Social aspects

	Consultations are carried out with the populations bordering the forest.
	Property and land tenure rights are respected.
	Respect for the health and well-being of forest communities is guaranteed.
	Human and workers' rights compliant with ILO recommendations are respected.

Sustainable Forest Management (SFM)

- **Definition:** According to Food and Agriculture Organization (FAO), SFM is the stewardship and **use of forests and forests lands** in a way, and at a rate, that:
 - maintains their biodiversity, productivity, regeneration capacity, vitality and
 - maintains their potential to fulfil, now and in the future, relevant **ecological, economic, and social functions**, at local, national, and global levels, and
 - **does not cause damage** to other ecosystems.
- **Constituents:** It implies various **degrees of human intervention**, ranging from administrative, legal, technical, economic, social and environmental actions aimed at safeguarding and maintaining forest ecosystems.
- **Outcomes:** Sustainably managed forests provide important **ecosystem services**, such as carbon sequestration, biodiversity conservation, and the protection of water resources.

Seven Elements of SFM

	Extent of Forest Resources
	Biological Diversity
	Forest Health and Vitality
	Productive functions of forest resources
	Protective functions of forest resources
	Socio-economic functions
	Legal, policy and institutional framework

Need for sustainable forest management

- **Biodiversity Conservation** by maintaining ecosystems, protecting endangered species, and allowing for natural regeneration.
- **Tackling climate change:** Forests act as carbon sinks, playing a crucial role in mitigating climate change and SFM is essential to minimizing the impact of climate change.
- **Community development:** Forests are the lifeline of millions of people in India, especially the tribal communities and forest conservation cannot be isolated from the well-being of communities that rely on forest resources.
- **Forest fire management:** In recent years, the world has witnessed an alarming increase in the scale and duration of wildfires.

- Approximately 100 million hectares, equivalent to **3% of the world's forest area**, is **affected by fires** every year.
- **62% of Indian states** are prone to high-intensity forest fires.
- **Traditional Knowledge:** Forests are a repository of medicinal plants and traditional knowledge.

Measures taken by India for SFM

- **Legislative Framework:** India has enacted various conservation-oriented legislations such as the Forest Conservation Act (FCA) 1980, the Indian Forest Act 1927, and Wildlife Protection Act 1972 etc.
 - For instance, the FCA allows the government to declare specific areas as reserved or protected forests, restricting degrading activities.
- **Joint Forest Management (JFM):** JFM involves the collaboration between forest authorities and local communities for the protection and management of forests.
- **Afforestation and Reforestation Programs:** Initiatives like the National Afforestation Program (NAP), Compensatory Afforestation Fund Management and Planning Authority (CAMPA), Green Highways Programme etc.
- **Technology Adoption:** Use of technology, such as Geographic Information System (GIS) mapping, satellite imagery, and remote sensing, assists in monitoring and managing forest resources.
- **Development of standards:** Through **Bhopal-India Process**, India developed its national set of 8 criteria and 37 indicators for sustainable management of its natural forests.
- **Community Forest Rights:** The Forest Rights Act, 2006 recognizes and vests forest rights in forest-dwelling communities thus harnessing the knowledge and capability of indigenous people in SFM.

Way Forward

- **India's proposal:** India proposed to launch **Gandhinagar Implementation Roadmap and Gandhinagar Information Platform** that emanated from the G20 deliberations, to tackle restoration of forest fire and mining degraded lands.
- **Global standards:** Setting up global benchmark standards for forest certification, conservation practices and forest fire management.
- **Integrated fire management strategy:** A concerted approach to the prevention, management, and restoration of forest fires and policy interventions.
 - Promoting the use of **Global Fire Management Hub** for sharing of best practices.
- **Community development:** Livelihood improvement programmes and incorporating incentive schemes while formulating forest management policies.
- **Cooperation:** Promote regional and international cooperation and coordination among governments to address subnational and transboundary forest fire issues.

Scan the QR code to know more about **Conserving the Forests**.

Weekly Focus #45: Conserving the Forests: Save Today, Survive Tomorrow



5.3. CLIMATE CHANGE AND CHILDREN

Why in the News?

Recently, the United Nations Children's Fund (UNICEF) released two reports titled '**Children Displaced in a Changing Climate**' and the **Climate-Changed Child: A Children's Climate Risk Index Supplement**.

More about the news

- The report establishes the **critical connection between climate, mobility, and childhood**.
- As per the report, millions of children are being driven from their homes by weather-related events, exacerbated by climate change.
- While the link between climate change and displacement is complex, it's clearer than ever that the **climate is shifting patterns of displacement**.





Key Findings of the reports

- Three countries dominate the results based on absolute numbers: **the Philippines, India, and China, with a combined total of almost 23 million child displacements** due to weather related events between 2016 and 2021.
- The Supplement Index Report examines two components:
 - Water scarcity** (the physical availability of water)
 - Water vulnerability** (the combination of water scarcity and lack of access to drinking water service).
- Key highlights of the supplement Index**
 - Almost **1 billion children** are exposed to high or extremely **high-water stress**.
 - India, Niger, Eritrea, Yemen, and Burkina Faso are among top 5 countries, which had the highest overall child exposure to high or extremely high-water vulnerability.

Factors behind Children's Vulnerability due to climate change

- Physical capabilities:** Because of their small surface-to-body ratio, infants and children are particularly vulnerable to dehydration and heat stress.
 - For e.g.** The UNICEF report predicts that by 2050, nearly 2.2 billion children (below 18+) worldwide will be at risk from frequent heatwaves.
- Economic and social inequality:** Children in poverty are more vulnerable to environmental shocks and stresses.
 - As per the **Oxfam India's report** on inequality in India, the bottom 50 % of the population possess only 3 % of the wealth.
- Lack of access to key essential services:** Such as water, sanitation and hygiene, health, education and social protection increase their vulnerability.
 - As per WHO, around **1.4 million** lives are lost each year due to inadequate water, sanitation, and hygiene.
- Less Focus on children:** In the Global climate change discourse and financing, children most of the time get ignored.
 - Only **2.4%** of climate finance from key multilateral climate funds support projects incorporating child-responsive activities.
- Spend more time outdoors:** Children these days tend to spend more time outdoors than adults, increasing their exposure to heat and cold, rain and snow, outdoor allergens, and insect bites.

ESTIMATED NUMBER OF DISPLACEMENTS BY HAZARD TYPE BETWEEN 2016 AND 2021

HAZARD TYPE	DISPLACEMENTS (IN MILLIONS)	CHILD DISPLACEMENTS (IN MILLIONS)
 STORMS	69.7	21.2
 FLOODS	58.4	19.7
 DROUGHTS	2.6	1.3
 WILDFIRES	3.4	0.8
TOTAL	134.1 MILLION	43.1 MILLION

Effect of Climate change on Children



Disease: For e.g More than 1,000 children under the **age of five** die each day from diseases arising from lack of water, sanitation and hygiene.



Diet and Nutrition: Climate change are associated with **failed crops** and **increased food prices**, leading to **reduced diet diversity** in children.



Education: For e.g In Ethiopia, for example, around 20% of girls and 5% of boys miss time in school to fetch water in normal circumstances.



Mental health: Extreme heat is associated with an increase in **mental health** problems including **post- traumatic stress disorder** and **depression** in children and adolescents.



Gender: For e.g, in Bangladesh, the number of marriages of girls ages 11 to 14 increased by 50% in **years with heatwaves** lasting longer than 30 days.



UNICEF



Established: In 1946



Genesis: Established by United Nation and became a permanent part of the United Nations system **in 1953**.



Area of operation: Present in over 190 countries and territories including India.



Objectives: To reach the most disadvantaged children and adolescents and to protect the rights of every child, everywhere.



Reports: The State of the World's Children 2023; Prospects for Children in the Polycrisis: A 2023 Global Outlook; Rights denied etc.

- **Developing emotionally:** Children are still at the developing stage emotionally and thus are more prone to **mental health impacts like trauma** from extreme events.

Way forward

The report talks about 3Ps i.e., Protect-Prepare-Prioritize to tackle children's vulnerability towards climate change.

- **Suggestions by the report**
 - **Protect**
 - ✓ **Child-critical services:** Child-critical services must be shock-responsive, portable, and inclusive, including for children already uprooted.
 - **Prepare**
 - ✓ **Proactive steps:** Prepare children and young people to live in a climate changed world by improving their adaptive capacities, resilience and enabling their participation.
 - **Prioritize**
 - ✓ **Priority to already displaced children:** Prioritize children and young people – including those already uprooted from their homes – in climate, humanitarian and development policy, action, and investments.
- **Suggestions by the Supplement Index**
 - **Including Children concern in UNFCCC COP28:** The elevation of children within the final COP28 Cover Decision and an expert dialogue on children and climate change.
 - **Inclusion in Global Goal for Adaptation (GGA):** The inclusion of children and climate resilient essential services within the final decision on the GGA.
 - **Funding Mechanism:** Make the Loss and Damage Fund and funding arrangements child responsive with child rights embedded in the fund's governance and decision-making process.
 - **Global Stocktake (GST):** The embedding of children and intergeneration equity in the GST.

5.4. GREEN BUILDINGS

Why in the news?

Recently **Indian Green Building Congress** was held in Chennai (Tamil Nadu) by the Indian Green Building Council (IGBC).

About Green Building

- Green buildings usually refer to the use of **environmentally friendly construction materials, processes, operation, and maintenance**.
- The concept of a green building is driven by incentives to **reduce the cost of energy and waste management** considering global warming and environmental degradation.
- **Some innovative solutions in green construction include Cool Roofs, Geothermal Heating, Smart Grid refrigerators, vegetated rooftops, etc.** For example,
 - **Agrocrete** is a **carbon-negative building material** made of crop residues such as paddy straw, wheat straw, sugarcane bagasse, etc.
 - **Carbon Craft Tile** is made with **upcycled carbon** by using recovered carbon waste as a resource.
- The global green building materials market is projected to grow **from \$422.27 billion in 2023 to \$951.15 billion by 2030**, at a CAGR of 12.3%
- Green buildings are different from **Energy-efficient, and Net-zero carbon buildings**.

Advantages of Green buildings

- **Emission reduction:** The **building and construction** sectors contribute about **38% of the greenhouse gas (GHG)** emissions and account for **35% of the total energy consumption**.



About IGBC



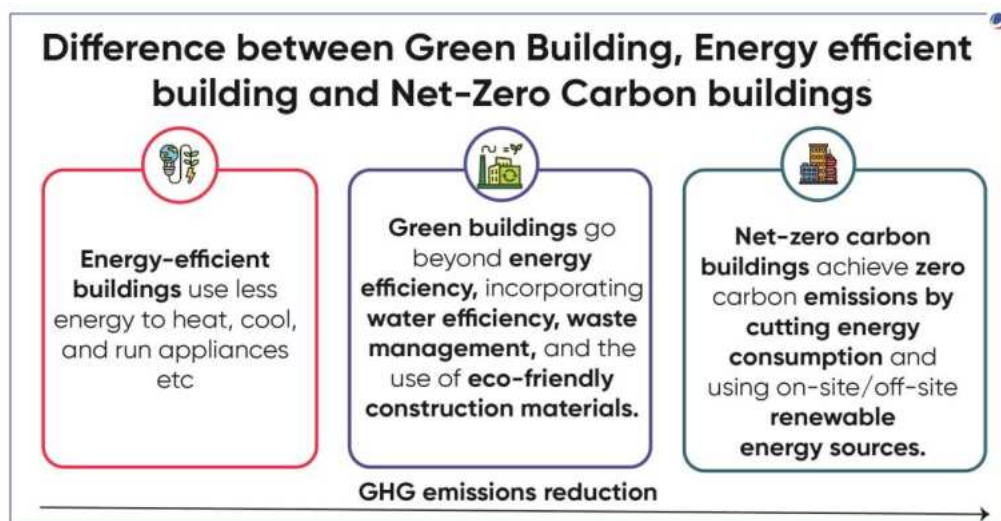
Genesis: Established by **Confederation of Indian Industry** in 2001.

About: IGBC is India's **Premier certification body for green buildings** which actively promote Green Building concept in India.

Other information: It is also the founding member of **World Green Building Council (WGBC)**.

- WGBC works with **businesses, organizations and governments** to deliver on ambitions of Paris Agreement and UN Global Goals for Sustainable Development.

- LEED-certified green buildings consume **25% less energy** than traditional buildings.
- **Economic benefits:** Green buildings have lower operation and maintenance cost.
 - Also, they improve **occupant productivity** and optimize **life-cycle economic performance**.
- **Social benefits:** Enhance occupant **comfort and health**, by ensuring clean air and water and less exposure to toxins and volatile organic compounds.



Steps taken for green building promotion

- **Energy Conservation Building Code (ECBC):** Introduced in 2007 (revised in 2017) by the Bureau of Energy Efficiency (BEE).
 - ECBC **establishes minimum energy standards for new commercial buildings** with a connected load of 100 kW or a contract demand of 120 kVA or more.
- **Eco-Niwas Samhita 2018:** launched by **Ministry of Power** Eco-Niwas (Energy Conservation–New Indian Way for Affordable & Sustainable homes) Samhita 2018 is **ECBC for Residential Buildings**.
- **Green Rating for Integrated Habitat Assessment (GRIHA):** Jointly developed by The Energy & Resources Institute (TERI) and Ministry of New and Renewable Energy (MNRE), GRIHA uses a **five-star rating, valid for five years**.
- **Leadership in Energy & Environmental Design (LEED):** An internationally recognized certification system for green buildings developed by the **U.S. Green Building Council**.
 - Recently, **India outperformed USA and China** in LEED net zero certifications.
- **Star Rating of Commercial Buildings:** Launched by the **Ministry of Power**, for assessing energy usage in the building on a 1-5 scale (5-star labelled buildings being the most efficient).
- **Faster clearances:** Ministry of Environment, Forest and Climate Change (MoEFCC) offers fast-track environmental clearance for green building projects which are **Pre-certified by IGBC**.

Challenges in adoption of green buildings

- **High initial construction cost:** The high initial construction cost of green buildings also results in higher rentals, making it challenging to attract investors and tenants.
- **Issues in construction:** The green building construction sector is fragmented around the world which may lead to uncertain supply of green materials. Also, there is a **limited access to design and skilled worker**.
- **Governance issues:** Extension of project schedules, lack of research and developmental works, poor building code enforcement, high payback period are key hinderance.
- **Limited Awareness:** There is a lack of awareness, information, and education about the benefits of green building both private and public benefit.

Way ahead

- **Economic Incentives:** Finance Commissions & Local bodies should encourage green buildings through **tax incentives** and other measures.
 - **Green projects need long-term investment**, which banks can support through the issuance of **green bonds**.
 - Banks can also offer **construction loans with lower interest rates** to incentivize developers.
- **Policy measures:** Fast track clearance for green buildings, enact legislation mandating green building standards for new constructions.

- Additionally, require the **retrofitting of existing buildings** to adopt environment friendly practices and become more sustainable.
- **Training and Capacity building:** Develop training modules and conduct training session for various industry stakeholders, including government officials, green rating agencies, architects, etc. to promote the adoption.
- **Awareness Campaigns:** Creating awareness on green buildings at school, college, and university levels.
 - This will enable educational institutions to develop **Industry-ready professionals** trained on green concepts and facilitate industry - academia linkage.

5.5. NATIONAL EFFICIENT COOKING PROGRAMME (NECP)

Why in the news?

Recently, **Energy Efficiency Services Limited (EESL)** launched the National Efficient Cooking Programme (NECP) and Energy Efficient Fans Programme (EEFP).

About National Efficient Cooking Programme (NECP)

- **Scheme** A subset of the **Clean Cooking Scheme**.
- **Aim:** To revolutionise cooking practices in India.
- **Target:** To deploy **20 Lakh induction-based cook stoves** across India.
- **Focus: Non-Solar/Electricity-based Induction Cookstoves**, aligning with the Go-electric initiative by the Ministry of Power.
 - **Go Electric Campaign** aims to create awareness on the **e-mobility ecosystem & benefits of electric cooking** through Information, Communication and Education (ICE) activities.

Energy Efficient Fans Programme

- **Aim:** Emphasizing on the importance and urgency of energy efficient fans.
- **Target:** To **distribute 1 Cr energy-efficient fans** that can reduce nearly 20% of total residential electricity consumption.

Other schemes for alternate cooking solutions

- **Unnat Chulha Abhiyan programme (2014):** For the promotion of improved biomass cookstoves in the country to reduce consumption of fuel wood with higher efficiency and low emissions.
- **National Biogas and Manure Management Programme (NBMMP):** For setting up of family-type household biogas plants to meet the cooking energy needs of rural and semi-urban areas.
- **Promoting solar cookers** to reduce indoor air pollution.
- **Pradhan Mantri Ujjwala Yojana (PMUY):** For providing them with clean cooking fuel through LPG.

Significance of the initiative

- **Benefits of e-cooking:** Efficient and safer alternative to traditional gas and electric stoves with **portability, convenience, and safety**.
- **Fulfilling rising demand for induction stoves:** With over **10 million units sold in 2021-22**, increased demand is attributed to factors like **modular kitchens, rising LPG costs, and the versatility of cooking with induction**.
- **Carbon footprint reduction:** These initiatives are aimed to **enhance energy efficiency** in Indian households and contribute to **carbon mitigation goals**.
- **Economic savings:** It offers a **cost advantage of 25-30%** over traditional cooking methods.
- **Other benefits:** Reduce dependence on **imported sources of energy, no difference in food cooked** on flame versus that cooked using induction cookers.


Energy Efficiency Services Limited (EESL)


Ministry: Ministry of Power.


Genesis: Founded in 2009 as a Joint Venture of 4 public-sector undertakings,

- NTPC Limited, Power Finance Corporation Limited, REC Limited and POWERGRID Corporation of India Limited.


Objective: To enable **ecosystems for responsible energy adoption** with innovations and market creation approaches.


Flagship Programs:

- Unnat Jyoti by Affordable LEDs for All (UJALA) scheme distributed LED bulbs across India.
- Street Lighting National Programme.
- Smart Meter National Programme.
- Buildings Energy Efficiency Programme.
- GRAM UJALA, AJAY (Atal Jyoti Yojana).


Other Facts: It is one of the main implementation arms of **National Mission for Enhanced Energy Efficiency**– a mission under **National Action Plan on Climate Change**.

5.6. ORGANIC FARMING

Why in the news?

During the National Symposium on 'Promotion of Organic Products through Cooperatives', organic food products of National Cooperative Organics Ltd (NCOL) were launched under brand name 'Bharat Organics'.

More about the news

- **Six organic products** were launched under the 'Bharat Organics' brand - tur dal, chana dal, sugar, rajma, basmati rice, and Sonamasoori rice.
- Concept of '**Organic under one roof**' i.e. a network of retail outlets for all organic products started through NCOL was also launched.
- NOCL is one of the **three** new cooperatives the government has set up; the other two cooperatives work in the field of **certified seeds** and **exports**.

What is organic farming?

- It is a unique production management system that **promotes and enhances agro-ecosystem health**, including biodiversity, biological cycle and soil biological activity.
 - This is accomplished **by using on-farm agronomic, biological, and mechanical methods** in exclusion of all synthetic off-farm inputs.
- **Benefits of Organic Farming**
 - **For the Environment:** Prohibits Use of Harmful Pesticides; Healthy Soil; Mitigate climate change through carbon sequestration; Reduces Erosion; Cleaner Water; Stimulates Biodiversity and microorganisms; Ethical pasture-based systems etc.
 - **For Farmers:** Reduces the input cost; Attract more customers; More resilient to extreme weather events etc.
 - **For Consumers:** Healthier; Higher nutritional quality etc.
- **Organic vs Natural Farming**
 - While both **organic and natural farming are similar** in certain aspects such as prohibiting use of synthetic fertilizers, use of on-farm biomass management and biological nutrient recycling, encouraging crop-diversity etc., they differ in certain aspects as well.

Differences between Organic and Natural farming	
Organic Farming	Natural Farming
Permits use of off-farm organic and biological inputs like compost, vermicompost, etc.	No external inputs used on farmlands; only on-farm-based inputs used.
Open for micronutrient correction through use of minerals.	Use of minerals not allowed .
Ploughing, soil tilling, and weeding might be undertaken in organic farms.	Mimics natural ecosystems: No ploughing, no soil tilling, and no weeding done on natural farms.

Major Challenges for the Organic Farming Sector

- **High input costs and low yields** in the initial years of transitioning from conventional to organic farming.
- **Inefficient supply chain** for marketing and distribution of organic food products.
- **Issues with certification process** like presence of multiple certifications, complex and costly processes, and inadequate number of third-party accreditations.

National Cooperative Organics Ltd (NCOL)

Anand, Gujarat

Genesis: Established in 2023 under the Multi-State Cooperative Societies Act, 2002.

Aim: To provide a platform to all the farmers doing natural farming across the country and to make arrangements for the marketing of their products.

Promoted jointly by:

- ◆ Amul
- ◆ National Cooperative Consumers' Federation of India Ltd (NCCF)
- ◆ National Agricultural Cooperative Marketing Federation of India Ltd (NAFED)
- ◆ National Dairy Development Board (NDDB) and
- ◆ National Cooperative Development Corporation (NCDC).

Function: It will sell the organic products in India and later will market in other countries.

Members: Any Cooperative Society or an association of persons (as may be permitted by the Central Registrar) can become a member of NCOL

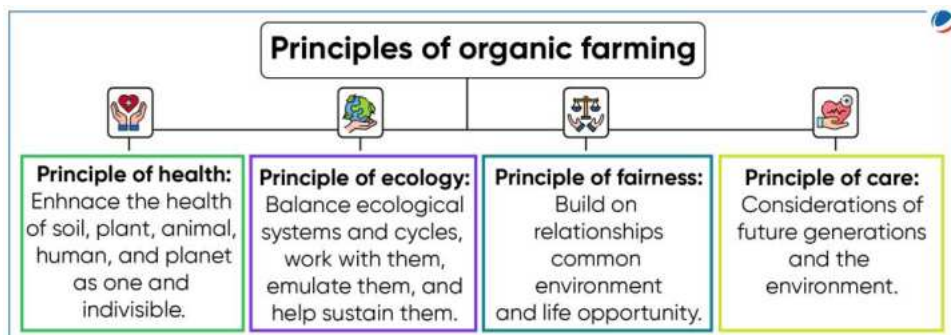
Data Bank

➤ India has the **highest number of organic farmers** in the world (**44.3 lakhs**). (Economic Survey 2022-23)

➤ **59.1 lakh ha** area has been brought under organic farming in India by 2021-22. (Economic Survey 2022-23)

➤ India ranks **6th** in terms of **certified area globally**. (The World of Organic Agriculture Statistics and Emerging Trends 2023)

- **Limited government support** for agriculture inputs needed for organic farming, especially for bio-fertilizers and bio-pesticides.
- **Lack of awareness** among farmers related to production technologies, compost management, pest control, and the benefits of organic farming.



Organic Certification regime in India

- **National Programme for Organic Production (NPOP):** System of **process certification** wherein an **independent organization** reviews the entire production, processing, handling, transport, etc. to ensure compliance with organic standards.
 - **Managed and operated by:** Agricultural and Processed Food Products Export Development Authority (APEDA) under the Ministry of Commerce and Industry.
 - NPOP-certified products can be traded **in export and in domestic markets including import.**
- **Participatory Guarantee System of India (PSG-India):** Quality assurance initiative that is **locally relevant, emphasizes the participation of stakeholders, including producers and consumers**, and operates outside the frame of third-party certification.
 - **Implemented by:** Department of Agriculture, Cooperation and Farmer's Welfare, Ministry of Agriculture, and farmer welfare.
- **Jaivik Bharat logo:** The Food Safety and Standards Authority of India (FSSAI) has introduced the logo to communicate the adherence to the **National organic standards (Both PSG and NPOP).**

Other Government initiatives for promoting organic farming

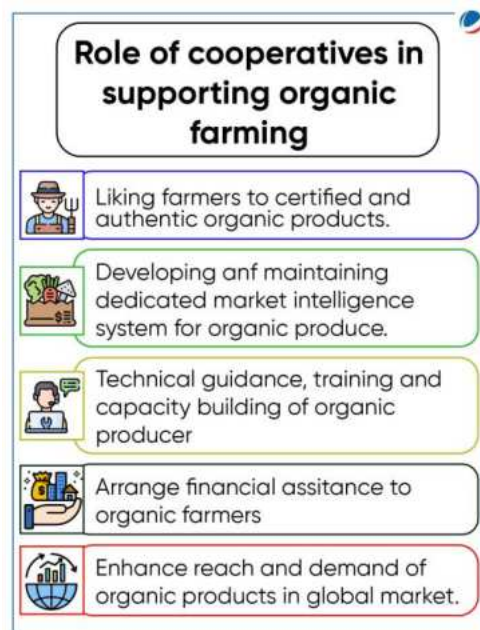
- **Pramparagat Krishi Vikas Yojana:** A cluster-passed program for the promotion of organic farming.
- **National project on organic farming:** A national center for organic farming was established at Ghaziabad to provide institutional support and to facilitate farmers for organic crop production.
- **Organic value chain development in Northeastern Region Scheme:** To link growers with consumers to support the development of the entire value chain starting from inputs, and seeds certification, in the Northeastern region.
- **Organic e-commerce platform** (www.jaivikkheti.in) for directly linking farmers with retail & bulk buyers.
- The government would help **10 million farmers switch to natural (or chemical-balanced) farming during the following three years**, according to Budget 2023.

State level initiatives

- **Kerala's Organic Farming Mission** aimed at expanding organic farming to 5,000 hectares in Kerala in the next five years through an annual target of 1,000 hectares.
- **Sikkim** became the world's first 100% organic state.

Way forward

- **Mobilizing and training farmers** to produce on-farm input through farmer-field schools, using information and communications tools.
- **Encouraging local decentralized production** of inputs for organic farming that utilizes local resources and generates village-level employment.
- **Strengthening certification regime** by simplifying processes, handholding farmers to obtain certifications, enhancing the number and reach of certifying agencies etc.
- **Incentivizing production of organic inputs** through government subsidies, tax benefits etc.
- **Investing in building the capacity** of small-scale manufacturers and entrepreneurs on composting techniques, quality assurance, and marketing and selling manure to upscale production.
- **Enhancing the role of cooperatives** to support organic farming.



Scan the QR code to know more about **Sustainable Agricultural Practices.**

Weekly Focus #68: Sustainable Agriculture Part II_Transforming India's Food Systems



5.7. NEWS IN SHORTS

5.7.1. CLIMATE EQUALITY

- **Oxfam** released a report titled “**Climate Equality: A Planet for the 99%**”.
- The report **emphasizes on the Climate Breakdown and Extreme Inequality** as twin challenges facing humanity.
- **Key findings**
 - In 2019, **super-rich 1% were responsible for 16% of global carbon emissions**, equivalent to emissions of the **poorest 66% of humanity**.
 - Since the 1990s, **super-rich 1% burned through twice as much of the carbon budget as the poorest half** of humanity combined.
 - The **emissions of the 1% are set to be over 22 times more than the safe limit** (the emissions allowed to stay below 1.5°C global warming) in 2030.
 - The **emissions of the super-rich 1% in 2019 are enough to cause 1.3 million deaths due to heat**.
- **Policy recommendations**
 - **Radical increase in equality:** Governments must implement proven policies to dramatically drive down the gap between the richest and the rest.
 - **Fast and just transition away from fossil fuels:** Implement a new wave of taxes on the corporations and billionaires to drive down emissions dramatically and fund transition.
 - **New purpose for a new age:** Prioritize human and planetary well-being over endless profit, extraction and consumption.

Know the term

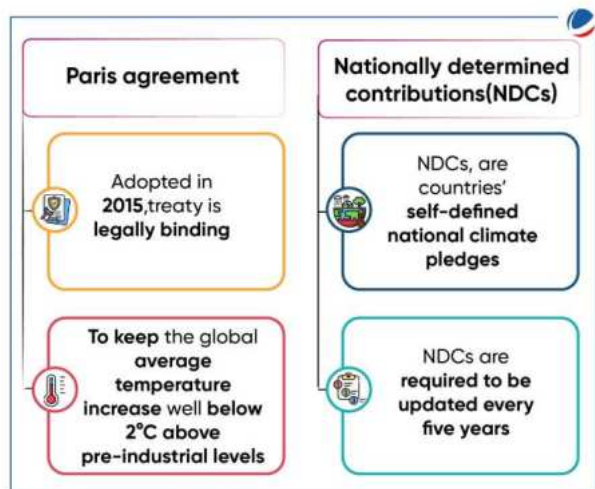
- **Climate Inequality:** Some communities experience **disproportionate impact of climate change because of existing vulnerabilities**, historical patterns of inequity, socioeconomic disparities, and systemic environmental injustices, etc.
- **Climate Equality:** It ensures **just distribution of the benefits of climate protection efforts** and alleviates unequal burdens created by climate change

5.7.2. ADAPTATION GAP REPORT 2023

- The report is **released by United Nations Environment Programme (UNEP)**.
- **Adaptation** is a process of **reducing countries and communities’ vulnerability to climate change** by increasing their **impact absorption ability**.
- Adaptation gap is the difference between **implemented adaptation** and societally set goals.
 - It is **determined by preferences related to climate change impacts, and reflecting resource limitations and competing priorities**.
- **Key highlights of the report**
 - **Adaptation finance needs** are 10-18 times higher than current public flows.
 - **Adaptation finance gap** is expanding, now at **US\$194-366 billion annually**.
 - Action plan on **loss and damage** has **overlooked non-economic losses** like **cultural heritage** and **indigenous knowledge**.
 - Only **2% of gender-tagged** international **adaptation finance** is gender-responsive.
- **Recommendations**
 - **Developed countries** should double their **climate finance for adaptation** from 2019 levels by 2025.
 - Increase and **improve budget tagging and tracking for integrating adaptation** into budget planning.
 - **Mobilize private investments**, by methods like **resilience bonds, and insurance**.
 - **Leverage remittances** which often **contribute significantly to Gross Domestic Product**.
 - **Financing Small and Medium Enterprises (SMEs)**, stimulating them to offer adaptation-relevant products and services.
 - **Implementation of article 2.1(c) of the Paris Agreement**, making **finance flows consistent** with a pathway towards low-carbon and climate-resilient development.



- Technology transfer,
- Availability of **market-based mechanisms**.
- **UNFCCC secretariat** (UN Climate Change) is tasked with **supporting the global response to the threat of climate change**
 - United Nations Framework Convention on Climate Change (UNFCCC), **adopted in 1992**, is the **parent treaty** of the Paris Agreement.



5.7.3. PARIS AGREEMENT SYNTHESIS REPORT 2023

- **UNFCCC secretariat released** Nationally determined contributions under the Paris Agreement Synthesis report 2023.
- The report **analysed NDCs of 195 Parties to the Paris Agreement**.
- **Key highlights**
 - **World is off track to Paris Agreement goals:** Implementing latest NDCs will **increase emissions** by approximately **8.8% by 2030**, relative to 2010 levels.
 - ✓ Emissions **need to be cut by 45% by 2030**, compared to 2010 levels to achieve Paris Agreement goal (IPCC report, 2018).
 - **Indigenous Peoples and local communities:** 40% of Parties outlined the **roles of local communities and rights of Indigenous Peoples** in adaptation components of NDCs.
 - ✓ This includes **addressing the specific vulnerabilities** of Indigenous Peoples, emphasizing the **importance of utilising Indigenous knowledge** to enhance climate efforts, etc.
 - **Gender-sensitive approach:** Parties are increasingly **recognizing gender integration** as a means to enhance the **ambition and effectiveness of their climate action**.
- **Recommendation:** To achieve **emission peaking before 2030**, essential factors include:
 - Enhanced **access to financial resources**,

5.7.4. STATE OF CLIMATE SERVICES REPORT 2023

- **World Metrological Organisation (WMO)** released State of Climate Services report for 2023.
- This year the annual report **focuses on health**.
- **Key highlights**
 - **Impact of Climate change:** Climate change **may reverse decades of progress towards better health** particularly in the most vulnerable communities.
 - **Financing gap for air pollution:** Air pollution is the **fourth biggest killer** by health risk factor yet **only 2% of international climate finance** commitments go to tackle it.
 - **Underutilization of climate information:** Climate information enhances public health prevention strategies and preparedness to save lives.
 - ✓ **74% of National Meteorological and Hydrological Services** provide climate data to health actors, but **utilization** of these data **remains limited**.
 - **Climate services for health:** It includes **collaboration** among partners to identify access, generate, and use **reliable climate knowledge** for better health decisions. Such services are facing:
 - ✓ **research and knowledge gaps**,
 - ✓ **lack of access** to sufficient **local meteorological observations**
 - ✓ **insufficient human and institutional capacity**, etc.

- **Recommendation:** There is a need for **tailored climate information and services** to support the health sector. This can be achieved through:
 - Developing **in-country capacities** to improve local knowledge.
 - **Policy mandates** for health and meteorological actors to collaborate.
 - **Raising awareness** about the importance of climate information.

World Meteorological Organization (WMO)
WORLD METEOROLOGICAL ORGANIZATION
HQ Geneva

About: An intergovernmental organization and a specialised agency of the UN.

Genesis: Established in 1950 and traces origin to International Meteorological Organization (IMO).
 • 1873 Vienna International Meteorological Congress led the formation of IMO

Objective: Dedicated to international cooperation and coordination on state and behaviour of Earth's atmosphere, its interaction with the land and oceans, the weather and climate it produces, and the resulting distribution of water resources.

Membership: 193 Member States
 is India a member ✓

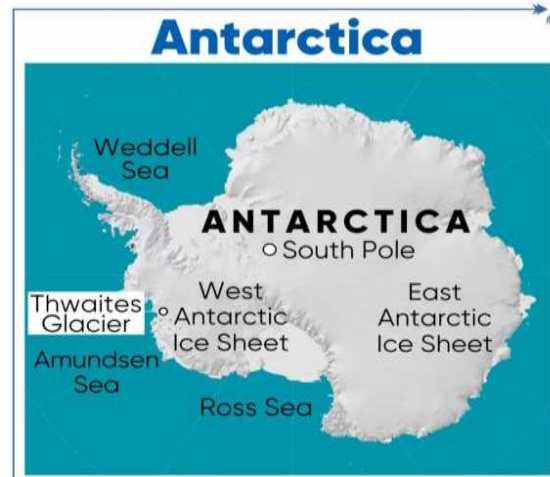
Other reports:

- State of the Global Climate
- Air Quality and Climate Bulletin

5.7.5. ICE MELT IN WEST ANTARCTICA

- According to research accelerated ice melt in West Antarctica is unstoppable.
- The researcher used a **high-resolution computer model of the Amundsen Sea**.
- **Ocean-driven melting of floating ice shelves** in the Amundsen Sea is the main process controlling sea-level rise.
 - **The Amundsen Sea** is located off the coast of West Antarctica.

- **About Ocean-driven melting of floating ice:** It follows the following sequence-
 - **Melting causes the retreat of the grounding line** (i.e. the line where the ice first goes afloat).
 - It **reduces the resistance to ice flowing** across the grounding line.
 - Faster flow near the grounding line causes **more horizontal stretching** leading to thinning.
 - It creates **steeper surface slopes which increases the stress** that drives the ice forward,
 - The faster flow inland causes thinning to propagate even further into the interior of the ice sheet, **increasing the contribution to sea level rise**.
- **Impact of the recent revelation**
 - **Enormous impact on sea level:** West Antarctic ice sheet, if completely lost, could contribute to sea level rise of up to 5 meters.
 - **Impact on coastal cities:** Over a third of the **global population resides within 100 kilometers** of the coast, making them vulnerable to sea level rise.



5.7.6. GLOBAL LANDSCAPE OF CLIMATE FINANCE 2023 REPORT

- The report is **released by Climate Policy Initiative**.
- Climate finance refers to **financing**, from public, private, and alternative sources, that seeks to support **mitigation and adaptation actions** to address climate change.
 - Mitigation tackles the **causes of climate change**, whereas adaptation tackles **the effects of climate change**.
- **Key highlights of the report**
 - **Average annual climate finance flows reached almost USD 1.3 trillion in 2021/2022, nearly doubling then the previous year.**
 - China, US, Europe, Brazil, Japan, and India received **90% of increased climate finance**.
 - **Climate finance is uneven across sectors**, energy and transport continue to attract the majority of flows:

- **Private actors** provided **49%** of total climate finance.
- **Adaptation finance** continues to lag, with **98%** coming from the public sector.
- **Recommendations:**
 - **Reforming international financial institutions**, with rules, and incentives aligned with climate needs.
 - Leveraging **concessional finance** to expand private flows.
 - **Mainstreaming climate adaptation and resilience** into financial systems.
 - Phasing out unabated fossil fuels through a **just transition**.
 - Making **climate finance data widely available** and accessible.
 - Work across countries to **harmonize and enhance interoperability**.

Global Climate finance mechanisms

- **Global Environment Facility** (established in 1992 Rio Earth Summit): It is a **unique partnership** of 18 agencies working with 183 countries to address the world's most challenging environmental issues.
- **Adaptation Fund** was established in 2001 to finance concrete adaptation projects and programmes in developing countries Parties to the Kyoto Protocol.
- **Special Climate Change Fund (SCCF)** was established in 2001 to finance projects relating to: adaptation; technology transfer and capacity building; energy, transport, etc.
- **Least Developed Countries Fund (LDCF)** was established to support a work programme to assist Least Developed Country Parties in carrying out the preparation and implementation of national adaptation programmes of action (NAPAs).
- **Green Climate Fund** (established under **Cancún Agreements** in 2010), is mandated to support developing countries in raising and realizing their Nationally Determined Contributions (NDC) ambitions.

5.7.7. WORLD'S LARGEST SOLAR FACILITIES

- Recently launched **Noor Abu Dhabi** of the UAE is one of the world's largest stand-alone operational solar plants with a total capacity of 1.2 GW.
- **Other largest solar power plants**
 - **Bhadla Solar Park** (multiple plants) in **Rajasthan** has a capacity of **2.25GW**.
 - **Pavagada Solar Park** in **Karnataka** has a capacity of **2 GW**.
 - **Ramagundam Floating Solar PV Project** at **Ramagundam, Telangana** is **India's largest floating solar power project** (commissioned in 2022).
 - **Cochin International Airport** is the world's **first solar-powered airport**.

5.7.8. DRAFT GUIDELINES TO PREVENT GREENWASHING

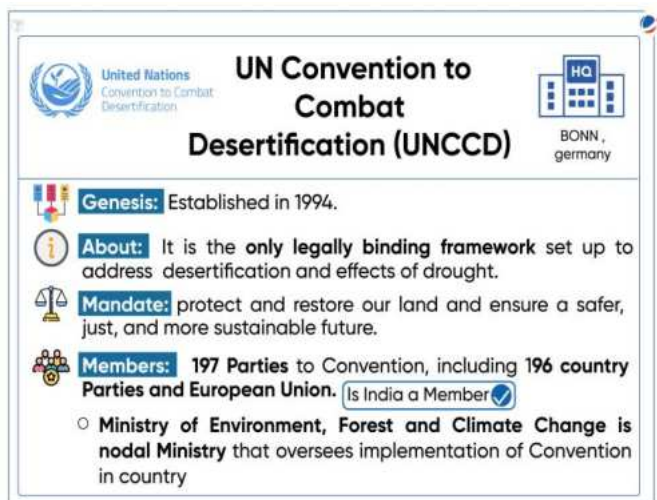
- **Advertising Standards Council of India (ASCI)** proposed **Draft Guidelines for Environmental/Green Claims in Advertising** to make advertising free of Greenwashing.
 - **ASCI** was **formed in 1985** as a **self-regulatory organization** by professionals from the advertising and media industry to keep Indian ads decent, fair, and honest.
- **Greenwashing (also called green sheen)** is a deceptive practice of making misleading **environmental claims**.
 - **Environmental claims** mainly **suggest** or **create an impression** that a **product/service** has a **neutral** or **positive impact** and is less damaging to the environment.
 - It utilizes different methods such as **Fibbing** (make false claims such as 'net-zero', 'green', 'ecological' etc.), **Vagueness** (non-specific about processes or materials used) etc.
 - The term was coined by **Jay Westerveld** in 1986.
- **Proposed Guidelines:**
 - Absolute claims such as **environment friendly, eco-friendly, sustainable, planet friendly** must be supported by a **high level of substantiation**.
 - Environmental claims must be based on the **full life cycle of the advertised product or service**.
 - **Certifications** and **Seals of Approval** should make clear which attributes of product/service have been evaluated.
 - Claims of a product being **compostable, biodegradable, recyclable, non-toxic, free-of** etc. should be based on **reliable scientific evidence**.



5.7.9. UNCCD DATA DASHBOARD

- UN Convention to Combat Desertification (UNCCD) launched its first-ever Data Dashboard.

- It **compiles national reporting figures** from 126 countries, which shows that **land degradation is advancing at an astonishing rate** across all regions.
- Key findings**
 - Between 2015- 2019, **at least 100 million hectares** of healthy and productive land were **degraded every year**.
 - India's **9.45 percent reported land area** is degraded.
 - Between 2016- 2019, **50.49 percent** of global reported land area and **36.8 percent of India's land area** is **affected by drought**.
 - Eastern and Central Asia, and Latin America and Caribbean regions** experience the **most severe degradation**.
- Land degradation** is the **deterioration or loss of productive capacity** of the soils for present and future.
 - 109 countries have set voluntary **Land Degradation Neutrality (LDN) targets for 2030**.
 - LDN is a state whereby the **amount and quality of land resources** necessary to support ecosystem functions and services to enhance food security **remain stable, or increase**, within specified ecosystems.
- India's Initiative for Land Degradation**
 - India joined voluntary **Bonn Challenge** pledge to bring into **restoration 26 million hectares** of degraded and deforested land by 2030.
 - Desertification and Land Degradation Atlas of India**, for state-wise areas of degraded land.



5.7.10. SAND AND DUST STORMS (SDS)

- A report titled '**Sand and Dust Storms (SDS): A Guide to Mitigation, Adaptation, Policy, and Risk Management Measures in Agriculture**' was released.
- In the report, **Food and Agriculture Organization (FAO)** highlighted that SDS frequency is consistent with climate change projections.

- It indicates the expansion of **global drylands**, increased **aridity** and **worsening drought conditions**.
- SDS** occurs when **strong, turbulent winds erode small particles** from dryland surfaces with little or no vegetation cover.
 - 75% of global dust comes from **natural sources** and 25% from **anthropogenic sources**.
 - Major anthropogenic factors responsible for SDS include **land-use change, agriculture** and **deforestation**.
- Implications of SDS:**
 - Affects 11 of the 17 **Sustainable development goals (SDG's)**.
 - For instance, progress in **SDG 6 (clean water and sanitation)** is disrupted as dust depositions are compromising water quality.
 - Deposition of dust on **glaciers** induces a **warming effect** and increases the **melting of ice**.
 - Reduces agricultural yield due to **sandblasting** (damage plants by impact, burial, and exposure of plant roots).
- Recommendations:**
 - Sustainable** land and water management.
 - Structural stabilisation measurements** through **windbreaks, agroforestry** and **afforestation**.
 - Risk/impact assessment** and **vulnerability mapping**.
 - Strengthening of risk governance** and **increasing investment and financing** in SDS risk reduction.



5.7.11. RED SANDERS REMOVED FROM RST

- 77th CITES Standing Committee** meeting removed Red Sanders from **Review of Significant Trade (RST)**.
- CITES RST is a process where Standing Committee **closely examines a country's species exports** to ensure compliance with CITES.
 - Noncompliance** may lead to **disciplinary actions** through **trade suspensions**.
 - India has been under RST process for Red Sanders since **2004**.
 - Removal from RST will help farmers** growing **Red sanders** enter the **supply chain of legitimate trade**.

- **Exemption** from RST has been **attributed to**, among others, the **2022 amended to Wild Life (Protection) Act, 1972**.
 - Amendment **incorporated provisions of CITES** as mandated under the **CITES National Legislation Programme (NLP)**.
 - **As a result**, CITES Standing Committee has now moved India **from Category 2 to Category 1**.
 - ✓ **Under NLP, based on compliance** level Parties could be placed in any of the **three categories** (refer to the box).
- **About Red Sanders**
 - **Distribution:** Endemic to **tropical dry deciduous forest of Eastern Ghats** and referred to as **‘the pride of Eastern Ghats’**.
 - **Conservation Status:** IUCN Red List (Endangered), CITES (Appendix II), Wildlife Protection Act (Schedule IV).
 - **Other feature:** Plants heartwood is heavily impregnated with **red dye called ‘santalin’, for which it is valued**.

- **CITES** (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an **international agreement between governments**.
- Its aim is to **ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species**.

3 categories of Parties under CITES NLP

- Category 1: legislation that believed generally to **meet the requirements** for implementation of CITES
- Category 2: legislation that is believed generally **not to meet all of the requirements** for the implementation of CITES
- Category 3: legislation that is believed **generally not to meet the requirements** for the implementation of CITES.

5.7.12. TROPICAL TIMBER

- **59th Council session** of the **International Tropical Timber Organisation (ITTO)** concluded recently.

- The objective of the session was to promote **sustainable tropical forest management** activities.
 - Also, it emphasized on ensuring the trade of **sustainably produced tropical timber**.
- **Tropical forests** are major source of timber. Tropical timber includes logs, sawnwood, veneer sheets and plywood.
 - **Tropical forests** represent 45% of all forests. These are situated between the **Tropic of Cancer** and **Capricorn**.
 - ✓ Main tropical forest includes **Amazon rainforest, Congo Basin** etc.
- **Major uses of Tropical Timber:**
 - **Construction:** In **houses, railway sleepers, the piers, and jetties** etc.
 - **Fuel:** In both, **domestic and industries**.
 - **Other Uses:** Production of **paper, synthetic textile fabrics** like **Rayon** etc.
- **Major Threats to sources of Tropical Timber:**
 - **Deforestation:** Due to land use change to agriculture and urbanization, illegal logging, and wood fuel collection.
 - **Forest degradation:** It is due to wildfires, climate change etc.
- **Initiatives for Tropical Timber:**
 - **International Tropical Timber Agreement (ITTA)**, 2006
 - **ITTO's Strategic Action Plan (2022–2026)**
 - **ITTO/ Convention on Biological Diversity (CBD) Collaborative Initiative for Tropical Forest Biodiversity**
 - **Intergovernmental Panel and Forum on Forests** {United Nations Conference on Environment and Development (UNCED, 1992)}



5.7.13. NOA-DIHING MUSIC FROG

- Biologists from **Wildlife Institute of India** have discovered the new species of music frog in the **Namdapha-Kamlang landscape of Arunachal Pradesh**.
- The species is named after the **Noa-Dihing River**.

- **Noa-Dihing River** it is a tributary of **Brahmaputra River**.
- **Key Features of Frog**
 - **Genus: Nidirana** (first time frog of this species are found in India)
 - Characterized by a **pale cream-colored line on the mid body** with '**rounded**' snouts and **bony protrusions on their backs**.
 - They are referred as **Music frogs** because of their **unique call pattern**.

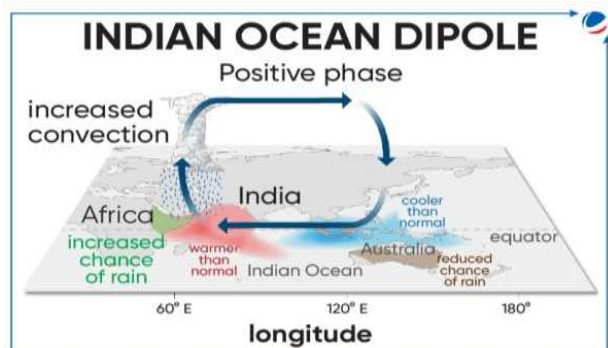
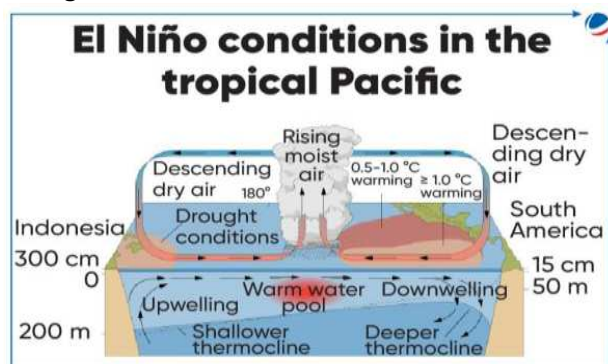
5.7.14. HIMALAYAS' VULNERABILITY TO LANDSLIDES

- An **under construction Silkyara-Barkot tunnel** in Uttarakhand's **Uttarkashi** **collapsed** due to a landslide.
 - **Silkyara-Barkot tunnel** will connect **Yamunotri** on the south end to **Dharasu** on the north end.
 - It is part of **Char-Dham** all-weather road project.
 - Tunnel is being built in an area comprising **limestone** and **other soft rocks** that have a tendency to collapse.
- **Why are Himalayas more prone to landslides?**
 - **Natural reasons**
 - ✓ Earthquakes resulting from tectonic activity can trigger landslides
 - ✓ Heavy rainfall can saturate the soil and weaken rock formations.
 - ✓ Climate change-induced warming can lead to permafrost thawing.
 - **Anthropogenic**
 - ✓ Construction of dams, roads, and other significant infrastructure changes the natural stability of slopes.
 - ✓ Deforestation, Irrigation, Mining activities etc.

Comparison between Himalayas and Alps		
Feature	Himalayas	Alps
Age	Relatively young (formed 40–50 million years ago)	Older (formed around 65 million years ago)
Formation	Result of the collision between Indian and Eurasian plates	Result of the collision between African and Eurasian plates
Tectonic Activity	Ongoing tectonic activity, seismic region	Tectonically active, but less seismic activity
Geological Features	Young, rugged terrain with deep valleys and high peaks	Older, more rounded mountains with U-shaped valleys

5.7.15. HISTORIC FLOODING SWAMPS SOMALIA

- **Once in a century flooding** swamped Somalia **after historic drought**, according to UN Office for the Coordination of Humanitarian Affairs (UNOCHA).
- The heavy **seasonal rainfall** has been **worsened** due to the combined impact of two climate phenomenons, **El Niño** and the **Indian Ocean Dipole (IOD)**, as per UNOCHA.
 - Across the Horn of Africa, **El Niño** and a **positive IOD** are associated with **above-normal rains and flooding**.
- **El Niño**: It is a **climate pattern associated** with the warming of the ocean surface temperatures in the central and eastern tropical Pacific Ocean,
 - Generally, **El Niño occurs** on average **every 2-7 years**.
 - It can lead to a **weakening of the monsoon circulation over the Indian subcontinent**.
- **IOD**: Also known as **Indian Nino**, IOD refers to the **difference in sea surface temperature** between the **eastern and western sides of the Indian Ocean**. It has **3 phases**:
 - **Positive**: The **western side is warmer** than the eastern side.
 - **Negative**: **Cooler western side and warmer eastern side**.
 - **Neutral**: Temperatures are **close to normal** across the Indian Ocean.
- **About UNOCHA**: It is responsible for bringing together humanitarian actors to ensure a **coherent response to emergencies**.



5.7.16. CYCLONE MIDHILI

- According to recent IMD update, the cyclone storm Midhili, after crossing Bangladesh coast, weakened into a deep depression and later into a depression.
- **Cyclonic storm** is cyclonic disturbance in which the maximum average surface wind speed is in range of **34 to 47 knots (62 to 88 kmph)**.
- In **deep depression**, maximum sustained wind speed lies in the range **28 to 33 knots (50 to 61 kmph)**.
- **Depression** is a cyclonic disturbance in which maximum sustained surface wind speed is between **17 and 33 knots (31 and 61 kmph)**.

5.7.17. SEISMIC/ EARTHQUAKE SWARMS

- **Iceland** has been hit by more than **5500 small earthquakes**.
- **About Seismic swarms**
 - These are **sequences of many earthquakes** that occur in a **relatively short period without a specific main shock**.
 - It **can last weeks** and produce many **thousands of earthquakes** within a relatively **small volume**.
 - These are observed in **volcanic environments, hydrothermal systems, and other active geothermal areas**.
 - ✓ **Iceland is Europe's largest and most active volcanic region** due to its presence on the Mid-Atlantic Ridge.



SMART QUIZ

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6. SOCIAL ISSUES

6.1. TRIBAL WELFARE

Why in the news?

Recently, the Union government launched **PM JANMAN (PM- Janjati Adivasi Nyaya Maha Abhiyan)** on Janjatiya Gaurav Divas (Tribal Pride Day)

More on the news

- **Janjatiya Gaurav Divas** is celebrated on **15th November (since 2021)** to recognize the efforts of the tribal freedom fighters.
 - The date is the **birth anniversary of Sri Birsa Munda** who is revered as Bhagwan by tribal communities across the country.
- The occasion also coincided with the launch of the nationwide **‘Viksit Bharat Sankalp Yatra’**.
 - The **focus of the Yatra** will be on reaching out to people, creating awareness, and providing benefits of welfare schemes.
 - The Yatra will start from districts with significant tribal populations initially and by 25th January 2024 and will **cover all districts across the country**.

About PM JANMAN

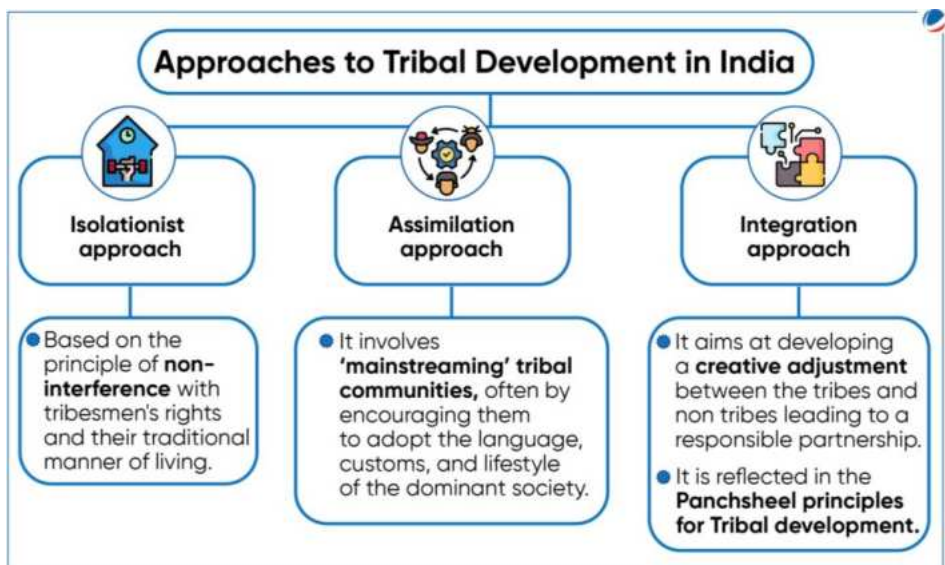
- **Pradhan Mantri PVTG Development Mission** was announced in the **Union Budget 2023-24**.
- The mission comprises of **11 critical interventions** through 9 ministries with an estimated outlay of ₹24104 crore for **3 years**.
- The mission aims to **saturate PVTG households and habitations with basic facilities** such as safe housing, clean drinking water and sanitation, improved access to education, health, and nutrition, etc.
 - In addition, saturation will be ensured for Sickle Cell Disease Elimination, TB Elimination, 100% immunization, PM Surakshit Matritva Yojana, PM Matru Vandana Yojana, PM Poshan, etc.

About Birsa Munda (1875-1900)

- **Early life:** Birsa Munda also known as **Dharti Aaba**, was born in **Munda tribe** at **Ulihatu**, Khunti district of **Chotanagpur Plateau region (Jharkhand)**.
- **Social reforms:** He stressed on the importance of **prayer, staying away from alcohol**, having faith in God and observing a code of conduct.
 - **Based on these, he started the faith of Birsait.**
- **Ulgulan movement:** Birsa started a movement called **'Ulgulan', or 'The Great Tumult'** against the exploitation and discrimination against tribals.
 - **Led to Chotanagpur Tenancy Act being passed in 1908** which restricted the passing on of land from the tribal people to non-tribals.

Particularly Vulnerable Tribal Groups (PVTGs)

- These are **centrally recognized special category** from among the Scheduled Tribes (STs).
- First recognized in **1973** as **Primitive Tribal Groups (PTGs)** based on recommendations of the **U N Dhebar Commission (1961)**.
- In **2006**, the Government of India **renamed the PTGs as PVTGs**.
- **Criteria for identifying PVTGs:**
 - Pre-agricultural level of technology
 - Low level of literacy
 - Economic backwardness
 - A declining or stagnant population
- Currently, there are **75 PVTGs** spread over **18 states** and the Union Territory of **Andaman and Nicobar Islands**.
- **Odisha** houses highest number (13) of PVTGs in India.



Challenges faced by Tribal people

- **Erosion of Identity:** Traditional institutions and laws of tribals come into conflict with modern institutions raising apprehensions among the tribals about preserving their identity.

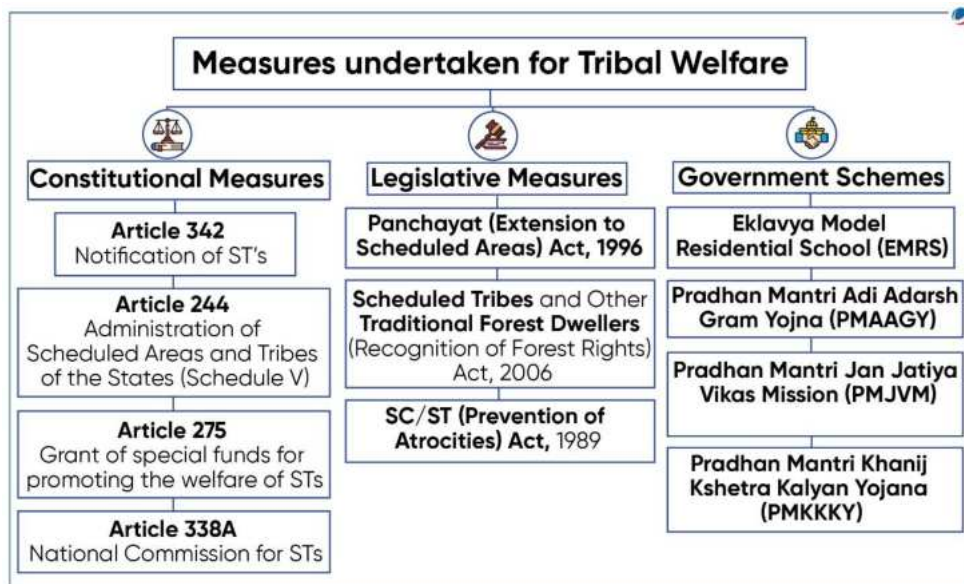
- e.g., Extinction of tribal dialects and languages.
- **Displacement and Rehabilitation:** Displacement of tribals from their native lands due to development, disasters, conflict, etc.
- **Education:** Wide gap in terms of the percentage of literacy between tribals and the general population.
 - **The literacy rate among STs is just 59%** which is 73% among the general population. (Census 2011)
 - The main causes of low levels of literacy among tribals include poverty, inadequate infrastructure, medium of instruction other than their mother tongue, etc.
- **Health: The tribal population suffers a triple burden of disease** - high rates of **malnutrition and communicable diseases**, a rise in **non-communicable diseases** (cancer, diabetes, etc.) due to rapid urbanization, and **mental illness and addiction**.
- **Debt-Bondage:** Debt-bondage among tribals is a significant problem, often leading to situations of bonded labour.
 - Causes of debt bondage include extreme poverty, loopholes in money-lending laws, lack of employment opportunities for tribals, weak public delivery system, etc.
- **Climate Change Impact:** Tribal communities often live in close connection with nature and are vulnerable to the impacts of climate change.
- **Marginalization and Discrimination:** Tribal groups encounter social marginalization, restricting access to education, healthcare, and employment opportunities.

Panchsheel Principles for Tribal development

- **People should develop along the lines of their own genius**, and the imposition of alien values should be avoided.
- **Tribal rights to land and forest should be respected.**
- **Teams of tribals should be trained in the work of administration and development.**
- **Should not over administer these areas** or overwhelm them with a multiplicity of schemes.
- **Judge results**, not by statistics, but **by the quality of human character** that is evolved.

Way Forward

- **Identification of PVTGs and assessment of their vulnerabilities:** Specially designed census to assess and enumerate health, education, and nutrition of tribals.
 - **Objective assessment of the degree of indebtedness** of tribal households and design strategies to redeem their debts and make them debt-free.
- **Recognition of rights and development approaches:** Adopt a **rights-based approach** for the protection and promotion of tribal rights and empowerment of rights-holders.
 - Strict controls need to be imposed to ensure development on tribal land and habitat should not take place without their **free, prior, and informed consent**.
- **Institutions of governance and service delivery:** Institutionalize participatory process within existing structures and programmes, placing PVTGs at high priority.
 - **Strengthen and revitalize the traditional institutions** and governance systems rather than superimposing one-size-fits-all institutional structures.
- **Nutrition, education, and health:** Develop effective, **preventive and curative healthcare systems** taking into account **ecological and cultural aspects**.
 - Development of **education curriculum** which should be **locally relevant, culturally sensitive** and in **vernacular languages**.



Scan the QR code to know more about **Tribals in India**.

Weekly Focus #77: Tribals in India- Charting a Development Path



6.2. SOCIAL ISOLATION AND LONELINESS

Why in the news?

World Health Organization (WHO) has declared loneliness a pressing global health threat and has initiated an international commission focused on tackling loneliness.

More on the news

- The **WHO Commission on Social Connection (2024–2026)** aims to see the issue **recognised and resourced as a global public health priority**.
- The new WHO Commission will-
 - Define a global agenda on social connection.**
 - Raising awareness and building collaborations** that will drive evidence-based solutions for countries, communities, and individuals.

Factors Responsible for Social Isolation and Loneliness

- Migration and related issues:** People relocated to different places may feel isolated due to language barriers, financial struggles, and difficulties in adapting to a new culture.
- Personality Types:** Individuals with higher levels of conscientiousness and neuroticism are more likely to feel lonely.
- Technological and Social Media Impact:** Issues such as internet or social media addiction can reduce face-to-face interactions, contributing to a sense of isolation.
- Time Constraints from Work:** Extended working hours and limited leisure time may cause individuals to prefer solitude, leading to isolation.
- Professional failures:** Comparison and continuous evaluation, subsequent failure results in low self-esteem which leads to social isolation.
- Challenges Faced by Older Adults:** Factors like retirement, loss of touch with colleagues, and reduced financial independence can result in feelings of disconnection.
 - The **empty nest syndrome**, where children leave home for education or careers, can intensify loneliness among older parents.
- Social Exclusion:** Experiences of exclusion based on gender, race, or other factors can lead to social isolation and loneliness.

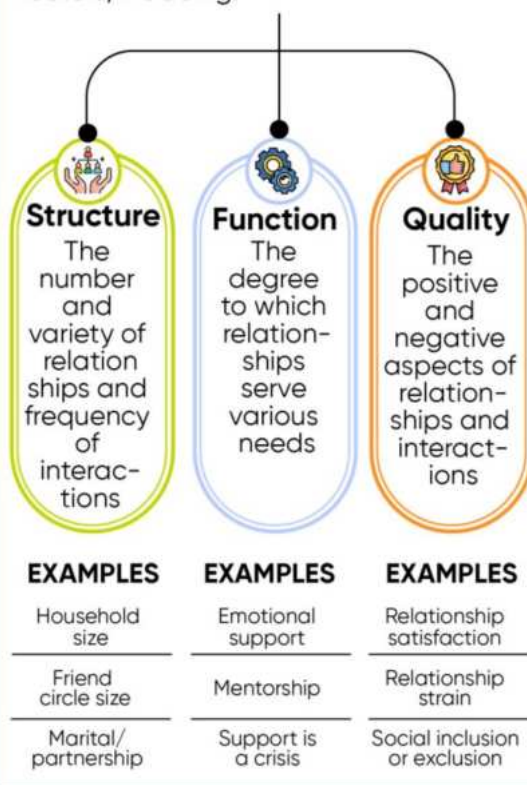
Impact of social isolation and loneliness

- Health Risks:** Social isolation was associated with about a **50% increased risk of dementia**, **29% increased risk of heart disease** and **32% increased risk of stroke**.

Social Connection

Social connection can encompass the interactions, relationships, roles, and sense of connection individuals, communities, or society may experience.

The extent to which an individual is socially connected depend on multiple factors, including:



Know the term

- Social isolation** is the lack of relationships with others and little to no social support or contact
- Loneliness** is feeling of being alone or disconnected from others. It reflects the difference between a person's actual and desired level of connection.
 - This means that even a person with a lot of friends can feel lonely.

- **Adoption of unhealthy habits:** Substance abuse, disrupted cycle and poor quality of sleep, among others, lead to daytime fatigue, irritability, lack of focus and loss of productivity.
- **Increased risk of premature deaths:** Social isolation significantly **increases the risk of premature death** from all causes, which may rival those of **smoking, obesity, and physical inactivity**.
- **Poor Economic Outcome:** Experiencing a sense of isolation and lack of support in the workplace can contribute to diminished job satisfaction and performance.
 - Loneliness costs the US economy an estimated \$406 billion a year.
- **Poor education outcome:** Young people experiencing loneliness in high school are more likely to drop out of university.

Way Forward to Address Social Isolation and Loneliness

- **Community level**
 - Establish an environment **designed to guarantee accessibility to secure, cost-effective physical infrastructure**, encompassing parks and community centers.
 - **Encourage involvement in social causes** and fulfilling activities, such as volunteering at old age homes, orphanages, or NGOs.
 - **Establish non-familial intergenerational support** programs to reduce loneliness and exclusion for both older people and children and young people.
- **Individual level**
 - Embrace **personalized programs** like mindfulness and meditation to reprogram the subconscious mind.
 - **Foster meaningful relationships** and build a support system to combat loneliness.
- **Societal level**
 - **Launch educational campaigns** to increase awareness of loneliness and its health implications.
 - **Advocate for government policies** that empower schools, workplaces, and community-based organizations to prioritize addressing social isolation and loneliness.
 - **Secure public and private funding** to support the development, implementation, and evaluation of loneliness programs.



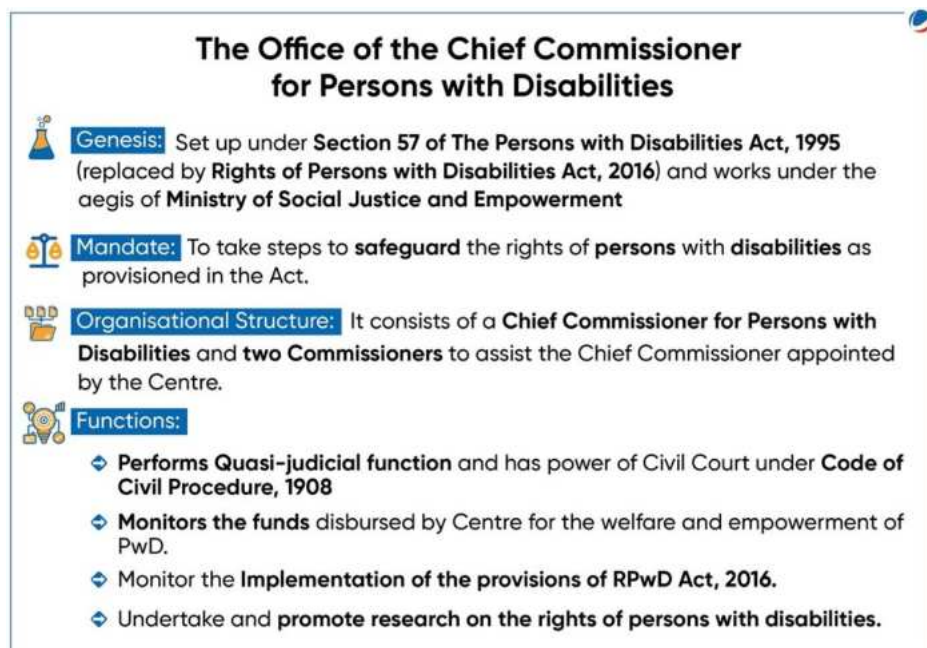
6.3. ACCESSIBILITY IN URBAN INFRASTRUCTURE

Why in the news?

The Court of **Chief Commissioner of Persons with Disabilities** has delivered judgments that are significantly important in reshaping the attitudes towards Persons with Disabilities (PwD).

More about the news

- The Court mandated government offices, operating from **inaccessible premises to relocate their services to the ground floor** or another accessible location within the same facility.
- In a separate judgement, the Court emphasized that all airlines operating in the country to implement the provisions of the **Rights of Persons with Disabilities (RPwD) Act 2016** to its true spirit.



Need for Accessible Infrastructure

- **Fulfilment of Legal Right: Right to accessibility** is ensured as a **legal right to the PwDs** under the **RPwD Act 2016**
 - **Nearly 2.21% of the population** have disability in one form or the other as per the last census report (2011)
 - **To impart Right to education** as three-fourths of the children with disabilities at the age of five years and one-fourth between 5-19 years do not go to any educational institution.
- **Livelihood opportunities: To provide livelihood opportunities** and avenues for obtaining skills to those persons with disability in need.
- **Differing Needs:** There are **different accessibility Needs for PwDs** ranging from physical, sensory and mental capabilities and the **accessibility design needs various elements, features and services**.
 - Eg. While a ramp is necessary for a person in wheel chair, tactile paving is necessary for visually impaired.
- **Economic Aspects:** As inclusion of the PwDs into the stream of employment could result in **an increase of 3-7% in GDP** as per ILO.
 - Estimates suggest that **India's inattention to a disability-inclusive economy** could result in **lost opportunity of over \$ 210 Billion**.

Challenges in establishing Accessible infrastructure

- **Missed targets** of Accessible India campaign like
 - **Only 8.73% of the buses were made accessible till 2022** as to the target of making 25% buses accessible by 2018
 - **Only 48.5% of the government buildings were made accessible till 2022**, as to a target of making 50% of the government buildings accessible by 2018.
- **Funds: Allocation of funds for PwDs is meagre** for improving the accessibility aspect of all public infrastructures.
 - **Ministry of Social Justice and Empowerment (MSJE) was allocated only 1,225 crore** (0.027% of the total budget for 2023-24).
- **Dispute Redressal: Slow pace of issue redressal** against the complaints raised regarding the accessibility issues
- **Awareness: Lack of awareness among the PwDs** that claiming for the accessibility is their right as per the provisions of the **RPwD Act, 2016** and not a welfare measure.

Way Forward

- **Introducing accessibility professionals** along with the empaneled professionals maintained by municipal authorities and codify the same in **model building bye-laws** and the **National Building Code**.
- **Set up an accessibility committee by the Parliament**, for delivering recommendations on making every aspect of the Parliamentary process more disabled-friendly.
- **Incorporating accessibility criteria** in all **central and state level procurement laws and policies** in public procurement of physical, digital and transport infrastructure.
- **Ensuring that the accessibility targets are met** and allocate the required funds mandated to do the same.
- **By not treating accessibility merely a physical attribute** of built environment but also to create sensory, cognitive and multi-faceted impact, as per the need of all PwDs accessing them.

Government initiatives for making infrastructures accessible

- **Accessible India Campaign (Sugamya Bharat Abhiyan)** aims to make a barrier-free and conducive environment for PwDs all over the country.
 - **It has three important verticals**– the Build Environment, the transportation sector and the ICT ecosystem.
- **Harmonised Guidelines and Space Standards** for Barrier Free Built Environment for Persons with Disabilities and Elderly Persons, **issued by the Ministry of Housing and Urban Affairs in 2017**.
- **Scheme for Implementation of Rights of Persons with Disabilities Act (SIPDA), 2016** is a Central Sector Scheme, which provides financial assistance in making existing Government buildings accessible to PwDs
- **Sugamya Bharat app** was launched by the the **Department of Empowerment for Persons with Disabilities** to enable persons with disabilities to report any building that is inaccessible.
- **ICT Ecosystem (Websites)** –Nearly 603 Central and State/UT government websites have been made accessible for the visually impaired through assistive technologies like screen readers.
 - **Bureau of Indian Standards** has set **two standards for digital offerings** in “websites, applications, information and communication technology-based public facilities and services meant for everyday use for PwDs.

6.4. DRAFT NATIONAL MENSTRUAL HYGIENE POLICY, 2023

Why in the news?

Recently, the Ministry of Health and Family Welfare released the Draft National Menstrual Hygiene Policy, 2023.

About Menstrual Hygiene Policy

- Policy **recognizes menstruation as a natural bodily process for all who menstruate** including girls and women of reproductive age and addresses the long-standing challenges associated with menstruation in our country.
 - Historically, this biological phenomenon has been overlooked, resulting in a negative impact on girls, women, families, and the environment.
- The policy aims that all women, girls and persons who menstruate can experience menstruation in a manner that is safe, healthy, and free from stigma.
- By **adopting a life cycle approach**, the policy ensures comprehensive support through the entire menstrual journey, recognizing the unique needs of individuals from menarche to menopause.
 - Menarche refers to the first occurrence of menstruation and Menopause marks the time when menstrual cycles end.
- The policy places a specific focus on **prioritizing underserved and vulnerable populations**, ensuring equitable access to menstrual hygiene resources.

Policy strategy

- **Ensuring access to affordable and safe menstrual hygiene products**
 - Develop a **mechanism to ensure affordable products** are available to all.
 - Initiatives for **free or subsidized menstrual hygiene products**.
 - **Targeted outreach programs** in rural areas and developed supply chains and distribution networks.
- **Promote Quality Standards and Regulatory Framework**
 - Develop and implement **comprehensive quality standards** for different types of menstrual hygiene products.
 - **Clear and accurate product labelling and a strong regulatory framework** to monitor compliance with quality standards.
- **Availability of Clean and Dignified Menstrual Hygiene Facilities** in homes, educational institutions, and public spaces.
 - Develop and implement systems to ensure that **menstrual waste** is managed in an **environmentally friendly manner**.
- **Promotion of education and awareness of menstrual hygiene**
- **Collaboration with the Non-Government Sector/Engagement with the private sector** for research and development, bringing innovation, developing distribution channels, Leveraging corporate social responsibility, etc.
- **Integrate principles of menstrual hygiene into existing health, education, sanitation, gender, and environment programs.**
- **Foster research and innovation in menstrual hygiene management.**

Need for a Menstrual Hygiene Policy

- **Health and well-being of women:** Access to safe and hygienic menstrual products, can **prevent reproductive tract infections** and other health issues.
- **Access to education:** A **2014 report by an NGO** said over 23 million girls drop out of school every year due to a lack of adequate menstrual hygiene facilities, this can be curtailed.
- **Gender equality:** Promoting menstrual health and hygiene is an important means for safeguarding women's dignity, privacy, bodily integrity, and, consequently, their self-efficacy.

Data Bank

- **78% of women aged 15-24 years** use hygienic menstrual protection.
- **73% of rural women while 90% of urban women** use a hygienic method of menstrual protection.
- Bihar (**59.7%**), has the **lowest percentage of girls using a hygienic method of menstrual protection.**

Do you know?

- Spain is the first European country to grant paid menstrual leave to workers, among a host of other sexual health rights.

Know the term

- **Period poverty:** It refers to the increased **economic vulnerability** women and girls face due the financial burden **posed by menstrual supplies**.
- These include not **only menstrual pads and tampons**, but also **related costs** such as **pain medication**, etc.

- **Participation in work:** Providing basic services at the work environment e.g. **access to sanitary products, and menstrual leave** will promote the participation of women in work.
- **Environment:** Ensuring women and girls have access to sustainable and quality products and improving the management of the disposal of menstrual products, can make a big difference to the environment.
- **Ensuring Dignity and Respect:** Discrimination against menstruating women is widespread in India e.g. **denied entry into temples and shrines and even kept out of kitchens**, the policy can bring awareness about menstruation.

Challenges to Menstrual Hygiene

- **Social stigma and taboos:** A study highlighted that menstruating women in remote villages of the Himalayas still practice segregation due to the belief that menstrual blood is impure.
- **Poverty:** Poor girls in rural and remote areas cannot afford Menstrual hygiene products.
- **Limited waste management:** Due to a **lack of extended producer responsibility** and proper guidelines, proper waste management of menstrual products faces complexities.
 - Most sanitary pads, laden with plastic, cannot biodegrade naturally.
- **work environment issues:** Lack of **access to washrooms, clean water for bathing** and Problems in access to **cost-effective menstrual hygiene products** and their safe disposal.
 - **Only two states**, Kerala and Bihar, currently have **menstrual leave policies for women**.

Current programs for Menstrual hygiene management

- **Menstrual Hygiene Scheme (2011)** focussed on the distribution of low-cost sanitary napkins in communities through ASHAs.
- **Swachha Bharat Mission (2014)** -The Ministry of Jal Shakti included menstrual hygiene management in the Swachh Bharat Mission -Gramin initiatives in 2014.
- **National Guidelines for Menstrual Hygiene Management (2015)** – By the Ministry of Education, these National guidelines provided a valuable blueprint for all the States to intensify work on the issue of menstrual hygiene management.
- **Schemes by various states**
 - **“Asmita Yojana” in Maharashtra, “Udaan” in Rajasthan, and “Khushi” in Odisha**, schemes have provisions for **distributing subsidized or free sanitary napkins to adolescent girls**.

Conclusion

Although there have been recent initiatives by central and state governments to improve access to hygienic menstrual products, many of these programs are limited to certain areas. Therefore, it is crucial to expand these initiatives to reach as many underserved individuals as possible. Draft Menstrual hygiene policy has the potential to contribute significantly to the creation of a society where menstruation is understood, accepted, and managed without barriers or discrimination.

6.5. SURROGACY IN INDIA

Why in the news?

Recently, the Supreme Court in the Arun Muthuvel vs. Union of India case (2023) protected women’s right to parenthood and struck down the 2023 amendment to Surrogacy (Regulation) Rules, 2022.

More on the news

- In March 2023, the government notified amendments which **banned the use of donor gametes**.
 - The amendment mandated that **both male and female gametes** (sperm and egg respectively) must **come from intending couples** for the process of surrogacy.
- In this case, the woman suffering from **Mayer-Rokitansky-Kuster-Hauser (MRKH) syndrome** had challenged the 2023 amendment as the petitioner woman has absent ovaries and uterus; hence she cannot donate her eggs for surrogacy.

Know the term

Mayer-Rokitansky-Kuster-Hauser (MRKH)

- MRKH is a rare congenital disorder that **affects female reproductive system**.
- MRKH syndrome **causes absolute uterine factor infertility** and the only way for a person suffering from such a condition can attain biological motherhood is through gestational surrogacy.

about Surrogacy and its types

- Surrogacy is a practice whereby **one woman bears and gives birth to a child for an intending couple**.

- **Intending couple** means a couple who have a **medical indication necessitating gestational surrogacy** and who intend to become parents through surrogacy.
- **Gestational surrogacy** is a practice whereby a **surrogate mother carries a child for the intending couple** through the implantation of an embryo in her womb and the **child is not genetically related to the surrogate mother**.
- **Type of surrogacy**
 - **Altruistic surrogacy**: It involves **no monetary compensation** to the surrogate mother **other than the medical expenses and insurance coverage** during the pregnancy.
 - **Commercial surrogacy**: It includes surrogacy, or its related procedures undertaken for a monetary benefit or reward (in cash or kind) exceeding the basic medical expenses and insurance coverage.
- Government **banned surrogacy for foreign nationals in 2015**.



Supreme Court observations in Arun Muthuvel V. Union of India Case

- Supreme Court **stayed the operation of Rule 7 of the Surrogacy (Regulation) Act, 2021**, to allow a woman suffering from MRKH Syndrome to undergo surrogacy using a donor egg.
 - **Rule 7 of the Surrogacy Act banned the use of donor eggs** for the procedure.
- Supreme Court said that the **2023 amendment cannot contradict Rule 14(a) of Surrogacy Regulation Rules, 2022**, which specifically **recognises the absence of a uterus or any allied condition** as a medical indication **necessitating gestational surrogacy**.
 - Centre said that the **use of donor eggs cannot be done**, as the process of **surrogacy cannot be availed** under the law unless the child was **“genetically related”** to the intending couple.
 - In this regard, SC held that the expression **‘genetically related’** to the intending couple has to be **read as being related to the husband when Rule 14(a) applies**.
- The Court also noted that the **law permitting gestational surrogacy was “woman-centric”** and the decision to have a surrogate child was entirely based on the **woman’s inability to become a mother**.
 - However, the Court was of the view that before deciding the matter, it **must obtain appropriate medical opinion** and thus **directed the concerned District Medical Board to certify whether the woman was in a position to produce eggs or not**, due to MRKH syndrome.

Surrogacy Laws in India

- **Surrogacy (Regulation) Act, 2021 (Surrogacy Act 2021)**
 - **Only altruistic surrogacy is allowed** and penalises commercial surrogacy.
 - Establish **National Assisted Reproductive Technology and Surrogacy Board (NARTSB)** to review and monitor the implementation of the Act, supervise functioning of State ARTSB (SARTSB), etc.
 - **Eligibility criteria for surrogate mother**:
 - ✓ a married woman having a **child of her own**, and **25 to 35 years old**;
 - ✓ a **surrogate only once** in her lifetime;
 - ✓ **possess a certificate of medical and psychological fitness** for surrogacy.
 - **Eligibility criteria for couples**:
 - ✓ if they have been **married for five years**, **wife** is aged between **25-50 years** and **husband** is between **26-55 years**.
 - ✓ Couple must **not have any living child** (biological, adopted or surrogate).
 - ✓ Should have **‘essential’ certificate** if suffering from proven infertility of either partner **certified by a District Medical Board**, and an **order of parentage and custody of the surrogate child**, passed by a **Magistrate’s court**.
 - ✓ **Insurance coverage for 16 months for the surrogate mother**, covering any postpartum complications.
 - **Abortion of surrogate child** requires **written consent of surrogate mother and authorisation** of appropriate authority.

✓ This authorisation must be **compliant with Medical Termination of Pregnancy Act, 1971.**

- **Assisted Reproductive Technology (Regulation) Act, 2021 (ART Act)**
 - It aims to **regulate and supervise ART clinics and banks**, prevent its misuse and ensure safe and ethical practice of ART services for addressing the issues of reproductive health.
 - It brings into its ambit the **treatment of surrogacy and hence ensures protection of the rights of surrogate mothers.**
- **Other key provisions of Surrogacy (Regulation) Rules, 2022:**
 - **Number of attempts** of any surrogacy procedure on surrogate mother shall **not be more than 3 times.**
 - **A surrogate mother may be allowed for abortion during surrogacy** in accordance with Medical Termination of Pregnancy Act, 1971.
 - **Intending woman or couple shall purchase a general health insurance coverage in favour of surrogate mother** for a period of 36 months from an insurance company or an agent recognized by Insurance Regulatory and Development Authority (IRDAI).

Challenges associated with Surrogacy Regulation Ecosystem

- **Lack of re-course:** Surrogate mother and the intending couple are required to obtain certificates of eligibility and essentiality upon fulfilling various conditions for the surrogacy process. However, **no process has been specified to review or appeal** in case the surrogacy applications are rejected.
- **Conflicting laws:** Surrogacy (Regulation) Act 2021 **prohibits the storage of embryos and gametes** for the purpose of surrogacy in contrast to **ICMR National Guidelines for Accreditation, Supervision and Regulation of ART Clinics in India (2005)** which **allow storage for five years.**
- **Ambiguity:** Surrogate mother must be from the intending couple's close relatives. However, there is a **lack of clarity as to who constitutes as close relatives.**
- **Right to Privacy:** In India, surrogacy is still seen as an **unethical and unnatural form of childbirth.** There is a **lack of standard procedure for ensuring the privacy of the intending couple and surrogate** which might lead to embarrassment.
- **Lack of clarity in infertility definition:** Surrogacy (Regulation) Act 2021 defines infertility as an inability to conceive after five years of unprotected coitus or other medical condition preventing a couple from conception.
 - However, the **definition does not cover cases such as inability to carry a child for 9 months, multiple fibroids in the uterus etc.** in which a couple is unable to bear a child.

Know the term

Antepartum, intrapartum and postpartum care:

- **Antepartum** – Care provided during pregnancy.
- **Intrapartum** – Care provided during labour and delivery.
- **Postpartum** – Care provided after childbirth (generally up to 6 weeks).

Way forward

- **Navigating Social stigma:** Given the stigma surrounding infertility, additional efforts can be taken to ensure the privacy of associated parties.
- **Awareness:** To eliminate the exploitation of surrogate mothers they **need to be made aware of their rights and the associated risks** to gain their informed consent.
 - For example, surrogates should be made aware of the rare intrapartum and postpartum complications by the delivering physician and hospital.
- **Clarity:** There is a need to **clearly define terms such as close relatives, infertility etc.** Also, the definition of infertility should be expanded to take into account the medical factors, and diseases of the intended parents.
- **Grievance Redressal:** A redressal mechanism should be created highlighting the process of review or appeal in case the surrogacy application is rejected.

6.6. NEWS IN SHORTS

6.6.1. JAL DIWALI

- Ministry of Housing and Urban Affairs (MoHUA) launched **Jal Diwali - "Women for Water, Water for Women Campaign"**.
- It was launched **under Atal Mission for Rejuvenation and Urban Transformation (AMRUT)** in partnership with **National Urban Livelihood Mission (NULM).**
 - Phase I shall witness participation from **all States/ UTs, except for Chhattisgarh, Mizoram, Madhya Pradesh, Rajasthan, and Telangana.**
- Campaign aims to provide a platform for **inclusion of women in water governance** by-
 - **Providing knowledge about water treatment processes** through visits to Water Treatment Plants.

- Providing **insight into water quality testing protocols** and ensures quality water delivery to citizens.
- **Instilling a sense of ownership and belonging** among women towards water infrastructure.
- **Role of women in water governance**
 - Responsible for **collecting and managing water needs for domestic purposes** like cooking food, drinking etc.
 - **Ensure hygiene and good sanitary conditions** to prevent water borne diseases like cholera.
 - **Utilize their traditional knowledge about water resource** w.r.t. quality, reliability and acceptable storage methods.
- AMRUT was launched by MoHUA in **2015** in **500 cities and towns** for **developing basic infrastructure in water supply sectors**; storm water drainage; green spaces and parks etc.
 - AMRUT 2.0 (2021-22 to 2025-26) **provides universal coverage of water supply through functional taps** in all households.

Deendayal Antyodaya Yojana- National Urban Livelihood Mission (DAY- NULM)

- It is a **centrally sponsored scheme** launched by MoHUA in 2013.
- It aims to **reduce poverty and vulnerability of urban poor households** by enabling them to access **gainful self-employment and skilled wage employment opportunities**.

6.6.2. GENDER DISCRIMINATION IN JUDICIAL PROCESSES

- A pioneering study by a London School of Economics professor found **discrimination against women** at every stage of **police and judicial processes**.
 - As per the study **from filing FIRs to convictions**, women's cases tend to **lag longer than men in India**.
- **Key highlights**
 - **Reduced Burdens for Men:** Men who file cases on behalf of a female face **fewer "burdens or exclusions"** than a woman complainant.
 - **Extended wait for VaW Cases:** Registration of FIR for Violence against women (VaW) cases are delayed 2 hours longer than other complaint.
 - **Conviction Disparities:** Women's complaints are less likely to proceed from police to the judiciary.
 - ✓ Also, **conviction rate is 5% for female complainants** compared to **17.9% for male complainants**.
 - **Misuse notion:** Conviction disparities are due to notion that women often **misuse protective legislation** Domestic Violence Act or rape laws,

- **Socio-cultural hindrance:** Women's complaints, like dowry issues, can be seen as a **threat to societal norms and marriage**.
 - ✓ Gender disparities in **education and workforce participation** can affect access to justice.
- **Single-stage policy intervention:** Policy like creating **more police stations**, fast-track courts, etc. may not address these disparities.
- **Recommendations:** **Charting multi-stage discrimination** as it helps identify how disparities accumulate and where problems occur.



6.6.3. TRANSGENDER IN SPORTS

- **International Cricket Council (ICC)** banned **transgender players** from international women's cricket.
- The ICC has **barred cricketers who experienced male puberty** from **international women's games**, regardless of surgery or **gender reassignment treatment**.
 - ICC is the global governing body for cricket, headquartered in Dubai, UAE.
- **Gender reassignment surgery**, sometimes called **sex reassignment surgery**, is performed to transition individuals with **gender dysphoria** to their desired gender.
- ICC's new policy is based on the **following principles** (in order of priority) i.e.,
 - protection of the integrity of the women's game, safety, fairness, and inclusion.

- **Debate around allowing transgenders in sports:**
 - It centers around the **balance of inclusion**, sporting fairness, and safety in women's sports.
 - **Physiological differences established during puberty** can create significant performance advantages
- **Rules governing transgender persons** in sports vary by organization, For example;
 - As per **World Athletics (WA)**, **Differences in sex development (DSD)** athletes must keep their **testosterone be 2.5 nmol/L for 24 months** to participate in the female category across events.
 - ✓ **DSD is a condition** when an **individual's physical sex traits** don't match typical male or female development.
 - ✓ **Testosterone boosts athletic performance** by increasing muscle mass, strength, and hemoglobin levels.
 - **World governing bodies for cycling (UCI) and swimming (FINA)** and World Rugby barred trans women from competing in women's events.
 - **International Olympic Committee**, placing responsibility on individual federations to determine eligibility criteria in their sport for transgender people.

6.6.4. HEALTHY AGEING

- WHO and UN partners have launched the **first UN Decade of Healthy Ageing progress report** which charts efforts to improve the lives of older people since 2020.
- **The United Nations Decade of Healthy Ageing (2021–2030)** is a global collaboration to improve the lives of older people, their families, and the communities in which they live.
 - The Decade builds on global commitments, including **WHO's Global strategy and action plan on ageing and health (2016–2030)** and the **Madrid International Plan of Action on Ageing (2002)**



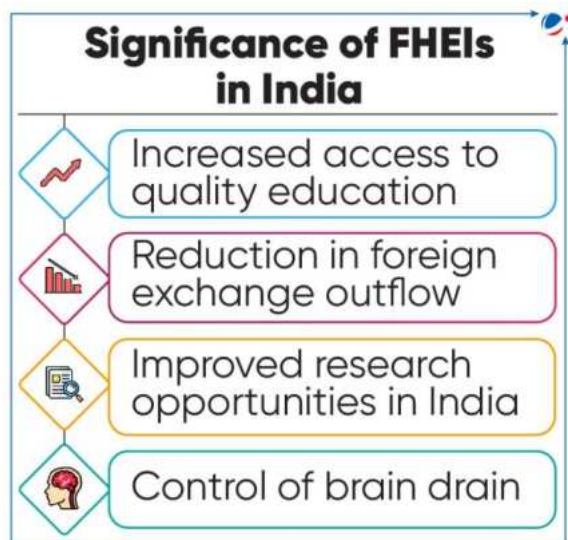
- **Key findings of the report**
 - Over **60% of countries** have mechanisms to promote and protect the rights of older people.
 - The percentage of countries with national programmes to support the activities of the **WHO Global Network for Age-friendly Cities and Communities** has increased.
 - **Resources for work towards healthy ageing remain limited**, and more commitment and investment are crucial.
 - **Concerted and accelerated action is needed to support healthy ageing in low- and middle-income countries**, where 80% of the world's older population will live by 2050.

For more details on Ageing Population in India, kindly refer to the Article 6.4 of October 2023 edition of the Monthly Current Affairs Magazine.

6.6.5. REGULATION OF FHEIS IN INDIA

- UGC (Setting up and Operation of Campuses of Foreign Higher Educational Institutions (FHEIs) in India) **Regulations, 2023 Notified.**
- **University Grants Commission (UGC)**'s regulation aims to **facilitate the entry of FHEIs into India**, in line with the recommendations of **National Education Policy (NEP) 2020.**
- **Key highlights of regulations:**
 - **Approval:** FHEIs require UGC's approval before establishment of Indian campuses, offer any programme, and discontinue any course or programme.
 - ✓ Not allowed to offer Programme which is contrary to the standards of higher education in India.
 - **Eligibility:** FHEIs **ranked within top 500 in global rankings** either in overall category or in subject-wise category or **possessing outstanding expertise** in a particular area.
 - **Qualifications:** Qualifications awarded and quality of education in Indian campuses shall be equivalent to those awarded in their home jurisdiction.
 - ✓ FHEIs **cannot offer programmes in online** or in open and distance learning modes.
 - **Autonomy:** Allowed to decide **admission process and criteria**, recruit faculty and staff, and decide a transparent and reasonable fee structure.
 - **Restrictions:** FHEIs' Operation shall not be contrary to sovereignty and integrity of India, security of State, friendly relations with foreign States, public order, decency, or morality.

- ✓ For receiving donations from foreign source, FHEIs require **prior permission of Central Government**.



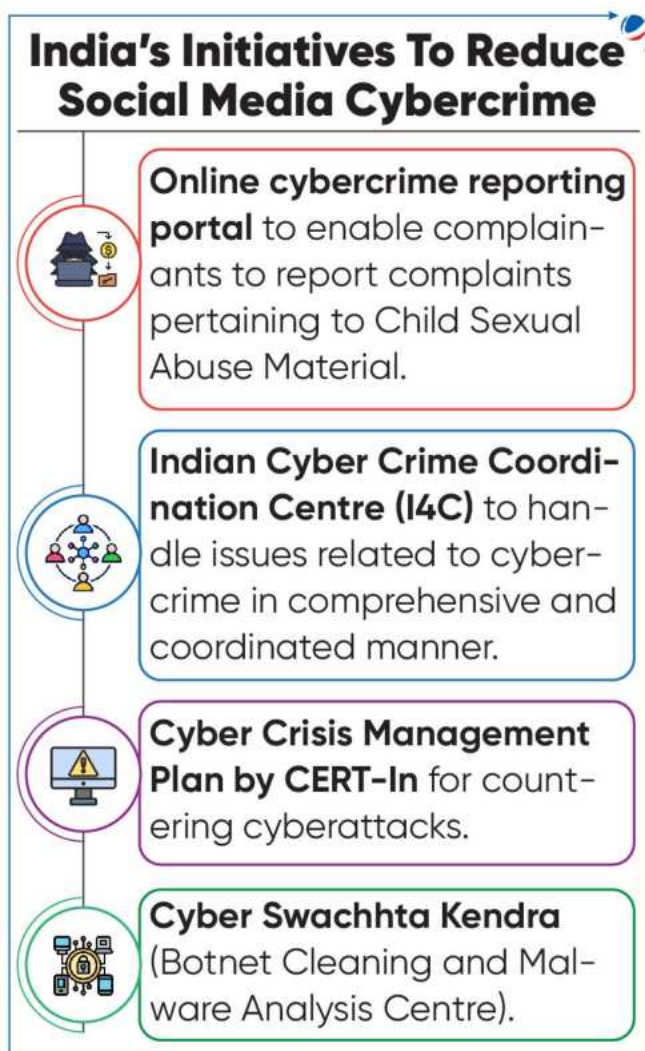
6.6.6. SATHEE

- **Ministry of Education (MoE)** asked States to encourage use of online coaching platform **SATHEE** (Self Assessment Test and Help for Entrance Exams).
- **About SATHEE**
 - It is an initiative by the **MoE** in association with **IIT-Kanpur**.
 - It is an **open learning and assessment platform** available to students at no cost.
 - It uses **Artificial Intelligence (AI)** to interact with students, and can be customised to each student's pace of learning.

6.6.7. SOCIAL MEDIA AND SOCIAL HARMONY

- **Nepal banned social media app TikTok** citing disruption to social harmony.
- Earlier, TikTok was **banned in India**, Australia, EU, USA, Belgium etc.
- **Social media** is a **collective term for websites and applications** like Instagram, WhatsApp, TikTok, Twitter that focus on **communication, content-sharing and collaboration**.
 - At the beginning of 2023, there were **398 million social media users in India**.
 - As per MeitY, India witnessed **13.91 Lakh cyber-security incidents in 2022**.
- **Social media cybercrime** are classified into
 - **Cybercrimes targeting social media users:** Privacy-violating crimes, account hijacking etc.

- **Cybercrimes facilitated by social media platforms:** Phishing, scams, fake profiles, cyber-harassment etc.
- **Cybercrimes advertised on social media platforms:** Advertising for stolen credit cards, video tutorials of unlawful acts, etc.
- **Reasons for Social Media's Vulnerability to Cybercrimes**
 - **Cybercriminals use internal information** for social engineering attacks like data theft, etc.
 - **Data Aggregation through quizzes** provides cybercriminals with information to achieve unauthorized access to respondents' accounts.
 - **Unsecured Portable Devices like mobiles** have risk of information being stolen from lost devices.
 - **Popularity and high usage.** On an average, **Indian spends 194 minutes daily** on social media platforms.
- **Measures to reduce Social Media Cyber-risks:** Know how to report, block, and filter content; Turn off geo-location; Use private Internet connection, etc.



6.6.8. SOCIAL MEDIA AND CONSUMER BEHAVIOUR

- A recent report titled “Meta GWI Beauty Report 2023” highlighted that Facebook, Instagram reels influenced 80% of Indians to purchase beauty products.
- **How Social Media influence consumer behavior?**
 - **Discovery of new products:** 47% of surveyed consumers discovered new products through social media reels.
 - **Shift in consumer preferences:** 15% increase in online purchases post-pandemic by beauty buyers which currently stands at 68%.
 - **Evaluation of alternatives:** Virtual try-outs through Augmented Reality and other related technologies.
 - **Buyer socialization:** Correspondence among buyers influences their psychological, full of feeling and conduct mentalities.
- **Electronic word of mouth:** Customer reviews help consumers in their purchasing decisions.
- **Associated Concerns:** Impulsive buying behavior, targeted advertisements, **increased debt** and financial stress, **environmental degradation** due to excessive consumerism, **violation of privacy** through consumer profiling, etc.
- **Way forward**
 - **Transparency:** Social Media platforms should provide clear information on content curation, moderation, and algorithms.
 - **Strengthen anti-trust rules:** For both platform providers and Social Media influencers.
 - **Disclosure of material interests by Social Media influencers:** In January 2023, Department of Consumer Affairs released endorsement guidelines for celebrities and Social Media influencers.



SMART QUIZ

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



Lakshya

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7. SCIENCE AND TECHNOLOGY

7.1. DEEPFAKES

Why in the news?

Recently, the Centre issued an advisory to **social media intermediaries** to identify **misinformation and deepfakes**.

About Deepfakes

- Deepfakes refers to a **video/image** that has been edited using an **algorithm to replace a person** in the original video/image with **someone else**, in a way that **makes the video look authentic**.
 - Deepfakes use a **form of artificial intelligence** called **deep learning** to make images of fake events, events that haven't happened.
 - **Deep learning is a machine learning subset**, using **artificial neural networks** inspired by the **human brain** to learn from large data sets.
- **Deepfake imagery** could be an **imitation of a face, body, sound, speech, environment**, or any other personal information manipulated to create an **impersonation**.

How does Deepfake work?

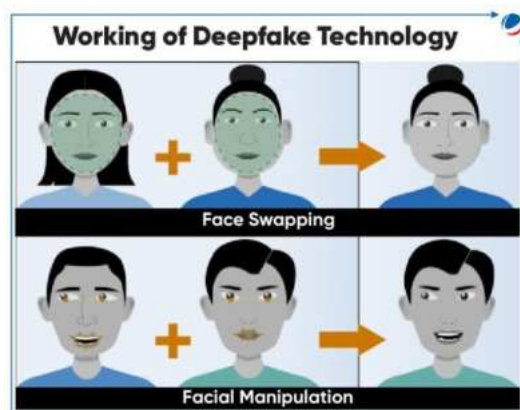
- Deepfakes uses technologies of **deep learning, AI and photoshoping** to create images of events.
 - The technologies namely, **GANs (Generative Adversarial Networks)** (a class of Machine Learning) are interplayed to create the videos.
- Deepfakes also use **Generative Adversarial Networks (GANs)**, which consist of generators and discriminators.
 - **Generators** take the initial data set to create new images.
 - Then, the **discriminator evaluates** the content for realism and does further refinement.
- **Deepfakes** also employ a deep-learning computer network called a **variational auto-encoder**, a type of **artificial neural network** that is normally used for facial recognition.
 - **Auto-encoders** detect facial features, suppressing visual noise and “non-face” elements in the process. They enable a **versatile “face swap” model** using shared features of person/image etc.

Issues associated with Deepfake

- **Misinformation and Disinformation:** Deepfakes can be used to create **fake videos** of politicians or public figures, leading to misinformation and **potentially manipulating public opinion**.
- **Privacy Concerns:** Deepfakes can be used to **damaging content** featuring individuals without their consent, leading to privacy violations and potential harm to reputations.
 - Deepfakes are, thus, a **breach of personal data** and a **violation of the right to privacy of an individual**.
- **Lack of Regulation:** Major issue is the **lack of a clear legal definition of deepfake technology** and the activities that constitute deepfake-related offences in India.
 - Thus, it becomes **difficult to prosecute individuals or organisations** that engage in malicious or fraudulent activities using deepfakes.
- **Challenges in Detection:** Developing effective tools to detect deepfakes is an ongoing challenge, as the technology used to create them evolves.

Key Provisions of the Advisory

- **Identify deepfakes:** Ensure that **Due diligence** is exercised and reasonable efforts are made to **identify misinformation and deep fakes**.
- **Quick action:** Such cases are **expeditiously actioned** against, well within the **timeframes stipulated under the IT Rules 2021**.
- **Caution for users:** **Not to host** such information/content/Deepfakes.
- **Time period:** **Remove any such content** when reported **within 36 hours** of such reporting.
- **Expeditious action:** Well within the **timeframes stipulated IT Rules 2021**, and disable access to the content/information.



Know the term

➤ **Artificial neural networks (ANNs)** is an information processing paradigm that is inspired by the way brain process information.

- **Gender inequity:** Women form about **90% of the victims of crimes like revenge porn, non-consensual porn** and other forms of harassment.
 - **Deepfake adds one more to the list**, thus, shrinking online space for women.
- **Erosion of trust:** The prevalence of deepfakes challenges the trustworthiness of media content, making it more difficult for people to rely on what they see and hear.
- **Ethical challenges:** Balancing the need to **combat the negative impacts** of deepfakes with the protection of free speech and **artistic expression** poses a complex ethical challenge.

Opportunities with Deepfake technology

- **Entertainment:** Voices and likenesses can be used to achieve desired creative effects.
- **E-commerce:** Retailers could let customers use their likenesses to **virtually try on clothing**.
- **Communication:** **Speech synthesis and facial manipulation** can make it appear that a person is authentically speaking another language.
- **Research and Simulation:** It can aid in training professionals in various fields by providing realistic scenarios for practice, **such as medical training**.

Regulatory measures applicable to deepfakes

- **Legal provisions in India:** In India, there are **no specific legal provisions against deepfake** technology. However, some laws indirectly address deepfake, viz.,
 - **Section 66E of the IT Act of 2000:** An act involving **capturing, publishing, or transmitting** a person's images in mass media, violates their privacy.
 - **Section 66D of the IT Act of 2000:** Provides a provision to **prosecute individuals who use communication devices or computer resources** with malicious intent, **to cheat or impersonate someone**.
 - **Indian Copyright Act of 1957:** Provides for penalties for the infringement of copyright.
- **Global measures against Deepfakes:**
 - **Bletchley Declaration:** **Over 25 major countries** including **India, United States, China, Japan, and UK** called **to tackle the potential risks of AI**.
 - **Digital Services Act of EU:** Obligates **social media platforms** to adhere to labelling obligations, enhancing transparency and aiding users in determining the authenticity of media.
 - **Google announced tools:** Watermarking to identify synthetically generated content.

Way ahead

- **Strengthening legal framework:** Need to **establish and update laws and regulations** specifically addressing the creation, distribution, and malicious use of deepfake and associated content.
- **Promote Responsible AI Development:** Need to encourage ethical practices in AI development, including the responsible use of deep learning technologies.
 - **Asilomar AI Principles** can act as a Guide to ensuring safe and beneficial AI development.
- **Responsibility and Accountability of social media platforms:** The need will be to create a **uniform standardization** that **all channels can adhere to and is common across borders**.
 - **For example, YouTube** has recently announced measures requiring creators to disclose whether the content is created through AI tools.
- **International Cooperation:** Establish **shared standards and protocols** for combating use of deepfakes across borders.
- **Invest in Research and Development:** Allocate resources to support ongoing research into **deep fake technologies, detection methods, and countermeasures**.

To know more about Asilomar AI Principles, kindly refer to Article 9.2. AI and Human Rights in the October 2023 edition of VisionIAS Monthly Current Affairs Magazine.

7.2. ARTIFICIAL INTELLIGENCE (AI): REGULATION AND APPLICATION

Why in the news?

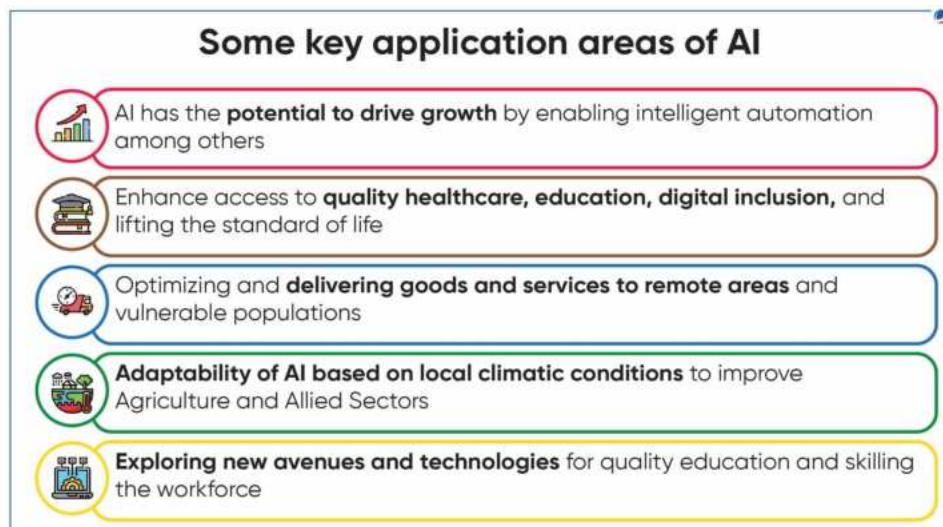
Recently, the World's first-ever AI Safety Summit was held at Bletchley Park in Buckinghamshire near London (United Kingdom).

Know the term

- **Frontier AI:** It is defined as highly capable **general purpose AI models** that can perform a wide variety of **tasks and match or exceed** the capabilities present in today's most **advanced models**.
- These highly capable foundation models could possess dangerous capabilities that can pose severe risks to public safety.

More on the News

- 27 major countries including the United States, China, Japan, UK, France, and **India**, and the European Union agreed to sign a declaration, named the **Bletchley Declaration**.
- The Declaration fulfils key summit objectives in establishing shared agreement and responsibility on the risks, opportunities and a forward process for international collaboration on **frontier AI safety and research**.



Refer below articles for detailed understanding of AI in Healthcare, Agriculture and empowering other technologies

What are the risks associated with AI development that necessitate its regulation?

- Control of Big Tech:** Decisions about the development of AI are overwhelmingly in the hands of the big tech companies with access to vast stores of digital data and immense computing power.
- Misuse:** Substantial risks may arise from potential intentional misuse or unintended issues of control relating to alignment with human intent.
 - Frontier AI systems may **amplify risks such as disinformation** through the use of algorithms.
 - Increasing instances of **deepfakes**, intentional sharing of **harmful information** and **cyber frauds** are examples of it. E.g., instances observed in elections across the world.

To know more about application of Artificial Intelligence in elections, kindly refer to Article 1.3. Artificial Intelligence and elections in September 2023 edition of VisionIAS Current Affairs Magazine.

- Model Collapse scenario:** Over time, datasets may be poisoned by AI-generated content which changes the patterns in the dataset, **incorporating mistakes of previous AI models**. E.g., issues of racial discrimination experienced in previous AI models.
- Model adoption challenges:** There are risks associated with different models for AI development.
 - Closed:** An ecosystem limited to a small number of closed models and private organizations can prevent misuse by malicious actors but has the potential for **safety failures and undetected biases** to propagate.
 - Open-source:** On the other hand, an open-source model can spot biases, risks or faults but increases the **risk of misuse** by malicious actors.
- Cyber risks:** Global tensions and the rise in cyber capabilities have led to escalating cyber crime or hacking incidents and consequent disruption of public services.
- Economic risks:** The effects of AI in the economy, such as labour market displacement or the automation of financial markets, could cause social and geopolitical instability.



What has been done to regulate AI?

- European Union:** EU's AI Act intends to be the **world's first comprehensive AI law**.
 - It **classifies AI systems** into four tiers of risk and different tiers are subject to different regulations.
 - A **new EU AI office** would be created to monitor enforcement and penalties including fines of up to 6% of total worldwide revenue.

- **USA:** Regulation to set standards on security and privacy protections and builds on voluntary commitments adopted by more than a dozen companies.
- **India:** Government of India is contemplating to bring out a comprehensive **Digital India Act** to regulate AI.
 - NITI Aayog released the **National Strategy on Artificial Intelligence (NSAI)** which focuses on **Responsible AI for All (RAI)** principles.
- **China:** China's regulations require an **advanced review of algorithms** by the state and should adhere to the core socialist values.
 - AI-generated content must be properly labelled and respect rules on data privacy and intellectual property.

What can be done to better regulate AI systems?

- **International Cooperation:** Since many challenges posed by AI regulation cannot be addressed at a purely domestic level, international cooperation is urgently needed to establish basic global standards.
- **Impact assessment:** International efforts to examine and address the potential impact of AI systems is needed.
- **Proportionate Governance :** Countries should consider the importance of a pro-innovation and proportionate governance and regulatory approach that maximises the benefits and takes into account the risks associated with AI.
- **Private sector accountability:** Increased transparency by private actors developing frontier AI capabilities, appropriate evaluation metrics, tools for safety testing, and developing relevant public sector capability and scientific research.
- **Better Design:** To reduce degree and impact of bias and harmful responses, there is a need for curated, fine-tuned datasets with inclusion of more diverse groups and continuous feedback mechanism.

7.2.1. AI IN HEALTHCARE

Why is it important?

The emergence of AI in healthcare has been ground-breaking, reshaping the way we diagnose, treat and monitor patients. This technology is drastically improving healthcare research and outcomes by producing more accurate diagnoses and enabling more personalized treatments.

Application Areas

- **Higher-quality patient care:** AI-powered clinical decision support (CDS) tools can aid in developing accurate, appropriate and actionable diagnostic or treatment recommendations.
 - Apollo hospitals launched Apollo Clinical Intelligence Engine, a CDS, open to use by all Indian doctors.
- **Clinical research and discovery:** AI is improving clinical trials – supporting diversity in recruitment and innovation in operations. Also, AI is helping to **advance early disease identification and intervention**.
- **Healthcare supply chain resilience:** Predictive models driven by data provide longitudinal visibility of supply with real time information regarding shortages and surpluses.
- **Workforce optimization:** Workflows automated with AI capabilities can help extend scarce labor resources, reduce work fatigue and burnout, and enable operational and cost efficiencies.

Potential Challenges	Future prospect
Some of the roadblocks to more widespread healthcare adoption still include- <ul style="list-style-type: none"> ○ blind spots in data access and collection, ○ privacy issues, ○ data misuse, and ○ regulatory ambiguity. 	AI in healthcare holds immense potential and promise for all of us, ushering in a new era filled with- <ul style="list-style-type: none"> ○ advancements in diagnostics and treatments, ○ therapeutic discovery and clinical research, ○ supply chain resiliency, and ○ a host of operational and administrative efficiencies.

7.2.2. AI IN AGRICULTURE

Why is it important?

The application of AI in agriculture has been widely considered as one of the most viable solutions to address food inadequacy and to adapt to the need of a growing population.

Application Areas

- **Intelligent crop planning:** It includes AI model based planning for micro and macro cropping, credit and extension, irrigation and sowing windows.
 - AI systems are helping to improve the overall harvest quality and accuracy – known as **precision agriculture**.
- **Smart Farming:** AI frameworks help in nutrition management, promotion of one health, mechanization of farms, soil analysis, pest and weather predictions.
 - World Economic Forum is implementing **AI for Agriculture Innovation (AI4AI) initiative** to transform the agriculture sector in India by promoting the use of AI. Under it, ‘**Saagu-Baagu**’ initiative was launched to promote innovation in agriculture in Telangana.
- **Farmgate-to-fork:** Market-based intelligence, traceability and quality of logistics, supply chain optimization, emergence of fintech, and demand and price production improves efficiency.
- **Data-driven agriculture:** Data driven AI can enhance agricultural productivity and help in creation of a national market through analysis.

Potential Challenges	Future prospect
There are continued challenges such as- <ul style="list-style-type: none">○ the need for infrastructure development,○ access to technology in remote areas, and○ the necessity for farmer education and awareness.	The future of AI in agriculture in India holds great promise for improving productivity, and making farming practices more sustainable with following steps- <ul style="list-style-type: none">○ Continued investment,○ Research, and collaboration between the government, tech developers, and farmers

7.2.3. MULTIMODAL AI

What is it and why is it important?

Multimodal AI combines the **power of multiple inputs** to solve complex tasks. In order to solve tasks, a multimodal AI system needs to associate the same object or concept across different facets of a given media. A multimodal AI system can piece together **data from multiple data sources** such as text, images, audio and video, creating applications across sectors.

Application areas

- **Business Analytics:** It can make the best use of machine learning algorithms because it can recognize different types of information and give better and more informed insights.
 - By combining information from various streams, it can make predictions about a company’s financial results, and even predict maintenance needs.
- **Data processing:** It can help in generating textual descriptions, transcription of videos, text-to-speech conversion, analysis of facial expressions and development of sensors for autonomous vehicles or machines.
- **Accessibility:** Such systems can assist individuals with disabilities by providing environmental awareness.

Potential Challenges	Future prospect
There are continued challenges such as- <ul style="list-style-type: none">○ privacy concerns,○ ethical considerations, and○ the need for standardized frameworks	Multimodal AI systems are versatile and continues to advance, expanding their horizon and potential use cases by creating multi-stakeholder frameworks addressing privacy, security and ethical concerns.

Conclusion

Striking the right regulatory framework is crucial to harness the full potential of AI while ensuring responsible and ethical deployment. As we navigate this evolving landscape, collaborative efforts between policymakers, industry stakeholders, and researchers are imperative to shape a future where AI contributes positively to society.

7.3. WI-FI 7 TECHNOLOGY

Why in the news?


Recently U.S. based company **Qualcomm** suggested that **India should adopt the newest Wi-Fi 7 technology**.

About Wi-Fi 7

- Wi-Fi, **Wireless Fidelity**, is a wireless technology that allows devices to connect to the internet and communicate with each other.
 - It **uses radio waves** to provide high-speed wireless internet and network connections.
 - For transmitting Wi-Fi signal there needs **three medium**, such as Base station, Router and Accessing devices (like Phone, Laptop, etc.)
- **Wi-Fi 7** is the next-generation Wi-Fi standard to be launched, based on **IEEE 802.11be** — extremely high throughput (EHT).
 - **Institute of Electrical and Electronics Engineers (IEEE)** is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.
- **Key Features of Wi-Fi 7:**
 - **Backward Compatibility:** Connects with devices in 2.4GHz, 5GHz, and 6GHz bands without requiring new hardware.
 - ✓ It won't be stuck to a single frequency but **use a mix of available spectrum** frequencies to provide a solution.
 - **Lower Latency:** Enables faster cloud-based operations like file transfers and gaming.
 - **Multi-Link Operation (MLO):** Combines multiple channels on different frequencies for improved network performance.
 - **Speed and Capacity:** Wi-Fi 7 could theoretically support a bandwidth of up to 330 Gigabits per second per access point. **Four times faster** than the maximum speed of Wi-Fi 6.

Benefits of Wi-Fi 7

- **Alignment with India's Tech Adoption:** Wi-Fi 7 enables India's rapid adoption of cloud-based and wireless applications and the government's digital initiatives regarding security and privacy.
- **Promising**

 Comparison of Wi-Fi generations				
	Wi-Fi 4	Wi-Fi 5	Wi-Fi 6/6E	Wi-Fi 7
Peak Speed	600 Mbps	7 Gbps	9.6 Gbps	36 Gbps
Frequency Bands	2.4 Ghz, 5 Ghz	5 Ghz	2.4 Ghz, 5 Ghz	2.4 Ghz, 5 Ghz, 6Ghz
Key Advances	Introduced MIMO (Multiple Input, Multiple Output) technology for improved data transfer rates and reliability.	Introduced wider channels, MU-MIMO (Multi-User-MIMO) , and Beam-forming for increased data transfer speeds and better handling of multiple devices.	Introduced features like OFDMA (Orthogonal Frequency Division Multiple Access)	Key features include backward compatibility, multi-link operation (MLO), and support for wider channels (up to 320MHz) and Adaptive puncturing technology
Launch	2007	2013	2019	2024 (Expected)

- **Developments in India:** Digital transformation in the enterprise sector, fixed wireless connectivity, smartphone technology, and the potential of Artificial Intelligence (AI), especially Edge AI.
- **Addressing emerging technologies demands:** Wi-Fi 7 could support the growing number of **Internet of Things (IoT) devices**, includes **smart home devices, wearables**, and industrial IoT applications.
- **Medicinal Field:** Tele-diagnostics and telesurgery.
- **Enhancing User Experiences in Advanced Applications:** Wi-Fi 7 can facilitate the streaming of higher-resolution content, such as **8K videos**.
 - Also, could enhance performance in **cloud gaming, AR/VR and other data-intensive activities**.

7.4. CAR-T CELL THERAPY

Why in the news?

Recently, the Central Drugs Standard Control Organisation (CDSO) approved the Indigenous **Chimeric Antigen Receptor T cell (CAR-T cell) therapy**.

More in News

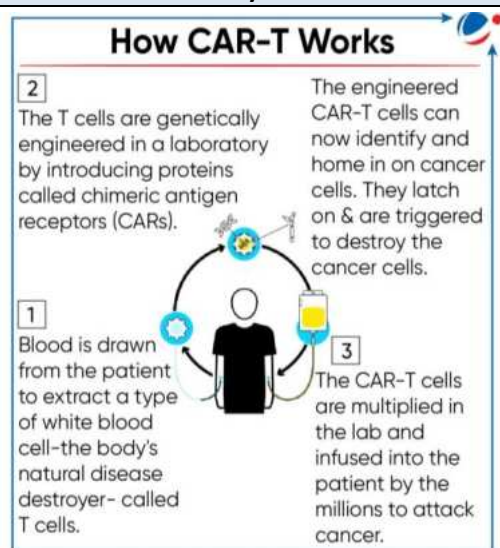
- The **therapy is called NexCar19**, a type of CAR-T and gene therapy developed indigenously in India by **ImmunoACT**, which is a company incubated at IIT Bombay.

- It will treat lymphoma and Leukaemia (Blood Cancer).
- **India** is now one of the **first developing countries** to have its indigenous CAR-T and gene therapy platform.

Lymphocytes: T-cell vs. B-cell		
Lymphocytes are a type of White Blood Cells (WBCs) that circulate in blood and are part of the immune system . There are two main types of lymphocytes: T cells and B cells .		
Characteristics	T-Cell	B-Cell
Function	T cells are direct fighters of foreign invaders and also produce cytokines, which are biological substances that help activate other parts of the immune system. (Attacks infected cells)	B cells produce antibody molecules that can latch on and destroy invading viruses or bacteria. (Attacks foreign bodies outside the cells)
Origin and Maturation	Originate from stem cells in the bone marrow but mature in the thymus gland.	Originate and mature in the bone marrow.
Immunity	Play a central role in cell-mediated immunity .	Responsible for humoral immunity .

About NexCAR19

- The therapy is designed to target cancer cells that carry the **CD19 protein**.
 - CD-19 is a biomarker (or flag) for **B lymphocytes (or B-cells)** and can be utilised as a target for leukaemia immunotherapies.
 - ✓ A **Biomarker** is a measurable and assessable indicator, often a molecule or characteristic, that provides information about a biological process, condition, or response to a treatment.
- This therapy is for people with **B-cell lymphomas** (blood cancer) who **don't respond** to standard treatments like **chemotherapy**, leading to relapse or recurrence of the cancer.



CAR-T Therapy vs. Chemotherapy		
Aspect	CAR-T Therapy	Chemotherapy
Mechanism of Action	Genetically modifies patient's T cells to target cancer	Uses drugs to kill rapidly dividing cells, including cancer
Precision	Highly precise, targeting specific cancer cells	Non-specific, affecting both cancer and healthy cells
Treatment Duration	Typically, a single infusion or a few treatments	Multiple cycles, often over an extended period
Personalization	Individualized treatment based on patient's own cells	Standardized treatments, less personalized approach

Challenges in adoption

- **Cytokine Release Syndrome (CRS):** It occurs when the proliferation of CAR T-cells leads to the release of **abundant cytokines into the bloodstream**, triggering an intensified immune system response.
- **Neurological Toxicity:** Some patients may experience neurotoxicity, leading to confusion, seizures, or other neurological issues, often associated with CRS.
- **Limited Applicability:** CAR-T therapy has primarily been successful in treating certain blood cancers, like leukaemia and lymphoma, and its **effectiveness in solid tumours** is an ongoing area of research.
- **High Cost:** The personalized and complex nature of CAR-T therapy contributes to its high cost, limiting its accessibility to a larger population.
- **Patient Eligibility:** Not all patients are eligible for CAR-T therapy, and factors such as age, overall health, and the presence of certain pre-existing conditions can impact eligibility.

Way forward

- **Enhance Safety Profiles:** Continuous research to improve the safety profile of CAR-T therapy, minimizing severe side effects such as cytokine release syndrome (CRS) and neurotoxicity.

- **Global Collaboration:** Encourage international collaboration and data-sharing to accelerate research, share best practices, and facilitate the global advancement of CAR-T therapy.
- **Enhancing Accessibility:** By developing Standard Operating Procedures (SOPs) for its application and integrating it into prevalent insurance packages.
- **Intensive Research:** Invest in research to broaden the applications of CAR-T therapy, exploring its effectiveness in treating additional types of cancer beyond Blood cancer.

7.5. DIVERSE EPIGENETIC EPIDEMIOLOGY PARTNERSHIP (DEEP)

Why in the News?

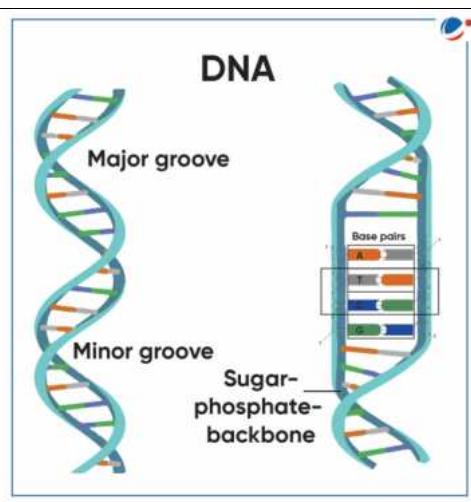
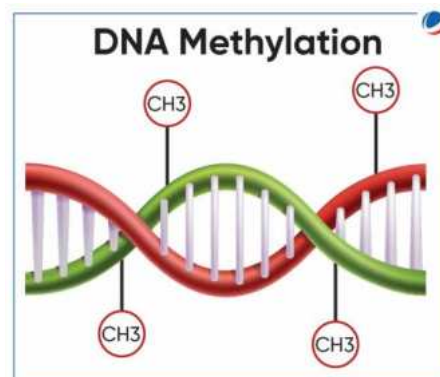
CSIR-Centre for Cellular and Molecular Biology (CCMB) is collaborating with research groups across the world on the Diverse Epigenetic Epidemiology Partnership (DEEP) project.

What is Epigenetic Epidemiology?

- **Epigenetics:** It is the study of how your **behaviours and environment** can cause **changes** that affect the **way your genes work**.
 - Unlike genetic changes, **epigenetic changes are reversible** and do not change the DNA sequence, but they can change how body reads a DNA sequence.
- **Epidemiology:** It is the scientific discipline that **examines patterns and factors related to health and disease** in populations.
 - It aims to understand how diseases spread, identify risk factors, and develop strategies for prevention and control.
- As a combination of the two, **epigenetic epidemiology** might be defined as 'the part of epidemiology that studies the **effects of epigenetic changes on the occurrence and distribution of diseases**'.
 - One common epigenetic modification is **DNA methylation** which involves the **addition of a methyl group to the DNA molecule** (refer to the infographics).
 - ✓ **High levels of DNA methylation** at a gene promoter region can lead to **gene silencing**, preventing the gene from being expressed.
 - ✓ **For example**, during stress, DNA may undergo increased methylation, leading to the suppression of those genes.

Know the term

- **Genes:** They are small sections of the DNA that are considered the basic unit of inheritance and contain the information needed to specify physical and biological traits. (e.g.; -eye and hair colour)



DNA (DeoxyriboNucleic Acid)

- It is a molecule that **carries the genetic information** for the development, functioning, growth, and reproduction of living organisms.
- It is made of **two linked strands** that wind around each other to resemble a twisted ladder — a shape known as a **double helix**.
- Each strand has a backbone made of alternating sugar (deoxyribose) and phosphate groups.
- Attached to each sugar is one of four bases: **Adenine (A), Cytosine (C), Guanine (G) or Thymine (T)**.
- **A always pairs with T, and C always pairs with G.**

About DEEP Project

- It is a **five-year project**, led by researchers at the **University of Bristol, London** and the **CSIR Centre for Cellular and Molecular Biology in India**.

- **Rationale:**

- Much of the population health research conducted till date has drawn heavily on data collected from people of **white European origins** leaving many global communities **under-represented** in health studies.
- Diverse genetic databases are crucial for understanding factors impacting gene regulation and variations in disease risk among different populations.

- **Procedure:** It will generate **genomic datasets in underrepresented populations** across African, Asian, and North and South American continents.

- By **analysing DNA methylation data and health-related measures from people around the world**, the DEEP study aims to identify the causes and mechanisms of these health outcomes.
- ✓ About 13,000 participants, are to be part (including from India).

- **Significance for India:** Through this, CCMB (Centre for Cellular and Molecular Biology) is expecting to understand the genetics behind Non-Communicable Diseases (NCDs) in diverse populations especially in India and other South Asian countries.

- It helps in understanding implications for common diseases like type 1 and 2 diabetes, chronic pancreatitis, etc.

Challenges in implementing the Project

- **Data Privacy and Security:** Genomic data is highly sensitive and contains personal information.
- **Ethical Considerations:** Genome projects often involve human subjects, raising ethical questions about the informed consent of individuals and their long-term effects on the community.
- **Data Storage and Management:** The vast amount of data generated in genome projects requires advanced storage and computational resources.
- **Dynamic Nature of the Genome:** Understanding the dynamics of genome evolution, including factors such as mutation rates, selection pressures, and adaptation, poses challenges in tracking changes accurately.
- **Integration of Clinical and Genomic Data:** Connecting genomic data with clinical information, including electronic health records, poses integration challenges.

Way forward

- **Collaboration and Data Sharing:** Encourage international collaboration and open sharing of genomic data.
 - Establishing **standardized protocols** for data collection and sharing promotes transparency and accelerates research.
- **Ethical Guidelines:** Establish robust governance structures at the global level to ensure the responsible and ethical use of genomic data, with a particular emphasis on participant consent and data privacy.
- **Public Perception and Education:** Public understanding of genomics, genetic testing, and the implications of genomic research can influence its acceptance and success.
- **Community Engagement:** Engage with local communities to address concerns, build trust, and ensure that genomic research considers the socio-cultural contexts of diverse populations.



7.6. ULTRA-PROCESSED FOOD

Why in the News?

The **Food and Agriculture Organisation (FAO)** has released '**the State of Food and Agriculture (SOFA) 2023** Report which raises concerns associated with **hidden cost of ultra-processed foods**.

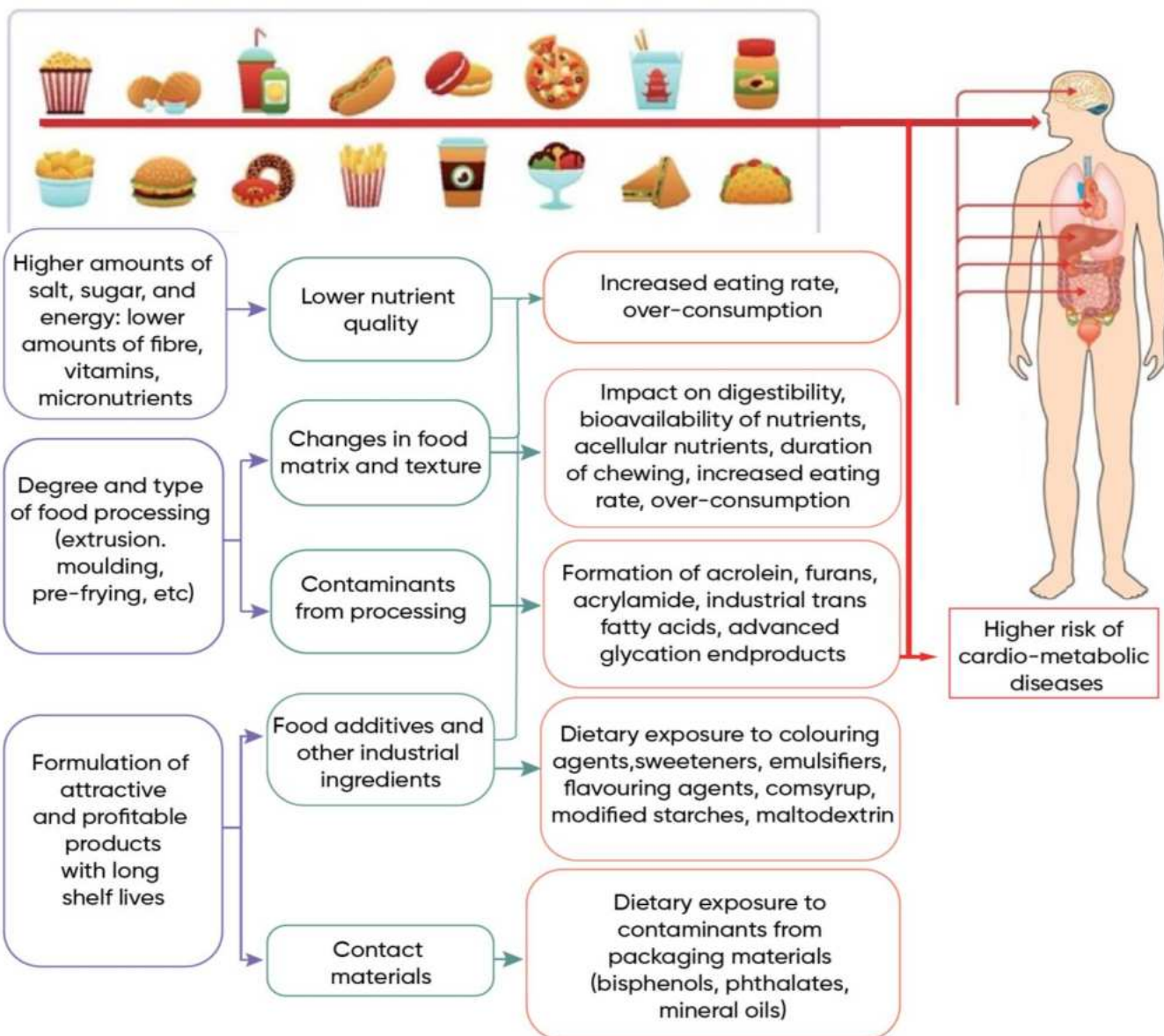
More about the news

- 2023 report presents **national-level True Cost Accounting (TCA) assessments to uncover hidden impacts of agrifood systems.**
 - The 2024 report will focus on in-depth targeted assessments to identify the ways to mitigate them.
- It states that **unhealthy diets, high in ultra-processed foods, fats and sugars drove a huge hidden cost of over \$7 trillion a year** on our health and environment.
- As per WHO, **India's ultra-processed food sector grew** at a compound annual growth rate of **13.37%** in retail sales value from 2011 to 2021.
- The **retail value** of ultra-processed food and beverages grew exponentially from **US\$ 0.9 billion in 2006 to over US\$ 37.9 billion in 2019.**

Know the term

- TCA:** Holistic and systemic approach to measuring and valuing **environmental, social, health and economic costs** and benefits generated by agrifood systems to **facilitate improved decisions by policymakers, businesses, farmers, investors and consumers.**

Ultra Processed Food and its Impact



What is Ultra-Processed food (UPF)?


- The Ultra-processed foods are made mostly from substances extracted from foods, such as fats, starches, added sugars, and hydrogenated fats.
- High consumption of UPF combined with low physical activity leads to issues like obesity, diabetes and cardiovascular diseases.

Challenges in Curtailing Ultra-Processed food

- **Lack of standard definition:** Like absence of a clear definition of ultra-processed food or HFSS (High in saturated Fat, Salt and Sugar) food and their categorisation.
- **Lack of a nutrition-based tax model:** This model focuses on higher taxes for products which have sugar, salt or fat beyond recommended levels and lower taxes for the healthier options.
 - The goods and services tax (GST) rates are not aligned with nutrition content in the food nor are they aligned with the product classification of the FSSAI.
- **Lack of data:** For certain subcategories like carbonated drinks by sugar content is not available, a detailed survey is needed to capture such data in order to undertake policy decisions.
- **Lack of Subsidies and other fiscal incentives:** For manufacturers for making healthy products and to consumers to encourage consumption.
 - E.g., In South Africa, subsidies on fruits and vegetables are part of private health insurance programmes.
- **Lack of implementation:** The FSSAI proposed Indian Nutrition Rating as a format for Front-of-Pack Labelling (FOPL) to help consumers to make informed food choices is yet to come into effect.
 - There is also an alleged lack of oversight on implementation of advertisement and marketing regulation for the Ultra-Processed foods.



Food and Agriculture Organisation (FAO)



Genesis: Established as the specialised agency of UN in 1945

Mandate: To improve nutrition, increase agricultural productivity, raise the standard of living in rural populations and contribute to global economic growth.

Organisational Structure: Headed by a Director General and has various regional and Technical Committees.

Members: It consists of 195 members including the European Union

Key Reports: The State of World's Forest Report, The State of Agricultural Commodities Markets etc.

Is India a member? ☒

Way Forward

- **Create a clear and transparent definition** of Ultra processed food and its subcategories, by the FSSAI in consultation with other stakeholders.
- **Introduction of Nutrition linked taxes**, which encourages the consumers to procure healthier food items at a lower price.
- **Provide Fiscal incentives linked to nutrition** as they can drive production, exports and consumption of healthier food options.
- **Mapping global best practices and implementing it** in India's policies as per the local requirements.
 - **Eg. The Junk food tax** levied on high calorie foods in Mexico, has reduced the consumption by around 7%

FSSAI initiatives to curtail Ultra-Processed food

- FSSAI has put a cap on trans-fatty acids in food products, at 2% or less from 2022.
- The Food Safety and Standards (Advertising and Claims) Regulations, 2018 aims to hold food businesses accountable for their claims/advertisements.
- Food Safety and Standards (Safe Food and Healthy Diets for School Children) Regulations, 2020 bans advertisements of Ultra processed foods in school canteens or within 50 metres of school campuses
- 'Eat Right India' movement, which aims to reduce the intake of salt, sugar, and saturated fats.
- Initiated a nation-wide social media campaign called 'Aaj Se Thoda Kam', to bring about dietary modifications, reduce salt, sugar and fat consumptions.

- **Implement better labelling guidelines**, The Draft Notifications on Food Safety and Standards (Labelling & Display) Amendment Regulations (2022) of FSSAI should be implemented, after stakeholders' consultation
 - E.g., **Australia and New Zealand had launched a Health Star Rating system**, which provide relevant nutrition information on food packs, easily understandable by the consumer.
- **Efficiently use advertisement and marketing to ensure nutrition security** and restrict marketing or advertisement of unhealthy foods through proper framework.

Related News

QR code on food products

The **Food Safety and Standards Authority of India (FSSAI)** has recommended the **inclusion of Quick Response (QR) code** on food products.

- The QR codes are **to provide various details about the product**, including, but not limited to, ingredients, nutritional information, manufacturing and expiry dates and contact information for customer enquiries.
- Will **help the consumers in identifying unhealthy foods** and make informed decisions.
- The advisory caters to **two important regulations**.
 - **The Food Safety and Standards (Labelling and Display) Regulations, 2020** which outlines the information to be included on labels of food products and
 - **The Rights of Persons with Disabilities Act, 2016** which recognises the rights of individuals with disabilities and emphasises accessibility of health for persons with disabilities.

7.7. NEWS IN SHORTS

7.7.1. 25 YEARS OF INTERNATIONAL SPACE STATION (ISS)

- On November 20, 1998, **Zarya (translates to "sunrise") module launched aboard Russian Proton rocket from Kazakhstan** to form the cornerstone of ISS.
- ISS is a **large spacecraft around Earth**. It serves as a **home where crews of astronauts and cosmonauts live**. Space station is also a **unique science laboratory**
 - It is a **partnership between European countries** (represented by ESA), **United States (NASA)**, **Japan (JAXA)**, **Canada (CSA)** and **Russia (Roscosmos)**.
 - It **orbits Earth at an average altitude of approximately 250 miles in every 90 minutes**.
 - It has been continuously **occupied since November 2000**.
- ISS weighs almost **400 tonnes and covers an area as big as a football pitch**. It would have been impossible to build the Space Station on Earth and then launch it into space in one go.
 - So, ISS was taken into space **piece-by-piece and gradually built-in orbit**. This assembly required more than 40 missions.
- **Significance of ISS**
 - Allow crew members to **do research that could not be done anywhere else**.
 - Allow for **critical research in fluids, combustion, life support systems and radiation environment**, which is needed for future human space exploration.

India's space station plan

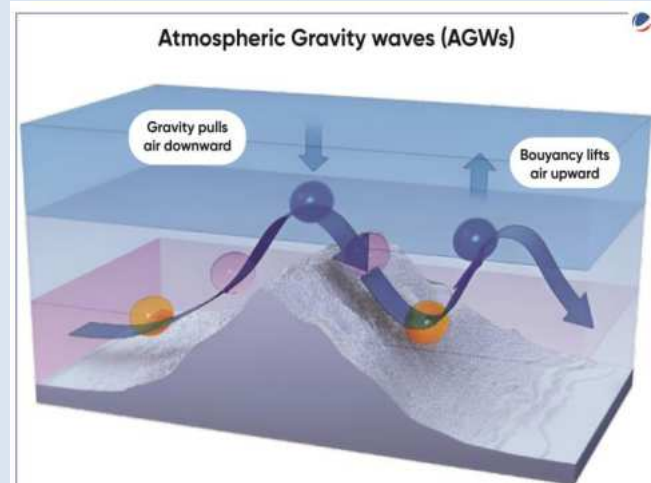
- As per ISRO's chairman, India's proposed space station is envisaged to **weigh 20 tonnes and serve as a facility where astronauts can stay for 15-20 days**, and would be placed in an **orbit 400 km above earth**.
- Prime Minister of India directed that **India should now aim for setting up 'Bharatiya Antariksha Station' (Indian Space Station) by 2035**.

7.7.2. ATMOSPHERIC WAVE EXPERIMENT (AWE) MISSION

- **NASA is set to launch AWE mission** to the International Space Station (ISS).
- AWE is a **pioneering NASA experiment** designed to explore the **interplay between terrestrial and space weather**.
- It will **examine airglow** (colourful bands of light in Earth's atmosphere) to determine **what combination of forces drives space weather in the upper atmosphere**.
- It will also **measure Atmospheric Gravity Waves (AGWs)** at **mesopause** (an atmospheric layer that begins some 87 km in altitude).
 - AGWs form as **buoyancy lifts air upward**, and **gravity brings it back down**.
 - ✓ The **upward movement** encourages **cloud formation**, while the **downward movement** promotes **clear skies**.
 - These waves result from various processes like **airflow over mountains, convection** (e.g., thunderstorms), and **frontal systems**.

- They serve to **connect different parts of the atmosphere**, such as a surface storm causing can causes changes in the ionosphere.
- **Space Weather** describes the **variations in the space environment** between the sun and Earth.
 - **Sun** is the **primary source of space weather** with the greatest disturbances usually caused by **solar flares** and subsequent **geomagnetic storms**.
 - Space weather **can affect power grids**, radio or satellitebased **communication**, operations of navigation and **Global Positioning Systems (GPS)**.

Significance of studying AGWs: A better understanding of how gravity waves in the upper atmosphere **interact with the jet stream, polar vortex and other phenomena** could be **key to improved weather predictions and climate models**.



7.7.3. X-RAY POLARIZATION

- **Indian researchers detect X-ray polarization** for the first time from a **black hole outside the Milky Way**.
- Radiations are emitted from the vicinity of a **black hole located in the Large Magellanic Cloud-X-3 (LMC X3)** and located 200,000 light years away from the Earth.
 - **The Magellanic Clouds** are two irregular dwarf satellite galaxies orbiting our Milky Way galaxy in the southern celestial hemisphere.
 - The two galaxies are **large magellanic clouds** and **small magellanic clouds**.
- Researchers studied LMC X-3 using the **Imaging X-ray Polarimetry Explorer (IXPE)**, the **Neutron Star Interior Composition Explorer (NICER) Mission**, and **Nuclear Spectroscopic Telescope Array (NuSTAR)**.
 - **IXPE was the first mission** of NASA to study the polarization of X-rays from celestial objects.
 - **ISRO's upcoming X-ray Polarimeter Satellite (XPoSat) mission** will be the second satellite with this capability.
- Researchers used X-ray polarimetry to reveal that **X-ray emissions from this black hole were polarised in**

nature, "which means it changes the degree and angle".

- **About X-ray polarimetry:**
 - **it is a unique observational technique** to identify where radiation comes from near black holes.
 - **It helps in** studying the origin of cosmic rays in the universe, the nature of black holes, and the interaction of matter with the highest physically possible magnetic fields.

7.7.4. PLASMA WAVES DETECTED ON MERCURY

- Recently, **astronomers has detected mysterious "singing" plasma waves around Mercury**.
- In **regions laced with magnetic fields**, such as the space environment, particles are continually tossed to and fro by the motion of various electromagnetic waves known as **plasma waves**.
- **About Discovery**
 - This is the **first time that 'whistling' sound waves were found** emitting from Mercury's magnetic field.
 - ✓ Chorus waves have been recorded on Earth, Jupiter, and Saturn, and observed at Uranus and Neptune.
 - Other planets where such musical waves were found have thick atmospheres and radiation belts wherein solar particles become trapped.
 - ✓ **Mercury lacks thick atmosphere** that could contain oxygen **or a radiation belt** where solar particles get trapped by the planet's magnetic field.
 - Mercury, which was once believed to have a weak magnetic field, **is now believed to have a strong one**, as indicated by these "whistling" sounds.

Mercury's Characteristics

- **Structure and Surface:** It is the smallest and terrestrial planet in our solar system and doesn't really have an atmosphere.
- **Mercury's Neighbours:** does not have any moons. It is the closest planet to the sun. Venus is Mercury's neighbouring planet.
- Mercury has been known since ancient times because it can be seen without advanced telescopes.

Mission	Agency	Discovery
Mariner 10 (1973)	NASA	discovered the fact that it has a magnetic field
Messenger (2004)	NASA	The first ever to orbit, it mapped the entire planet, discovered

		abundant water ice in shadows at the poles.
Mercury BepiColombo mission (2018) with MIO instrument (to study Mercury's Magnetosphere)	A joint mission by the European Space Agency (ESA) and the Japanese Aerospace Exploration Agency (JAXA)	It is a helped scientists discover that electrons raining down on the planet's surface can cause high-energy auroras . Although the MIO instrument is not yet in orbit, it has already collected valuable data between 2021 and 2022.

7.7.5. WASP-107B

- NASA's James Webb Telescope discovered a **new Exoplanet** (any planet beyond solar system) named **Wasp-107b**, which consist **water vapour, sulfur dioxide, and silicate sand clouds**.
- About Wasp-107b** (discovered in 2017)
 - Situated **200 light-years away** in Virgo constellation.
 - Almost the size of Jupiter** but **similar in mass to Neptune**.
 - About **30 times bigger than Earth**, though it's **one of the lowest density planets known**. Hence, called **Fluffy Planet**.
 - Exhibits **water cycle akin to Earth's** but instead of **water droplets, planet experiences sand rain**.
- Significance of discovery:** Helps in **tracing our own evolution**, shedding light on **how weather cycles impact planetary geography** and how **atmospheres influence weather patterns**.

7.7.6. SOFIA (STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY)

- Scientists have detected **atomic oxygen in the atmosphere of Venus** through **SOFIA airborne observatory**.
- Venus (aka **Earth's twin**) is the **second planet from Sun** and Earth's nearest planetary neighbour.
 - Unlike Earth, it **rotates clockwise** (east to west) i.e backward.
 - It has **no moons/rings** and is the **hottest planet** due to "runaway greenhouse effect".
- SOFIA is the world's largest airborne astronomical observatory** (joint program of **NASA and German Aerospace Center**).
 - It flies in the **stratosphere**, above 99% of Earth's infrared-blocking atmosphere to **observe the infrared universe**.

7.7.7. LUCY MISSION

- NASA's Lucy mission has discovered that the **asteroid Dinkinesh is actually a binary system of two asteroids**.
- Launched in 2021, Lucy is the **first space mission to explore Jupiter Trojan asteroids**.
 - Trojans are a **group of small bodies** (remnants of early solar system) **that orbit the Sun** in two "swarms" along the orbit of Jupiter.
 - Trojan asteroids are **most likely made of same primordial material** that led to formation of **outer planets** (Jupiter, Saturn, Uranus, Neptune).
- Over its 12 year mission (2021-2023), Lucy will fly past various asteroids like **Eurybates, DonaldJohanson, Polymele, Leucus, etc.**

7.7.8. SUBSURFACE WATER ICE MAPPING (SWIM) PROJECT

- NASA funded SWIM project** (led by University of Arizona) has released its fourth set of maps, providing detailed **view of Mars' subsurface ice**.
 - These maps are **crucial for future Mars missions** as they identify most likely **locations to find Martian ice**.
 - This ice will provide **drinking water and a key ingredient for rocket fuel**.
 - Mars has both **water ice and carbon dioxide ice (dry ice)**.
- SWIM project combines data from several NASA missions**, including Mars Reconnaissance Orbiter, 2001 Mars Odyssey, and Mars Global Surveyor.

7.7.9. EUCLID SPACE TELESCOPE

- First images from Euclid space telescope** were released recently.
- Euclid is a **European Space Agency mission designed to unlock the secrets of dark matter and dark energy**.
 - Universe** is composed of **normal matter** (Visible constitute about 5%) **Dark matter** (about 25%) and **Dark energy** (about 70%).
 - Unlike normal matter, **dark matter does not interact with the electromagnetic force**.
 - Dark matter **does not absorb, reflect or emit light**, making it **extremely hard to spot**.
 - Dark energy is the name given **to the unknown energy source that is causing our Universe's expansion to accelerate**.

7.7.10. EJECTA HALO

- When the **Vikram lander** of the Chandrayaan-3 mission made a **soft landing** on the moon it **raised a lot of dust**.

- This led to **creation of a bright patch**, called as the **ejecta halo (a reflectance anomaly)**, around the spacecraft.
 - About **2.06 tonnes of lunar epi regolith were ejected and displaced** over an area of 108.4 m² around the landing site.
- The ejecta halo phenomenon has been documented in the case of **almost all lunar landings**.

7.7.11. AERONAUTICAL SOCIETY OF INDIA (AeSI)

- International Conference-cum-Exhibition on 'Aerospace & Aviation in 2047' is being organised to **commemorate 75 years of excellence of the AeSI**.
- AeSI is the **principal Society in India** serving the professions in areas of aeronautics, aerospace and aviation.
- It provides **interaction between professionals from all facets of civil and military aviation** as well as the manufacturing/training/maintenance agencies.
- It was inaugurated by **Pt. Jawaharlal Nehru in 1948** and he was also the **first Patron-in-Chief of the Society**.
- It has affiliations with **AICTE (All India Council For Technical Education)**; IITs etc.

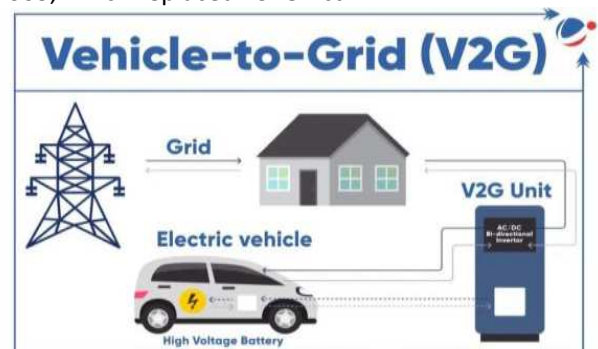
7.7.12. PRIVATE 5G

- Global mobile Suppliers Association (GSA) pegs India at the 16th position in terms of private 5G network adoption by enterprises
- **Private 5G** is also known as **captive non-public network (CNPN)**, essentially is a network that **is set up solely for a firm's own use**.
 - It is a **closed user group** not connected to any external public network.
 - It is essentially a **local area network that uses 3GPP-based network spectrum**, to create unified connectivity and a secure means of communication within a specific area.
 - A private 5G network enables enterprises to dedicate bandwidth for **high-frequency, low-wavelength airwaves**.
- **Benefits of private 5G:**
 - **Improved speeds for software flashing** - a critical operation for all vehicular dispatches.
 - **Full control** over the enterprise's operating processes.
 - **Enhanced data security:** as data is segregated and processed locally.
 - **Controlled latency:** enables near real-time communication.
 - **Customization:** Network can be optimised for specific user groups, devices or applications.
- **TRAI recommendations for Private 5G Networks:**

- **Independent Private Network:** Enterprise may request telecom service providers (TSPs) to establish it at enterprise's premises using the TSP's spectrum.
- **Direct Spectrum Acquisition:** Enterprise may obtain the spectrum directly from the government and establish their own isolated captive wireless private network.

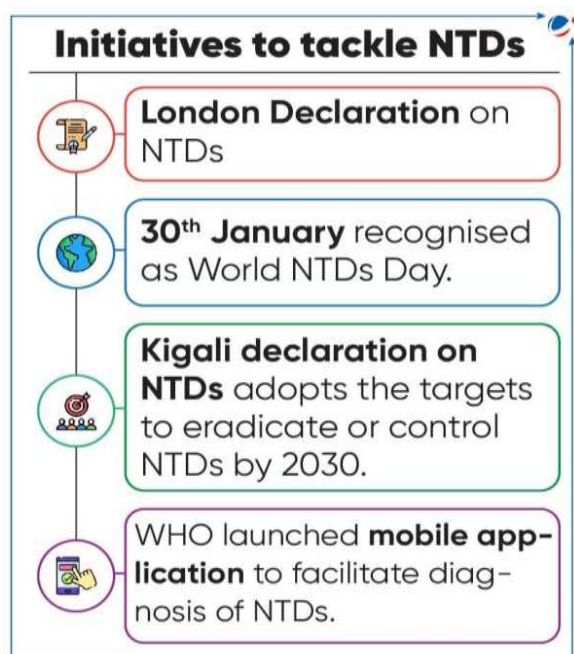
7.7.13. EV-TO-GRID CHARGING

- **Central Electricity Authority (CEA) proposed battery standardization** to boost EV-to-grid charging
- The report provides a brief overview of the services that Electric Vehicles (EV's) can provide to the power system through **smart charging**.
 - The main form of smart charging include bidirectional (sometimes referred to as **reverse charging**) vehicle-to-grid (V2G).
- **Benefits of V2G:**
 - **Flexibility in the Power System Operations:** Each EV could effectively become a microgrid-connected storage unit with the potential to provide a broad range of services to the system.
 - **Better integration of renewable energy through peak shaving:** It involves flattening the peak demand and filling the valley of demand by incentivizing late morning/ afternoon charging in systems with large penetration of solar.
 - **Other: Optimized Grid Infrastructure Requirements, etc.**
- **Recommendations:**
 - **Centralised monitoring system** for providing synergies between grid and mobility.
 - **Complement** grid charging with storage at charging points.
 - Facilitate **advanced metering infrastructure** establishments.
 - Need to be supported by policy measures such as the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme, etc.
- **CEA** is established under the Electricity (Supply) Act, 1948. It discharges functions under Electricity Act, 2003, which replaced 1948 Act.



7.7.14. WHO'S GONE INITIATIVE

- Senegal hosted first meeting of World Health Organisation's (WHO) initiative **Global Onchocerciasis Network for Elimination (GONE)**.
- GONE, launched in January 2023, empower countries to **accelerate progress towards onchocerciasis targets set in 2030 Neglected Tropical Disease (NTD) roadmap of WHO**.
- **Onchocerciasis**, commonly known as "river blindness", is caused by **parasitic worm Onchocerca volvulus** that spreads by the bites of **infected black flies** that **breed in rapidly flowing rivers**.
 - It is the **second leading infectious cause of blindness** after **trachoma**.
 - **Symptoms**: Intense itching, rashes, skin discoloration, visual impairment and permanent blindness.
 - **Africa is home to 99% of people at risk of onchocerciasis**; the remaining 1% lives on border between Brazil and Venezuela.
 - **Colombia, Ecuador, Guatemala and Mexico** have been **verified by WHO** for **eliminating transmission of disease**.
- NTDs are a **diverse group of 20 conditions** that are mainly **prevalent in tropical areas**, where they affect more than **1 billion people** who live in **impoverished communities**.
 - **Caused by a variety of pathogens** including viruses, bacteria, parasites, fungi and toxins.
 - **NTDs include**: Dengue and chikungunya, Rabies, leishmaniasis; leprosy; lymphatic filariasis etc.
 - **India has successfully eliminated certain NTDs** like guinea worm, trachoma, and yaws.



7.7.15. FOOD FORTIFICATION

- **FSSAI operationalised provisions of Draft Food Safety and Standards (Food Product Standards and Food Additives) amendment regulations**.
- **Draft amendment was notified** by Food Safety and Standards Authority of India (FSSAI) **under Food Safety and Standards Act 2006**.
- Now **provisions of draft related to limits of micronutrients** in vitamin and mineral premix for **manufacturing of fortified rice kernels (FRKs)** have been operationalised (refer to the table).
 - This will **strengthen the national fortification programme**.
- **Fortification** is addition of **key vitamins and minerals** to staple foods such as rice, wheat, oil, milk and salt to **improve their nutritional content**.
 - **Rice fortification** refers to **adding FRK-containing FSSAI-prescribed micronutrients** (Iron, Folic Acid, Vitamin B12) to **normal Rice** (Custom Milled Rice) in the **ratio of 1:100**.
 - **coating, extrusion and dusting** are **key technologies** for rice fortification.
 - In **India, extrusion technology** is employed, where **milled rice is pulverized** and **mixed** with a **premix containing vitamins and minerals**.
- **Benefits**: Fortification is a cost-effective method for **combating malnutrition**.
- **Key initiatives**
 - **Distribution of fortified rice under**
 - ✓ **Saksham Anganwadi and Poshan 2.0**
 - ✓ **Centrally sponsored pilot scheme** on "Fortification of Rice & its Distribution under Public Distribution System.
 - **'F' logo** by the FSSAI to **identify fortified foods**.
- **Key issues**: Fortified rice could be **harmful to people suffering from thalassemia and sickle cell anaemia**.

Limits of Micronutrients in Vitamin and Mineral premix for manufacturing of fortified rice kernels (FRKs)	
Micronutrient	Composition (per 100g of Vitamin and mineral premix)
Iron	8-20g/100g
Vitamin B9 (folic acid)	45-55mg/100g
Vitamin B12 (Cynocobalamine)	0.45-0.55mg/100g

7.7.16. AMYLOIDOSIS

- Scientists have fabricated **2D protein monolayer** that can help to **study diseases like Amyloidosis**
- **Amyloidosis is a rare disease** characterised by a **buildup of abnormal amyloid deposits** in the body
 - **Amyloid** refers to the **abnormal fibrous, extracellular, and proteinaceous deposits** that can be found in the heart, brain, kidneys, spleen and other parts.
- **Symptoms:** Tiredness, weight loss, numbness, increased tongue size etc.
- As per WHO, a **Rare disease** is a debilitating lifelong disease or **disorder with a prevalence of 1 or less per 1000 population**

7.7.17. AYURVEDA GYAN NAIPUNYA INITIATIVE (AGNI)

- **Central Council for Research in Ayurveda Sciences (CCRAS) launched Ayurveda Gyan Naipunya Initiative (AGNI).**
- AGNI aims to **promote research** for mainstreaming the **pragmatic Ayurveda practices** through **scientific validation and evidence-based appraisal**.
 - Ayurveda is part of the **AYUSH**.
 - **AYUSH** include **Indian systems of medicine** and **Homoeopathy**.
 - ✓ **Indian systems of medicine also include Yoga & Naturopathy, Unani, Siddha, and Sowa Rigpa.**
- It will provide a **platform to Ayurveda practitioners** for reporting their **innovative practices and experiences** in various disease conditions.
 - These **practices and experiences** will be documented and **published by CCRAS** for education and academic purposes.
 - ✓ For this, it will cooperate with **NCISM (National Commission for Indian System of Medicine)**.
 - ✓ **NCISM** is a **statutory body**, constituted under NCISM Act, 2020.
- **Need of AGNI:**
 - Ayurveda practice requires a **rigorous evidence-based appraisal**.
 - ✓ Scientific validation and the documentation are essential for **global acceptance**.
 - ✓ It can be leveraged as a **soft power**.
 - **Dissemination of innovative ayurvedic practices** for disease management.
- CCRAS is an **apex research organization** and it is committed for undertaking, coordinating, formulating, development and promotion of **research on scientific lines in Ayurveda**.

- It works under the **Ministry of AYUSH**.



7.7.18. GLOBAL TUBERCULOSIS (TB) REPORT

- **World Health Organisation released Global Tuberculosis (TB) Report, 2023.**
- **Key findings: Global**
 - Reported global number of **people newly diagnosed with TB** was **7.5 million in 2022**.
 - **TB remained the world's second leading cause of death** in 2022 after COVID-19.
 - **Net reduction** of TB incidence from 2015- 2022 was **8.7% far from WHO End TB Strategy milestone of 50% reduction by 2025**.
 - Only about **2 in 5 people with drug resistant TB** accessed treatment in 2022.
- **India's findings**
 - **India, Indonesia and Philippines** collectively account for **nearly 60% of reduction in number of people newly diagnosed with TB** in 2020- 2021.
 - India has **27% of world's TB cases**.
- TB is caused by **bacillus Mycobacterium tuberculosis** which most often **affects lungs (pulmonary TB)**.

- Most common medications to treat TB include **isoniazid, rifampin, ethambutol, pyrazinamide** etc.
- Currently, **Bacille Calmette-Guerin** is **only licensed vaccine** available for TB prevention.
- Spreads from **person to person** through air.
- **TB Risk factors:** Diabetes, HIV infection, Undernutrition, tobacco use.
- **Steps taken to prevent Tuberculosis**
 - **National Strategic Plan for Tuberculosis Elimination 2017-2025.**
 - TB Mukh Panchayat Abhiyan Initiative.
 - **Nikshay Poshan Yojana** for nutritional support to TB patients.

Drug-Resistant TB

- **Multidrug Resistance TB (MDR):** Resistant to at least **isoniazid and rifampicin**.
- **Extensively drug-resistant tuberculosis (XDR-TB):** Resistant to **isoniazid and rifampin**, plus any fluoroquinolone and at least one of three injectable second-line drugs.
- **Totally drug-resistant tuberculosis (TDR-TB):** Resistant to **all first- and second-line TB drugs**.

7.7.19. CHIKUNGUNYA

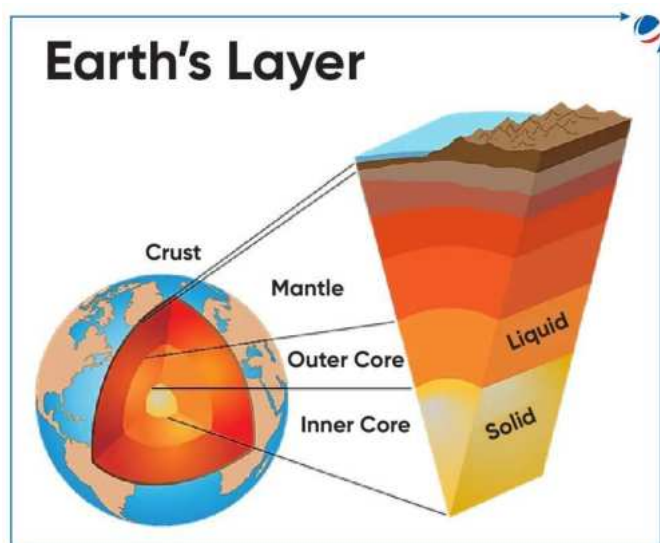
- US. has approved **world's first vaccine** for chikungunya named **Ixchiq**. It contains **live, weakened version of the chikungunya virus**.
- **Chikungunya**
 - It is a **viral disease** transmitted by **Aedes mosquitoes**.
 - **Fever, arthralgia and rash** are common symptoms.
 - **First identified in Tanzania in 1952**, and generally seen in **Africa, southeast Asia and parts of Americas**.
 - It can be **passed from a pregnant mother to an unborn child** and can be fatal to newborns.
 - So far there is **no treatment**.
 - It is included in India's **National Vector Borne Diseases Control Programme**.

7.7.20. CERVAVAC VACCINE

- A study in Lancet Oncology reveals that the **Cervavac vaccine** by the Serum Institute of India elicits a comparable immune response to **Merck's Gardasil vaccine**.
 - Cervavac is India's **first indigenous quadrivalent HPV vaccine** for the prevention of cervical cancer and other HPV-associated cancers.
 - HPV is a **major cause** of cervical cancer.
- **Cervical cancer** is the second most common cancer among women in India, accounting for about a fifth of the global burden of cervical cancer.

7.7.21. E PRIME LAYER

- As per new study, a new layer called **"E prime layer"** at the **outermost part of Earth's core** is a result of surface water penetrating deep into the planet
 - This **alters the composition of the metallic liquid** core's outermost region proposes.
- This latest research suggests that **tectonic plates carrying surface water** have transported it deep into the Earth over billions of years.
 - This led to the **formation of a hydrogen-rich, silicon-depleted layer** at the outer core.
- **Discovery** enhances our comprehension of **Earth's internal mechanisms**.



7.7.22. WHITE HYDROGEN

- Scientists have **discovered a large reservoir of white hydrogen** in France.
- **White hydrogen**, also referred to as **"natural," "gold" or "geologic" hydrogen**.
- It is **naturally generated within the Earth's crust** through water-rock reactions.
 - Process involves **interactions between water molecules and iron-rich minerals, such as olivine**, at high temperatures and pressures.
- **Potential Applications:** in industries like aviation, shipping, and steel production.

7.7.23. NITROGEN-9

- Scientists have recently **discovered nitrogen-9 nuclei** which contains 7 protons and 2 neutrons.
- It is an **unusually high proton-to-neutron ratio**.
 - This **disparity has a critical effect on the isotope's stability**, influencing its decay processes as well as overall behaviour.
- It only **exists for one billionth of a nanosecond**.

- Nitrogen -9 is an **isotope of nitrogen**.
 - **Atoms with the same number of protons** but different numbers of neutrons are called isotopes.
- Scientists are hopeful of **expanding our current understanding of nuclear theory and quantum mechanics** by this study.

7.7.24. VITRIMER INCORPORATED WITH POLYROTAXANE (VPR)

- Scientists in Japan have developed a new version of plastic called **VPR** which is **based on an epoxy resin vitrimer**.
 - Vitrimers are **recent category of plastics** known for

strength at low temperatures and reshaping under heat.

- However, they **tend to be very brittle**.
 - ✓ To **overcome** this, researchers **added polyrotaxane to the plastic-making process** which resulted in VPR.
- **About VPR:**
 - **Stronger and stretchier** than the traditional version.
 - **Partially biodegradable**.
 - It can **remember complex shapes** which can be **restored once it is heated**.



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8. CULTURE

8.1. SANT MEERA BAI

Why in the News?

The 525th birth anniversary of **Sant Meerabai** was recently celebrated in Mathura, Uttar Pradesh.

About Sant Meera Bai (1498-1546)

- Meerabai was a **great Bhakti saint**, Hindu mystic poet and a devotee of the Lord Krishna.
- **Early life**
 - She was born as **Princess of Mewar** and her childhood name was **Yashodha**.
 - In **1516**, Meera Bai married to **Rana Bhoj Raj** the crown **prince of Mewar** who was the **son the Rana Sanga**.
 - ✓ **Rana Sanga** is famous for his leadership in the **Battle of Khanwa (1527)**, where he led the Rajput alliance against Mughal Emperor Babur.
 - After the death of Bhoj Raj in **1521**, she **left Mewar in search of lord Krishna**.
- **Life as a saint**
 - She moved to multiple places including **Brindavan** and in her later years she moved to **Dwarka**.
 - She followed **Saguna bhakti** and considered Lord Krishna as her **husband** since her childhood.
 - She addresses Lord Krishna as **Giridhar Gopal**.
- **Major works**
 - Meerabai's poetry portrays a unique relationship wherein she is not only the **devoted bride of Krishna**, but **Krishna is ardent in his pursuit of Mira**.
 - One of her celebrated songs is "**Paayoji maine Ram Ratan dhan paayo (today I got the most precious wealth of Lord Rama's name)**".
 - **Meerabai's poems in Braj language**, sung during prayers and expressing emotions to Lord Krishna, make up her poetry collection.
 - ✓ These include **Raag Govind, Narsi Ji Ka Mayara, Geet Govind ki Tika, Meera Bai ki Malhar, Raag Vihaag and Garba Geet**.
 - ✓ Some of her bhajans **translated into English** by **Robert Bly and Jane Hirshfield** as '**Meerabai: Ecstatic Poems**'.
 - **Bhaktmal**, a poetry collection that describes the biography of Meera Bai, is **written by Guru Nabha Dass ji** in 1585 in **Braj language**.
- **Social Reforms**
 - She became a disciple of **Sant Ravidas** (also known as **Raidas**) who belonged to a caste considered "**untouchable**".
 - Her songs also openly **challenged the norms of the upper castes** and became popular with the masses in Rajasthan and Gujarat.
 - She **rejected traditional women's roles and societal norms** by leaving palace and choose to become wanderer.



Conclusion

Sant Meerabai, a symbol of divine love, has inspired generations with her songs, and her devotion continues to influence people to embrace spiritual values.

About Bhakti Movement

The Bhakti movement originated in South India between the **7th and the 12th centuries A.D.** Saint believed in the **equality of all humans**, disregarding caste distinctions.

Bhakti movement in different regions

- **South India**
 - Initially led by the **Alvars** (Devotees of Lord Vishnu) and **Nayanars** (devotees of Lord Siva).
 - ✓ They connected with masses through use of **local language**.
 - **Nayanars**: Devotees of **Lord Siva**, were sixty-three in number. Famous saints were **Appar, Sundarar, Thirugnana Sambandar and Manickavachakar**.

- **Alvars:** Devotees of **Lord Vishnu** who were twelve in number. Famous saints were **Nammalwar, Tirumangai Alwar, Andal and Perialwar**.
 - ✓ The **devotional songs of Andal** are called **Thiruppavai**.
 - ✓ **Alvars** songs were compiled in the **Divya Prabandham**.

- **Central and North India**

- From South Bhakti movement spread to **central and North India around 13th century** and saw a new wave of the bhakti movement in north.
- Bhakti traditions into two broad categories:
 - ✓ **Saguna:** Worship of **God with attributes** or form. Example: Tulsidas, Meera Bai, etc.
 - ✓ **Nirguna:** Worship of the **Formless form of God**. Examples: Kabir Das, Guru Nanak Dev, etc.

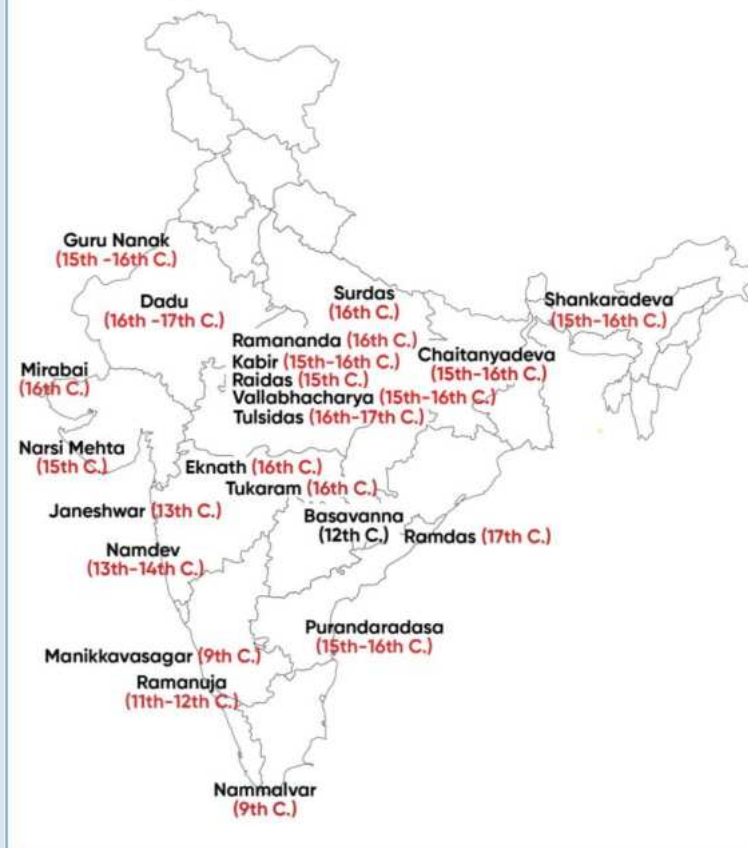
- **Maharashtra**

- From the **thirteenth to the seventeenth centuries** Maharashtra saw a great number of saint-poets who composed poems in **Marathi language**.
- Region focused on the **Vitthala** (a form of Vishnu) **temple in Pandharpur** and followed **Warkari tradition**.
- Famous saints- **Janeshwar, Namdev, Eknath** and **Tukaram** as well as women like **Sakkubai** and the family of **Chokhamela**, who belonged to the “**untouchable**” Mahar caste.
- These saint-poets **rejected all forms of ritualism**, outward display of piety and **social differences based on birth**.

- **East and North East**

- **Neo-Vaishnavite Movement** was propagated by **Śaṅkaradeva** in **Assam region**.
- **Chaitanya mahaprabhu**, a great **devotee of Lord Krishna**, was a saint from **Bengal**. He popularised ‘**Sankritan**’ or public singing of God’s name.

Bhakti Saints and the regions associated with them



8.2. KAZI NAZRUL ISLAM

Why in the News?

The re-tuning of Kazi Nazrul Islam’s 1922 anti-British anthem **Karar Oi Louho Kopat** (Iron bars of a jail) for a film has led to widespread criticism in Bangladesh.

About Kazi Nazrul Islam (1899-1976)

- **Childhood and Early Life**

- Born in **Churulua village, Burdwan** (now Bardhaman) district of **West Bengal**.
- In 1917, he joined the **Indian Army** as a soldier and later on became **Battalion Quarter Master (Havildar)**.

- He is popularly known as the **Bidrohi Kobi** (Rebel Poet), as many of his works rebelled against oppression of humans through slavery, hatred and tradition.

- He wrote and composed more than **2000 songs** which are popularly known as ‘**Nazrul Geeti**’.

- **Major Works:**

- In 1919, he published his first piece, ‘**The Autobiography of a Delinquent**’ or ‘**Saogat**’, while serving in the army.
 - ✓ Nazrul left the military in 1920 and then joined the ‘**Bengali Muslim Literary Society**’.
- He is famous for his works like **Bandhan-hara** (Freedom from bondage), ‘**Bodhan**’, ‘**Shat-il-Arab**’, ‘**Badal Prater Sharab**’, etc.

Kazi Nazrul Islam



- He created his famous poem '**Anondomoyir Agomone**' in **1922**, for which he was sent to prison for one year by the British authority.
- In 1930 **his book Pralayshikha was banned** and he faced charges of **sedition**. He was sent to jail and released after the **1931, Gandhi-Irwin Pact was signed**.
- **Role in National movement**
 - He motivated people to **fight against the British** through his poems, plays, etc.
 - He took an active part through his writings on **Swadishi and Khilafat movement**.
 - He organized the **Sramik Praja Swaraj Dal (Workers and Peasant Party)**.
 - ✓ **Sramik Praja Swaraj Dal**, a socialist political party which worked within the **Indian National Congress (INC)**.
 - He became critic of the "**Khilafat**" **struggle** and the **INC** for not bargaining political independence from the British Empire.
- **Hindu Muslim Unity**: During Hindu-Muslim riots in Calcutta in 1926, he called for Hindu-Muslim unity and criticises attempt perpetuated by some individuals from both communities to construct their respective oppositional identities.
- **Awards & Achievements**
 - In 1960, he was awarded the **Padma Bhushan**, one of the highest civilian honors of the Republic of India.
 - He was conferred the title of '**national poet**' and awarded the '**Ekushey Padak**' by the **Bangladesh**.
 - ✓ '**Ekushey Padak**', the second-highest civilian award of the Bangladesh.

Conclusion

Kazi Nazrul Islam, renowned for his work in Bengali literature, has been declared the '**National Poet of Bangladesh**'. His works have played a significant role in fostering patriotism and a sense of cultural belonging among the youth. Furthermore, his contributions serve as a cultural bridge between India and Bangladesh, strengthening the bonds of friendship and mutual respect between the two nations.

8.3. SHARDA TEMPLE

Why in the news?

Navratri puja was held at the newly built Sharda Devi Temple close to the Line of Control (LoC) in Teetwal village in the Kupawara district of Jammu and Kashmir.

More in news

- Earlier this year, **Maa Sharda temple was opened** at Teetwal in the frontier district of Kupwara near the **LoC** on **one of the base camps** en route to the **traditional Sharda Peeth in the Neelam Valley of Pakistan-occupied Kashmir**.

About Sharda Devi Peeth

- Sharada Peeth was **one of the three principal shrines** of the region, along with the **Martand Sun Temple** and the **Amarnath Temple**, before the Partition of India and Pakistan.
- The temple has a **close resemblance with the Martand temple** in architecture, design and construction style.
- **Al Beruni** famous scholar and traveller **described the temple** as a **much-venerated site of pilgrimage**.
- Previously, the **Pakistani government sanctioned a plan to create a corridor** facilitating the visit of **Hindu pilgrims from India to Sharada Peeth**.
 - Once operational, the Sharada Peeth corridor will become the **second religious passage in territory controlled by Pakistan, following the Kartarpur corridor**, connecting the two neighbouring nations.

Significance of Sharda Peeth

- **Religious significance**: It is also one of the **18 Maha Shakti Peethas**, or a "**Grand Shakti Peethas**" and is considered to be the **abode of Hindu Goddess Saraswati**.
 - **Goddess Sharada**, the goddess of learning and knowledge, is regarded by Hindus as an **incarnation of the goddess Saraswati**.
 - Goddess Sharada is **considered by Kashmiri Pandits as their kuldevi** (principal deity). She is also referred to by many as **Kashmira Puravasini** (resident of Kashmir).



- **Educational significance:** The peeth was also one of the **universities of higher learning of Vedic works, scriptures, and commentaries**. It was at par with the ancient seats of learning at Nalanda and Takshila.
 - It is believed that Sharda University had a **script known as Sharada**.
 - The university also had **over 5,000 scholars and the biggest library**.
 - **Renowned scholar Adi Shankaracharya** is said to have **studied at Sharada University**.
 - **Ramanujacharya**, one of the most important exponents of the Sri Vaishnav tradition is also **believed to have visited Sharada Peeth & written his treatise, Sri Bhasya**.

8.4. NATIONAL GAMES OF INDIA

Why in the news?

Recently, 37th edition of National Games concluded in Goa.

About National Games

- The National Games of India is an **Olympic-style multi-sport event** where athletes from the various states and Union Territories of India compete for medals.
 - **Services Sports Control Board (SSCB)**, the sports team of the **Indian Armed Forces**, also competes at the National Games.
- The duration and the regulations of the National Games are entirely within the jurisdiction of the **Indian Olympic Association**.
- **About National Games:**
 - 1st edition of the **Indian Olympic Games** (former name of National Games) at Lahore in an undivided Punjab in **1924**.
 - After the eighth edition in **1938** in **Calcutta**, the event was christened as the **National Games**.
 - **Lucknow hosted the National Games** in its first post-independence avatar.
 - The first **National Games on the lines of the Olympics** were held in **1985** in **New Delhi**.
- **About 37th edition of National Games**
 - The **Raja Bhalendra Singh trophy** was given to Maharashtra for overall championship in national games.
 - ✓ Raja Bhalendra Singh was considered responsible for bringing the **9th Asian Games to Delhi** in **1982** and organizing them.
 - Best woman athlete trophy was given to **Pranati Naik and Sanyukta Kate** while best man athlete trophy was given to **Shrihari Natraj**.
 - The **torch** for national games was handed over to **Uttarakhand** as **38th National Games** will be organized there.
 - ✓ The **39th edition will be held in Meghalaya**.



8.5. GEOGRAPHICAL INDICATIONS(GI) TAGS

Why in the News?

Various products from Uttarakhand have been given the GI tag by the Geographical Indications Registry.

About Geographical Indication (GI) tags

- A **GI** is a sign used on products that have a **specific geographical origin and possess qualities or a reputation that are due to that origin**.
 - In order to function as a GI, a sign must identify a product as **originating** in a given place.
- GIs are part of the **intellectual property rights** that comes under the **Paris Convention for the Protection of Industrial Property**.
 - They are also covered under Articles 22 to 24 of the **Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement**, which was part of the Agreements concluded in the Uruguay Round of GATT negotiations.
- In India, GI registration is administered by the **Geographical Indications of Goods (Registration and Protection) Act of 1999**.
- **GI can be registered:** On agricultural products, foodstuffs, wine and spirit drinks, handicrafts, and industrial products, etc.

- **Duration:** Once a product has been granted a GI tag, it is **valid for a period of ten years**.
 - Renewal is possible for further periods of **10 years each**.
- **Nodal Ministry:** Department for Promotion of Industry and Internal Trade, **Ministry of Commerce and Industry**.
- **Significance:** Confers legal protection against unauthorised use, boosts exports, etc.

Description of the Newly Awarded GI Tags

GI Tag	Key Features
 <p>Uttarakhand Berinag Tea</p>	<ul style="list-style-type: none"> ➤ It is made from the leaves of a plant that grows wild in the Himalayas. ➤ Berinag Tea is known for its Taste, texture flavor, aroma and color. ➤ Berinag gets its name from the Berinag Temple (called 'Bedinag' locally), which is a Nag Devta Temple situated at the top of Berinag Hill. ➤ It is graded & packed in local Tea gardens of Pithoragarh district of Uttarakhand.
 <p>Uttarakhand Bichhu Buti (Nettle) Fabrics</p>	<ul style="list-style-type: none"> ➤ It is made from Himalayan nettle fibres. ➤ As the plant's fibres are hollow, they have the unique ability to accumulate air inside, thus creating a natural insulation and making an ideal clothing material for both winters and summers. ➤ It is a high fibre yielding plant, found abundantly from the Garhwal region of Uttarakhand. ➤ It is a perennial and insect resistance crop.
 <p>Uttarakhand Mandua</p>	<ul style="list-style-type: none"> ➤ It is a finger millet grown in Garhwal and Kumaon that is part of the staple diet in many parts of the State. ➤ It is a super-cereal. It consists of high dietary fibers, proteins, iron, calcium, antioxidants, essential amino acid, vitamins, and essential nutrients. ➤ It can be easily cultivated using the organic farming. ➤ It is grown both for grain and forage.
 <p>Uttarakhand Jhangora</p>	<ul style="list-style-type: none"> ➤ A home grown millet commonly cultivated in the rain-fed areas of the Himalayas in Uttarakhand. ➤ It is one of the oldest food known to mankind in the lush Himalayan valleys of Uttarakhand, The Jhangora is a grain with a superb nutrition profile. ➤ It is one of the major crops grown in the Kumaon and Garhwal regions of Uttarakhand Himalayas. ➤ It is high on calcium and fibre contents and it helps to control the blood pressure and sugar levels.
 <p>Uttarakhand Gahat</p>	<ul style="list-style-type: none"> ➤ Pulses growing in the dry regions of the State. ➤ Its medicinal uses have been known to Ayurveda and traditional physicians for centuries. ➤ It is rich in fiber, iron, calcium, minerals and vitamins. ➤ It is anti-bacterial, anti-fungal and anti hypoglycemic and densely rich in antioxidants.



Uttarakhand Lal Chawal (Red Rice)

- ▶ A red rice organically grown in the **Purola region**.
- ▶ It is also good for the heart and useful in diabetes.
- ▶ This extremely **nutritious rice** comes with a firm texture and a nutty flavour.
- ▶ The **heavy rain in the high altitude Himalayan valleys** is partly responsible for its firm texture and interesting flavour.



Uttarakhand Kala Bhat

- ▶ It is traditionally cultivated under “**Barah-anaja**” **system of cultivation (upto 12 crops grown together)** where in varieties of millets, beans, pulses and cereals are cultivated in the same field under rain-fed conditions.
- ▶ It is **one of the richest sources of flavones** in the human diet.
- ▶ Kala Bhat’s curative powers and its iron and protein content makes it an excellent meat substitute for the vegetarian people.
- ▶ Kala Bhat contains **starch**, a form of complex carbohydrate.



Uttarakhand Malta Fruit

- ▶ Malta fruit is an important seasonal citrus fruit.
- ▶ **Districts-** Chamoli, Pithoragarh, Rudraprayag, etc.
- ▶ **Chamoli** is among the few places in the country which has a high genetic diversity of Malta fruits.
- ▶ Malta fruit is a **Sweet, brightly colored fruit** that brings a burst of sunshine into winter days.



Uttarakhand Chaulai (Ramdana)

- ▶ It is a **pseudo-cereal**.
- ▶ In Uttar Pradesh it is called “**Chaulai**”. It is also known as “**Chua**” in Kumaun area of Uttarakhand.
- ▶ Chaulai crops are **drought-tolerant** and possess tolerance to **salinity, alkalinity, or acidic soil conditions**.
- ▶ Chaulai is a **protein and fiber rich grain** with high micronutrients and antioxidants content.



Uttarakhand Buransh

- ▶ **Burans**, is the bright red flower whose scientific name is **Rhododendron arboreum** is the state flower of Uttarakhand.
- ▶ Buransh plant possesses high ecological importance and the flower of the species having **unique medicinal and nutritional value**.
- ▶ Buransh flowers contain **anthocyanins** (a class of water-soluble flavonoids) and **flavonols** (possess numerous health benefits) as the major pigments.
- ▶ Buransh juice is a complete natural drink (sharbat) with excellent medicinal value.



Uttarakhand Pahari Toor Dal

- ▶ Due to their full **organic characteristic** and taste, it is highly demanded in the market and much different in the color of the plain area Arhar.
- ▶ **Toor (Pigeonpea)**, is a good source of home-grown high protein food.
- ▶ Toor is a **short-lived perennial shrub** that is traditionally cultivated in Uttarakhand.
- ▶ It is an important legume crop of Uttarakhand.



Uttarakhand Likhai (Wood Carving)

- Likhai is a **building craft** and is situated in a construction method of using local resources and materials in Kumaon.
- The carving is generally found in the form of **folks, religious, and tantric motifs**.
- Likhai wood craft of Uttarakhand is especially found in the **building and temple architecture**.
- The wood carving of **Garhwal & Kumaon** is famous for its simple and beautiful designs.



Nainital mombatti (Candle)

- They are **hand carved** and filled with multicolor waxes.
- These natural flower candles are widely known for its **durability and quality**.
- The decorative candle art in Nainital has a **cultural legacy** because of the presence of the Britishers in large numbers in the region.
- People involved in candle making are known as **Chandler**.



Rangwali Pichhoda of Kumaon

- Pichhoda is made of **yellow fabric** with big red circular motifs printed on it.
- In the center, a **Swastik** is drawn and in the four quadrants of the Swastik, Sun, **Shankh (Conch Shell)**, **A Bell with Om** and **Goddesses** are drawn.
- It is a traditional outfit worn by women at ceremonies in Kumaon region of Uttarakhand. It plays a vital role in the life of **married women**.
- The designs were collected from various sources like **books, internet and newspapers**.



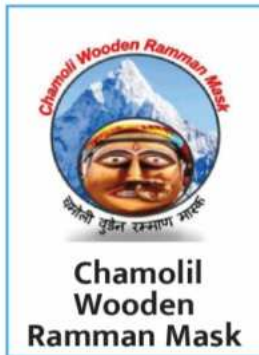
Ramnagar nainital litchi

- Ramnagar Litchi is usually known as **Pearl of India**.
- Litchi is a **sub-tropical** fruit and thrives best under moist sub-tropical climate.
- Deep, well drained loamy soil, rich in organic matter and having pH in the range of 5.0 to 7.0 is ideal for the crop.
- Frost during winter and **dry heat** in summer are limiting factors for its successful cultivation.



Ramgarh nainital aadu (Peach)

- Ramgarh Aadu (Peach) is an important **stone fruit crop** of the temperate zone.
- High quality peaches are produced in higher hills.
- Ramgarh Peach is basically a **temperate zone plant** and its commercial production is confined between the latitude of **30 and 40° N and S**.
- The harvest time period of peach ranges from **April-July**.



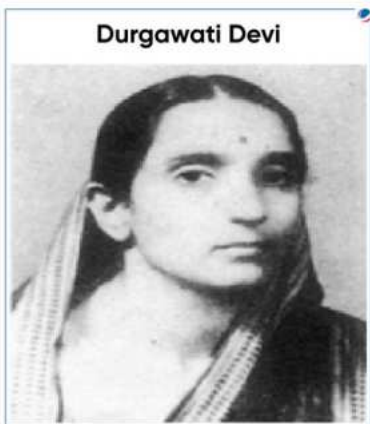
- ▶ Ramman is a religious festival and ritual theatre of the **Garhwal region in India**.
- ▶ It is a festival based on the **epics of Ramayana** of the Hindu community Chamoli district of Uttarakhand.
- ▶ The process of making masks is considered **sacred by the artists**, as they bring to life the mythological gods and goddesses.
- ▶ After each mask is completed, the artisan offers food and prayer to the mask.



- ▶ It was first grown in a village called **Lakhora** situated on the **Garhwal and Kumaon** border of Uttarakhand.
- ▶ It is low in **saturated fat, cholesterol and sodium**.
- ▶ It is high in **Vitamin A, C, K, B6**, Potassium, Copper, Manganese, dietary fiber, Thiamin, etc.
- ▶ The pungency, **yellow color, and oleoresin contents** in Lakhori Mirchi are especially important for processed food as well as for export purpose.

8.6. NEWS IN SHORTS

8.6.1. DURGAWATI DEVI (1907 - 1999)




- Recently, the birth anniversary of Durgawati Devi popularly known as **Durga Bhabhi or Agni of India** was celebrated.
- She was married to **Bhagwati Charan Vohra**, an Indian revolutionary associated with the **Hindustan Socialist Republic Association (HSRA)**.
 - Bhagwati Charan Vohra was the **author of the famous article** titled **The Philosophy of Bomb** in which he persuaded youth to come forward and join revolutionaries.
 - He died when a testing bomb exploded in his hand.
- **Contribution to the Indian Freedom Movement**
 - **Durga Bhabhi** was an active member of the **Naujawan Bharat Sabha** (founded by Bhagat Singh in 1926).

- She **assisted in the escape of Bhagat Singh** from Lahore after the Saunders killing (1928).
- She openly opposed the sentence awarded to Bhagat Singh, Sukhdev and Rajguru.
 - ✓ As an act of revenge, **Durga Bhabhi** decided to **kill Lord Hailey (ex-Governor of Punjab)**, who was also a staunch enemy of the revolutionaries.
 - ✓ While the Governor managed to evade the attack, his aides sustained injuries. Subsequently, she was arrested and sentenced to three years of imprisonment.
- After independence she **opened a school for poor children in Lucknow**.


8.6.2. UNESCO CREATIVE CITIES NETWORK (UCCN)


- **Gwalior, Kozhikode** joined the UNESCO Creative Cities Network (UCCN)
- They are among the **55 cities that joined UCCN on World Cities Day (31st of October)**.
- New cities were acknowledged for their strong commitment to **harnessing culture and creativity as part of their development strategies**.
- **Kozhikode ('City of Literature')**
 - It has a robust literary foundation with **over 500 libraries and more than 70 publishers**; It also boasts a high level of literary education.
 - It is also a **permanent venue for the annual Kerala Literature Festival** and numerous book festivals.


- **Gwalior ('City of Music')**
 - It has a rich musical history **encompassing legends like Mian Tansen (Ramtanu Pandey) and Baliti Bawra.**
 - It is also considered the **birthplace of Gwalior Gharana** (the oldest Hindustani musical Gharana).
- **Other Indian cities on UCCN:** Mumbai (Film), Chennai (Music), Hyderabad (Gastronomy), Varanasi (Music), Jaipur (Crafts and Folk art) and Srinagar (Crafts and Folk art).
- **About UCCN**
 - It was **created in 2004.**
 - The **UCCN tag** gives **global recognition and boosts tourism.**
 - It has **350 creative cities in more than 100 countries, spanning seven creative fields:**
 - ✓ Crafts and Folk Art, Design, Film, Gastronomy, Literature, Media Arts, and Music.





United Nations
Educational, Scientific
and Cultural Organization



Paris, France

 **Genesis:** Established in 1945.

 **Objective:** To contribute to the building of a culture of peace, the eradication of poverty, sustainable development, and intercultural dialogue through education, the sciences, culture, communication, and information.

 **Members:** 194 Members and 12 Associate Members.

Is India a Member 

 **Other Initiatives:** The Universal Copyright Convention (1952); Man and the Biosphere program (1971); World Heritage Convention (1972); Convention for the Safeguarding of the Intangible Cultural Heritage (2003).

8.6.3. PANAMALAI PAINTINGS (TAMIL NADU)

- 1,300-year-old paintings at **Talagirishwara temple** are **fading**, as per reports.

- The painting shows Lord Shiva with eight hands dancing, known as **Latathilagabhani**, being watched by Goddess Parvathi.
- These **mural paintings** were created after covering stonewalls with a **paste made of limestone and sand.**
- The paintings bear a close **resemblance to paintings in Ajantha and Chithannavasal.**
- The temple was constructed by **Pallava king Narasimhavarmam II**, popularly known as Rajasimha.
- Rajasimha's **Sanskrit epigraphs** are found here.

8.6.4. KOLKALI DANCE

- Recently, Kolkali dance was performed in Thrissur, Kerala in remembrance of **St. Thomas' arrival** in India.
- **About Kolkali Dance**
 - Folk art form, performed in **North Malabar region of State.**
 - ✓ It is referred to as **Kolattam** and **Kolamu** in Tamil Nadu and Andhra Pradesh, respectively.
 - It draws elements from **Kalaripayattu**, a martial art of Kerala and Tamil Nadu.
 - Each performer holds a stick and moves in a circle, striking the sticks.
 - ✓ As music gradually rises in pitch, the **pace increases, and the circle expands and contracts** as the dance progresses.
 - It is performed during the paddy harvest season.

8.6.5. VAJRA MUSHTI KALAGA

- "Vajra Mushti Kalaga" is a **form of wrestling** different from conventional grappling and entails two **jettys (fighters).**
- Wrestlers use '**Vajramushti**', **knuckle-dusters adorned with diamonds** as a mark of weaponry to engage in immaculate battle.
 - **Whosoever draws the blood from the opponent's head first** is declared the **winner.**
- It is held on the **ninth day of Navaratri at the Mysuru Palace (Mysore, Karnataka).**
- It was **first mentioned in Manasollasa**, a manual of warfare of King Someshwara III of the Chalukya dynasty (1124–1138).
- **Fernano Nuniz**, a Portuguese traveller noticed this form of wrestling in Vijayanagar empire.

8.6.6. SEA BUCKTHORN



- **Sea buckthorn fruit** from Ladakh has been awarded a Geographical Indication (GI) tag.
- **It is the fourth GI tag in Ladakh**, after Apricot (Raktsey Karpo), Pashmina, and Ladakhi Wood Carving.
- **About Sea buckthorn**

- Sea buckthorn (*Hippophae rhamnoides*) is a plant found **throughout Europe and Asia**.
- In India, it is found above the **tree line in the Himalayan region**, generally in dry areas such as the cold deserts of Ladakh and Spiti.
- The GI tag is regulated by the **Geographical Indications of Goods (Registration and Protection) Act of 1999**.

8.8.7. ERRATA

In **September 2023 Monthly Magazine**, under **Article 8.4 Santiniketan**, it was incorrectly mentioned that Tagore composed Vande Mataram (national song of India).

Correct information is 'Jana Gana Mana' (National Anthem of India) was **composed by Rabindranath Tagore**. Bankim Chandra Chatterjee composed Vande Mataram (National Song of India).

 <p>SMART QUIZ</p>	<p>You can scan this QR code to practice the Smart Quiz of Culture at our open test online platform for testing your understanding and recalling of the concepts.</p>	
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9. ETHICS

9.1. KNOWLEDGE WITHOUT CHARACTER

Introduction








'Dark web used for activities like illegal drug trafficking', 'Deadly weapons are being used in Ukraine-Russia and Israel-Palestine conflict', these instances alongside countless others highlight how **Knowledge without Character (moral values) can be detrimental**.

Only **intellectual development** without simultaneous **internal character development** rarely contributes to the welfare of society. A Person is said to have character if he/she has moral values such as integrity, altruism, generosity, compassion etc.

Meaning of Quote From Mahatma Gandhi's Perspective

Quote is part of Gandhi Ji's explanation on Seven Social Sins. He knew that knowledge is more powerful than lethal weapons. Due to this, he emphasised that to use **knowledge in the right direction** there is a requirement of **good character**. But, **knowledge coupled with a weak character can be disastrous** as we have seen in the past such as World War II etc.

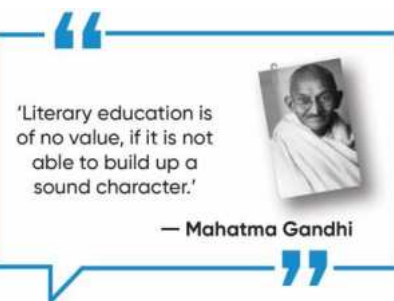
SEVEN SOCIAL SINS

	Politics without Principles
	Wealth without Work
	Pleasure without Conscience
	Knowledge without Character
	Commerce without Morality
	Science without Humanity
	Worship without Sacrifice

Stakeholders and their Interest	
Stakeholders	Interest
Citizen/Individuals/ Society	<ul style="list-style-type: none"> They always want that knowledge should be used for the welfare of all. Every action should be toward 'Sarve jana sukhino bhavantu (Let everyone be happy)'.
State/Governments	<ul style="list-style-type: none"> If knowledge will be used with character then everyone will prosper and it will promote peace and stability in the society.
Institutions	<ul style="list-style-type: none"> Institutions aim to promote intellectual development along with imparting good characteristics in students/participants so that they could be good citizens.

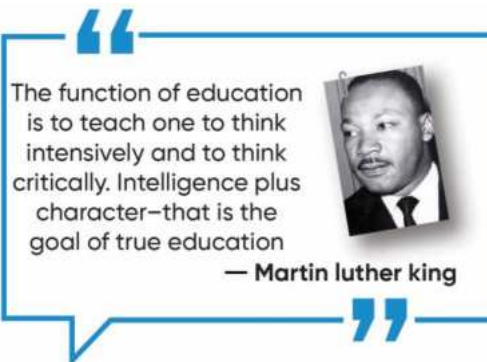
Ethical Issues /Concerns arising when Knowledge is used without Character

- **Unjust Decision-Making:** Lack of a sense of equality and empathy in character can lead to **biased decision-making**, where **personal prejudices** or **self-interest influence** choices rather than **fair assessments**.
 - For instance, rising radicalism and discrimination in the society.
- **Promotes Unethical Activities:** If knowledge is used with ulterior motives, then it may give rise to tendencies of **intolerance**, **racism**, **xenophobia**, **stereotyping**, and non-objective and partial treatment of fellow beings.
- **Blurredness between right Means and End:** If knowledge is only used for self-interest, then a person focuses only on achieving the **end (objective)** and does not pay much attention towards the **means (way)**.
 - E.g., the Expansionist policy of Adolf Hitler, the use of artificial intelligence and machine learning to create deepfakes (images and videos) to spread misinformation etc.
- **Lack of Accountability:** An authorised/leading person in an organisation or government will not be **accountable** to the people for **their actions** if they lack key building blocks of a character such as respect for coworkers etc.



Way Forward

- **Intertwining knowledge with character:** Focus of the national curriculum, and pedagogical processes should be on the overall personality development of individuals (including both intellectual and Knowledge).
 - The New Education Policy (NEP), 2020 can play a key role in this sphere.
- **Developing critical thinking and wisdom:** Family members and peer groups have to play a constructive role in it. It can be done by **critically evaluating information** and **encouraging questioning**.
- **Promote Emotional Intelligence:** It will help in enhancing **self-awareness** and **empathy**.
 - For instance, schools and parents can plan social awareness drives such as visiting slums, orphanages, old-age homes etc.
- **Transforming self-interest-oriented and narrow mindset:** E.g. how India is promoting the idea of **Vasudhaiva Kutumbakam** implying 'the world is one family'.



Conclusion

Character without knowledge is weak and feeble, but knowledge without character is dangerous and a potential menace to society. Character and knowledge together should be the true goal of education.

Check your Ethical Aptitude

Rahul works in Research and Development of a reputed pharma company. He is leading a project for which clinical trials need to be conducted. Director of the company asked Rahul to conduct trials on people living in a nearby slum without informing them about the risks associated with it. Rahul denied doing it as it is against the law and his morals. But, the director instructs him to go through with the same, stating that he need not worry about it.

On the basis of the case above, answer the following questions?

- Identify the ethical issues involved in the case?
- What options are available to Rahul?
- Which option should Rahul follow? Also discuss its merits and demerits.

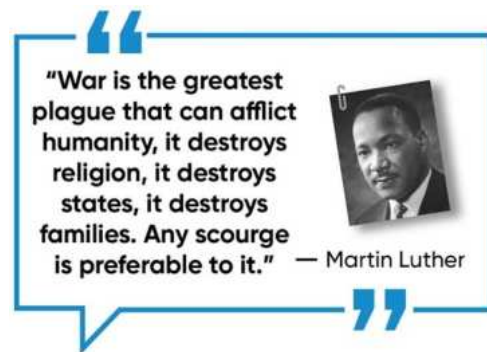
9.2. ETHICS OF WAR

Introduction

Recent conflicts between Russia-Ukraine and Israel-Hamas and the continuous circulation of images and stories in social media about the atrocities of war raise various ethical questions.

What are the Ethical concerns that arise in war?

- **Reduction to Right side vs. wrong side:** The attempt to make sense of war and violence is often reduced to a judgement that one side is right and the other wrong.
 - However, providing a justification to oneself and others does **not make it ethically correct**.
- **Punishment and revenge:** In war, rationales based on **punishment and revenge** are often seen as a moral path to correct a wrong.
 - Deaths and capital punishment as a result of wars raise many ethical questions.
- **Degradation of Human beings:** Humans are often treated as tools to achieve the objectives of war.
- **Individual vs. collective identity:** Recent conflicts such as the Israel-Palestine war show a trend where people don't see individuals as they are and see them only in terms of a collective identity.



In a war, thousands of innocent people are sentenced to death as collateral damage, not through judicial deliberation but as a consequence of war. Here, the question arises:

Is there an ethical framework to resolve these concerns?

The most famous way of ethically assessing war is to use 'Just War Theory'. Just war theory establishes several conditions that determine whether a war can be regarded as just, ethical or legitimate.

Just War Criterion

Jus ad bellum (Justice of the resort to war)	
Right Authority	War should be waged by a legitimate authority. For instance, national government is often considered legitimate interest.
Just Cause	Lethal force may be used if having a just cause. For instance, self-defence is often considered just cause.
Right Intention	In war, not only the cause and the goals must be just, but also our motive for responding to the cause and taking up the goals.
Last Resort	We may resort to war only if it is the last viable alternative.
Proportionality	We must be confident that resorting to war will do more good than harm. For instance, civilians should not be the intended targets .
Reasonable Hope	We must have reasonable grounds for believing the cause or success can be achieved.
Relative Justice	No state can act as if it possesses absolute justice.
Open Declaration	An explicit formal statement is required before resorting to force.
Jus in bello (Justice of conduct of war)	
Discrimination	There should be a distinction between enemy combatants and non-combatants . Non-combatants must be given immunity and protection.
Proportionality	Military actions must do more good than harm. For instance, excessive or unnecessary harm should be avoided.
Necessity	Actions must be militarily necessary .
Jus post bellum (What is the responsibility of warring parties after the war?)	
Ethical issues that arise in the aftermath of war, such as reparations and punishment, fall within the scope of jus post bellum. It has three central concerns : <ul style="list-style-type: none"> ○ Constraining the wrongdoing of victors, ○ Facilitating post-war reconstruction, and ○ Securing lasting peace. 	

Are these ethical ideals being followed?

Some states and military organizations explicitly try to adhere to just war principles and incorporate them into their military doctrines, rules of engagement, and training programs.

However, in most of the cases, adherence to these principles is found wanting. The following can be cited as key reasons for this scenario:

- **Involvement of Non-State Actors:** such as insurgent groups or terrorist organizations, are often not bound by the same legal and ethical constraints as state actors, and their actions may frequently violate just war principles.
- **Ignorance of Distinction principle:** The principle of discrimination requires a clear distinction between combatants and non-combatants, but in practice, civilians often become unintended victims of armed conflicts.
 - For instance, **use of weapons of mass destruction**, cluster bombs, and those which affect large areas **violate such principles**.
- **Technological Advancements and the principle of proportionality:** The use of advanced military technologies, such as drones and precision-guided munitions, raises questions about proportionality and discrimination.
 - While these technologies can be employed to minimize civilian harm, there are concerns about their potential misuse.
- **Limited Global Governance:** The enforcement of just war principles often relies on international institutions, treaties, and agreements. The effectiveness of these mechanisms is often questionable.

What can be done to ensure that these ideas are followed?

- **Strengthening International Cooperation and Institutions:** Strengthen and enforce international agreements that govern the conduct of war, such as the **Geneva Conventions**.
 - There is also a need to enhance the role of institutions such as the **International Criminal Court (ICC)** or the **UN Security Council** in holding individuals or states accountable.
- **Advocacy for stricter Arms control and disarmament:** to limit the use of weapons that can cause disproportionate harm to civilians.
- **Peacebuilding and Conflict Resolution:** Investing in diplomatic and peacebuilding efforts such as addressing the root causes of conflicts, promoting dialogue, and facilitating negotiations can contribute to the prevention of violence.
- **Code of Conduct:** There can be an **enforceable code of conduct** for state militaries based on consensus regarding war ethics.
- **Human rights monitoring:** Strengthen human rights monitoring mechanisms to document and report on violations during armed conflicts.



Conclusion

As the nature of warfare continues to evolve, ethical considerations must adapt to address new challenges and uphold the fundamental values that prioritize human dignity, justice, and peace.

Check your ethical aptitude

Recently, a conflict broke out between Israel and Hamas in the Middle East. Continuous bombardments, airstrikes and ground offensives have resulted in significant civilian casualties on both sides. The war has divided the world with no end to hostilities in sight but with the increased challenges of food insecurity, homelessness and poverty.

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

- Should morality be a concern in war?
- Who are the stakeholders and what are the ethical considerations associated with war?
- What principles should the parties involved follow to respect human life?

9.3. ETHICS IN SPORTS

Introduction

A controversy erupted during the Cricket World Cup match between Bangladesh and Sri Lanka regarding the call for a timed-out decision against Sri Lankan cricketer Angelo Mathews. Although, it was as per the rules, but his conduct was debated in the context of poor sportsmanship.

Who are different stakeholders and what is the responsibility of different stakeholders in ensuring sports ethics?

Stakeholders	Responsibility
Government	<ul style="list-style-type: none"> Promoting and monitoring implementation of code of sports ethics. Inclusion of sports ethics in school curricula. Encourage research to improve understanding of complex issues in sports.
Sports institutions/ organizations	<ul style="list-style-type: none"> Publish clear guidelines on ethical and unethical behaviour. Establish systems which reward sports ethics and penalize unethical behaviour. Encourage modification of rules to meet special needs of vulnerable sportspersons.
Sportspersons	<ul style="list-style-type: none"> Setting a good example through personal behaviour. Refrain from rewarding unfair play. Awareness regarding physical and psychological changes throughout sporting performance.
Sport fans	<ul style="list-style-type: none"> Express support for their team without resorting to disrespectful or offensive language. Rejecting and condemning any form of discrimination. Responsible online behaviour and respecting privacy of sportspersons.

What constitutes Sports Ethics?

Sports ethics signifies not just a certain form of behaviour but also a particular way of thinking. It involves the **elimination of all types of negative behaviour** on and off the field. More importantly, it promotes **equity and sporting excellence**.

Ethics in sports requires **four key virtues**: fairness, integrity, responsibility, and respect.

Ethical virtues	Elements
Fairness	<ul style="list-style-type: none"> Follow established rules and guidelines of respective sports. No discrimination against participants in a sport based on their race, gender, or sexual orientation. Referees should not show bias or personal interest in the outcome.
Integrity	<ul style="list-style-type: none"> Not to engage in or tolerate dishonesty, cheating or dishonourable conduct. Any athlete who seeks to gain an advantage over his/her opponent by means of a skill that the game itself was not designed to test demonstrates a lack of personal integrity and violates the integrity of the game. <ul style="list-style-type: none"> For example, when a player fake being injured or fouled in soccer, he or she is not acting in a sportsmanlike manner.
Responsibility	<ul style="list-style-type: none"> Take responsibility for their performance, as well as their actions on the field. Players and coaches be up to date on the rules and regulations governing their sport. Players and coaches conduct themselves in an honourable way off the field, as well as on it.
Respect	<ul style="list-style-type: none"> Treat the traditions of the sports and other participants with respect. Not to engage in or tolerate disrespectful conduct, including verbal abuse of opponents and officials. All fans should show respect for other fans, as well as both teams and officials.

What are the ethical issues that arise in sports?

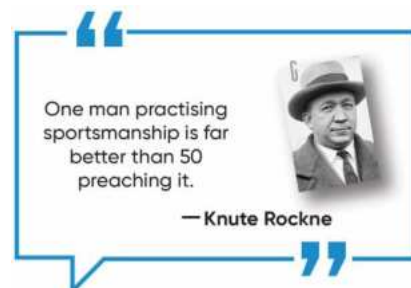
- The idea - winning is everything:** Athletes and coaches are often encouraged to bend the rules wherever possible to gain a competitive advantage over an opponent, and to pay less attention to the safety and welfare of the competition.
 - It places greater **emphasis on the outcome** of the game than on the way it is played.
- Pressure of excessive competition:** Modern sports are extremely competitive due to the professionalization of sports, involvement of global viewership, feeling of national pride, increased financial stakes and increased participation etc.
 - This creates pressure on athletes to conduct themselves unethically to gain a competitive advantage. E.g., the issue of doping among athletes to improve performance.
- Law-Morality conundrum:** While there are established rules and regulations within the legal framework of sports, the interpretation and application of these rules sometimes lead to moral ambiguity.
- Bracketed morality:** This approach holds that sport and competition are set apart from real life and occupy a realm where ethics and moral codes do not apply.



- Instead, some argue, sports serve as an outlet for our primal aggression and a selfish need for recognition and respect gained through the conquering of an opponent. In this view, aggression and victory are the only virtues. E.g., sledging during cricket matches between cricketers.

How can sports ethics be promoted?

- **Education and awareness:** Implementing educational programs emphasizing the importance of sports ethics, fair play and sportsmanship.
- **Role modelling:** Promote positive role models in sports who exemplify the highest standards of ethical behaviour.
- **Code of Conduct:** Develop and enforce a clear code of conduct for athletes, coaches, officials, and spectators.
- **Anti-doping initiatives:** Implement robust anti-doping programs to ensure fair competition and protect the health of athletes.
- **Media responsibility:** Promote responsible and ethical sports journalism that focuses on fair reporting and avoids sensationalism.
- **Sponsor responsibility:** Encourage responsible sponsorship and corporate practices that align with ethical standards.



Conclusion

The goal in sportsmanship is not simply to win but to **pursue victory with honour** by giving one's best effort. **Sport demonstrates and encourages character development of the individual**, which then influences the moral character of the broader community.

Check your ethical aptitude

A match between Bangladesh and Sri Lanka was ongoing during the cricket world cup match. During Sri Lanka's innings, Angelo Mathews walked up to the crease but realized something wrong with his helmet. He asked for a replacement and as a man ran towards him with his helmet, Bangladesh bowler Shakib appealed for a timed-out decision against Mathews. Shakib's appeal was accepted and Mathews was asked to go back to the pavilion.

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

- What are the ethical issues involved in the case?
- In reference to this case, is law and morality on the same ground?
- What factors determine the sportsmanship and sports ethics?

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10. SCHEMES IN NEWS

10.1. NATIONAL PROGRAMME FOR CIVIL SERVICES CAPACITY BUILDING (NPCSCB)- MISSION KARMAYOGI

Why in the news?

Karmayogi Bharat celebrated the 1st anniversary of Karmayogi Prarambh an initiative on the iGOT Karmayogi Platform, an initiative under **Mission Karmayogi**

Objectives	Salient features	SIX PILLARS OF MISSION KARMAYOGI
<ul style="list-style-type: none"> To transform the Indian civil services capacity-building landscape by establishing a robust digital ecosystem enabling continuous anytime-anywhere learning to make the officials future ready. 	<ul style="list-style-type: none"> Ministry: Ministry of Personnel, Public Grievances & Pensions. Background: Launched in 2020, the programme prescribes capacity building programmes for civil servants. Coverage: The Programme covers all civil servants (including contractual employees) across different ministries, departments, organizations and agencies of the Union Government. Key approach: <ul style="list-style-type: none"> Aligns work allocations of civil servants by matching their competencies to the requirement of the post. Emphasizes on on-site learning to complement off-site learning. Create an ecosystem of shared learning infrastructure including that of learning materials, institutions and personnel. Institutional Structure <ul style="list-style-type: none"> Prime Minister's (PMHR) HR council Cabinet Secretariate Coordination unit Capacity Building Commissions Karmayogi Bharat SPV (a not for profit company) Karmayogi Prarambh is an online orientation programme <ul style="list-style-type: none"> It aims to provide all the necessary details related to government policies for newly appointees recruited through Rozgar Melas. It includes a set of eight courses curated to help all Rozgar Mela appointees Impact expected: Direct benefit to 1.5 crore Government officials in the long run and amplifying impact on citizens who get empowered by the civil services. 	<p>SIX PILLARS OF MISSION KARMAYOGI</p> <ul style="list-style-type: none"> Policy Framework New Training Policies with focus on Continuous Learning and driving Competencies Competency Framework Shift from Rule to Role with the indigenous competency framework Institutional Framework Oversight by PMHR Council iGOT Karmayogi Large scale comprehensive learning platform E-HRMS Strategic HR Management electronic Human Resource Management System M&E Continuous performance analysis, data driven goal-setting and real time monitoring Monitoring and Evaluation Framework



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Places in News: India

Sutlej river (Punjab)

- Researchers found the presence of **tantalum** in the **Sutlej river sand** in Punjab.

Sambhar lake (Rajasthan)

- A researcher unveiled the **capability of Picocystis Salinarum** (green algae) found in **hypersaline soda lake Sambhar** to survive extreme environments.

Dhordo (Gujarat)

- Declared **Ghol** species as the **state fish** at the Global Fisheries Conference India 2023.

Panaji (Goa)

- 54th **International Film Festival of India (IFFI)** commenced in Panaji.

Kadalundi river; Kozhikode (Kerala)

- Shrinking mudflat ecosystem of Kadalundi river is impacting **Kadalundi Vallikunnu Community Reserve (KVCR)**.
- Kozhikode joined the UNESCO Creative Cities Network (UCCN).

Gwalior (Madhya Pradesh)

- Gwalior joined the UNESCO Creative Cities Network (UCCN).

Loktak Lake (Manipur)

- Manipur Government raised concern that Loktak Lake's hydroelectric plan may affect Sangai deer.

Mudichu Thalapalli (Telangana)

- A 3,000-year-old Iron Age Geoglyph circle was discovered in Telangana.

Kurnool district (Andhra Pradesh)

- Banni' festival held at Devaragattu in Kurnool district

Bengaluru (Karnataka)

- Bengaluru Climate Action Plan unveiled in line with the city's commitment to C40 Cities.

Places in News: World

Bering Sea

A recent study revealed a link between **declining Bering Sea ice** and **increasing wildfire hazard** in northeast China.

Iceland

Prime Minister of Iceland joined the **women on strike over equal pay**.

Switzerland

Fifth meeting of Conference of Parties (COP 5) to Minamata Convention held in Geneva.

Italy

Mount Etna Volcano began erupting again on island of Sicily.

Bahrain

The Kingdom of Bahrain has **recalled its ambassador from Israel**.

Qatar

A court in Qatar **sentenced eight former personnels** of the Indian Navy to death.

Dominica

Dominica has announced to create **world's first sperm whale reserve**.

Senegal

Senegal hosts **first meeting** of WHO's initiative Global Onchocerciasis Network for Elimination (GONE).

Guinea

Indian Navy has successfully conducted an Anti-Piracy patrol in the Gulf of Guinea.

Mozambique

INS Sumedha arrived at Maputo, Mozambique as a part of the Extended Operational Deployment to Africa.

Australia

Australian Government announced to issue a national apology to all citizens affected by the "Thalidomide tragedy".

Personalities In News

Personality	About	Ethical Values Exhibited by the Personality
 <p>Shaheed Veer Narayan Singh (1795-1857)</p>	<ul style="list-style-type: none"> • He was born in a Zamindar family at Sonakhan (Raipur district) of Chhattisgarh. • His father's name was Ramasai who belonged to Binjwar tribe. • He spearheaded 1857 war of Indian independence in Chhattisgarh and known as "the 1st Chhattisgarhi freedom fighter". • He was arrested in 1856 for looting a trader's grain stocks and distributing it amongst poor in a severe famine year. • In 1857, he escaped prison, raised an army of 500 men, and fiercely resisted British before being hanged. • Chhattisgarh's International Cricket Stadium is named after him. 	<p>Determination and Valour</p> <ul style="list-style-type: none"> • Despite facing significant challenges and obstacles, he remained determined in his efforts to fight against British army in Chhattisgarh and bring about change.
 <p>Sachchidananda Sinha (1871-1950)</p>	<ul style="list-style-type: none"> • Bihar Chief Minister inaugurates Sachchidananda Sinha statue on his birth anniversary on 10th November in Patna. • About Sachchidananda Sinha <ul style="list-style-type: none"> ▸ Born in Arrah, in erstwhile Bengal Presidency. ▸ Played crucial role in formation of Province of Bihar and Orissa. ▸ Active member of British Committee on INC in London. ▸ Member of Imperial Legislative Council from 1910-1930. ▸ As a constitutional nationalist, he believed that Indians should adopt constitutional means to attain freedom. ▸ Served as interim President of Constituent Assembly before Rajendra Prasad was formally appointed as President. ▸ Key Writings: Iqbal: The Poet and His Message, Kashmir the Playground of Asia etc. 	<p>Integrity of Purpose and Leadership</p> <ul style="list-style-type: none"> • Demonstrated through his steadfast commitment to constitutional methods for India's freedom. • Evidenced by his significant roles in shaping Bihar and Orissa's formation.
 <p>Chandrasekhara Venkata (CV) Raman (1888-1970)</p>	<ul style="list-style-type: none"> • Nation celebrates 135th birth anniversary of CV Raman on 7th November. • Born at Tiruchirappalli, Tamil Nadu, he founded <ul style="list-style-type: none"> ▸ Indian Journal of Physics. ▸ Indian Academy of Sciences, registered as Society under Societies Registration Act in 1934. • Won Nobel Prize in Physics in 1930 and Bharat Ratna in 1954. • National Science Day is celebrated every year to commemorate his discovery of Raman Effect. • Raman Effect: A phenomenon when a stream of light passes through a liquid, a fraction of light scattered by liquid is of a different colour. <ul style="list-style-type: none"> ▸ This happens due to change in wavelength of light that occurs when a light beam is deflected by molecules. 	<p>Scientific aptitude and Knowledge</p> <ul style="list-style-type: none"> • As an eminent scientist, he showed exemplary interest in understanding the physical laws of nature. • His pioneering work on the nature of light is considered as scientific milestone.

 <p>Jivatram Bhagwandas (J.B.) Kripalani (1888-1982)</p>	<ul style="list-style-type: none"> • He was freedom fighter, academician and socialist. • Contributions <ul style="list-style-type: none"> ▶ Freedom movement: Accompanied Mahatma Gandhiji in his campaign in Champaran movement. Took part in all movements of Congress since 1921. <ul style="list-style-type: none"> ▪ Elected as President of Congress in 1946 and led it through days of power transfer. ▪ He was the founder of the Praja Socialist Party (PSP). ▶ Role in Constitution Making: Member of constituent assembly and entrusted with chairmanship of Fundamental Rights subcommittee. ▶ He earned the name 'Acharya' while teaching at Gujarat Vidyapith. 	<p>Commitment to Social Justice and Courage</p> <ul style="list-style-type: none"> • His active role in India's freedom struggle and his work in the Fundamental Rights Subcommittee reflect his deep dedication to social equity. • Showcased bravery in the face of political and social, including serving as the President of Congress.
 <p>Homi Jehangir Bhabha (1909-1966)</p>	<ul style="list-style-type: none"> • India remembers Homi Jehangir Bhabha on his birth anniversary. • About Homi Jehangir Bhabha <ul style="list-style-type: none"> ▶ Born in Bombay in a Parsi family. ▶ An Indian physicist often considered as Father of Indian Nuclear Program. ▶ Founding director of Tata Institute of Fundamental Research (TIFR) and Trombay Atomic Energy Establishment (renamed as Bhabha Atomic Research Centre (BARC)). ▶ Associated with Bhabha scattering (relativistic exchange scattering of electrons) and Bhabha-Heitler theory (production of electron and positron showers in cosmic rays). ▶ Conferred with Padma Bhushan award (1954). ▶ Elected as president of first international conference on Peaceful Uses of Atomic Energy (at Geneva) in 1955. 	<p>Scientific Rigour and Pursuit of Excellence</p> <ul style="list-style-type: none"> • His foundational role in the Indian nuclear program and his significant contributions to theoretical physics, exemplify his commitment to scientific research and inquiry. • His leadership in establishing premier research institutes, and his recognition on international platforms demonstrate his relentless pursuit of excellence in the field of nuclear science.
 <p>Justice (Retd.) Fathima Beevi (1927-2023)</p>	<ul style="list-style-type: none"> • India's first woman Supreme Court Justice Fathima Beevi passes away. • About Fathima Beevi <ul style="list-style-type: none"> ▶ Born in Pathanamthitta, Travancore (present-day Kerala). ▶ In 1950, became the first woman law graduate to get the gold medal from Bar Council. ▶ Became a district sessions judge in 1974 and later as a judge of Kerala High Court in 1983. ▶ She was Supreme Court judge between 1989- 1992. ▶ Served as a member of National Human Rights Commission and also as governor of Tamil Nadu. 	<p>Equality and Pioneering Spirit</p> <ul style="list-style-type: none"> • Her efforts in championing equal rights and justice, particularly in her role in the judiciary reflect her strong belief and dedication to the principle of equality. • As the first woman to achieve several milestones in the Indian legal system, her career embodies a pioneering spirit, breaking new ground for women.

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 <p>Indian Statistical System: Decoding Data to Drive Development</p>	<p>The statistical system of a country provides citizens an impartial view of the state of their country's progress. It also empowers policymakers and investors by furnishing them with precise data, enabling strategic decision-making. This document takes a deep dive into the intricacies of India's statistical framework, unravelling its critical role in steering development initiatives. It also sheds light on the challenges and opportunities inherent in the statistical domain.</p>	
 <p>Suicides: An Emerging Social Problem in India</p>	<p>Within the shadows of societal complexities, the issue of suicide emerges as a pressing concern in India. It reflects a profound intersection of socio-economic challenges, cultural dynamics, and individual struggles. This document examines the rising phenomenon of suicides within the Indian social fabric. It addresses the intricate factors contributing to this alarming trend, and seeks to suggest strategic interventions for mental health and societal well-being.</p>	
 <p>Indian Traditional Medicine: Gifting Holistic Wellness to the World</p>	<p>At the crossroads of ancient wisdom and contemporary relevance lies the profound significance of 'Traditional Indian Knowledge,' a timeless reservoir that unveils the cultural tapestry of India and serves as an enduring source of inspiration and guidance across disciplines. This document illuminates the cultural richness of Indian traditional medicine and positions it as a valuable global asset, contributing to the discourse on holistic wellness.</p>	

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