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NOVEMBER 2023

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PRELIMS BYTES

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MAINSTORIES

PRELIMS BYTES

1. ART AND CULTURE

1.1 UNESCO's Creative Cities Network

Why in the news?

Recently, **Kozhikode** has been named as **India's first city of Literature under UNESCO.**

Key points from the news?

- **Gwalior (2023)** has been named a **City of Music**, an honour that was achieved before by two other Indian cities, **Varanasi (2015) and Chennai (2017).**

About UNESCO's Creative Cities Network?

- It was in **2004** that UNESCO launched the Creative Cities Network to promote cooperation among **cities that have identified creativity as a strategic factor for sustainable urban development.**

- **Edinburgh was the first City of Literature.**

- The cities which currently make up this network work together towards a common objective: placing creativity and cultural industries at the heart of their development plans at the local level and cooperating actively at the international level.

- The Network covers **seven creative fields: Crafts and Folk Art, Media Arts, Film, Design, Gastronomy, Literature and Music.**

- The Creative Cities Network is a privileged partner of UNESCO, not only as a platform for reflection on the role of creativity as a lever for sustainable development but also as a **breeding ground of action and innovation,**

notably **for the implementation of the 2030 Agenda for Sustainable Development.**

1.2 Malerkotla Palace

Why in the news?
Recently, the ruins of the **19th century palace, Mubarak Manzil, in Malerkotla town of Punjab** has been in the news.

Significance:

- The palace not only has architectural value but is also closely associated with the sentiments of Sikhs and Muslims.

- Malerkotla's **significance in Sikh history** has been immense as people, especially **Sikhs, revered Sher Mohammed Khan, former Nawab of Malerkotla, who raised his voice of protest against the execution (bricking alive) of the sons of Guru Gobind Singh** — Sahibzada Zorawar Singh (nine) and Sahibzada Fateh Singh (seven) by Wazir Khan, the then Governor of Sirhind region, in 1705.

1.3 Chhath Puja

Why in the news?

Recently, a four-day Chhath Puja festival started in India.

About Chhath Puja:

- **Sun god** is the main god in this festival.

- The first day of the festival is nahay-khay(a ritual river bath) in which vratis (women who are fasting) have a bath in the morning and offer prayers to the rising sun at home

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or on the ghats, before eating rice and bottle gourd.

- The second day is observed as kharna, in which kheer and roti with dollops of ghee are eaten. This is the last meal before fasting for two continuous days.

- On the third day, devotees offer arghaya to the setting sun while standing in water at the ghats.

- The festival ends on the fourth day after offering araghya to the rising sun, followed

by breaking the two-day fast with **Thekua** (a sweet made at home with this wheat and jaggery).

- This festival is mostly celebrated in **North India.**

Significance:

- It is a four-day festival, through which **inter religious bonhomie** is celebrated.

- In this festival, **hundreds of Muslim potters prepare earthenware stoves** to be sold to devotees to cook their offerings.

2. POLITY AND GOVERNANCE

2.1 Ethics Committee

Why in the news?

Recently, the Lok Sabha Ethics Committee adopted a report recommending the expulsion of a Trinamool Congress MP from the Lower House over a "cash-for-query" allegation.

Key points

- This is the first time, since the Ethics Committee came into existence in the year 2000, that the panel has recommended expulsion of a Parliamentarian.

About Ethics Committee:

- The genesis of formation of Ethics Committee in Parliament can be traced to a **resolution adopted at the Presiding Officers Conference held in New Delhi in October, 1996** which desired the legislatures to explore the possibility of constituting Ethics Committee.

History:

- o Then Vice President (and Rajya Sabha Chairman) K R Narayanan constituted the **Ethics Committee of the Upper House on**

March 4, 1997, and it was inaugurated to oversee the moral and ethical conduct of members and examine cases of misconduct referred to it.

- o The **Rules applicable to the Committee of Privileges** also apply to the ethics panel.

- o In the case of Lok Sabha, a study group of the House Committee of Privileges, after visiting Australia, the UK, and the US in 1997 to look into practices pertaining to the conduct and ethics of legislators, recommended the constitution of an Ethics Committee, but it could not be taken up by Lok Sabha.

- o The **Committee of Privileges finally recommended the constitution of an Ethics Committee during the 13th Lok Sabha.**

- o The late Speaker, G M C Balayogi, constituted an **ad hoc Ethics Committee in 2000**, which **became a permanent part of the House only in 2015.**

The provisions have been mentioned under the Rules of procedure of the Lok Sabha.

Constitution - Rule 316A:

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- (1) There shall be a Committee on Ethics consisting of **not more than fifteen members.**
- (2) The Committee shall be **nominated by the Speaker and shall hold office for a term not exceeding one year.**

Functions- Rule 316B: The Committee shall: -

- (1) Examine every complaint relating to **unethical conduct of a member of Lok Sabha referred to it by the Speaker** and make such recommendations as it may deem fit.
- **(2) Formulate a Code of Conduct** for members and suggest amendments or additions to the Code of Conduct from time to time.

Procedure - Rule 316C:

- (1) On a matter being referred to the Committee, a **preliminary inquiry** shall be conducted by the Committee.
- (2) If the Committee, after a preliminary inquiry, **is of the opinion that there is no prima facie case, it may recommend that the matter may be dropped** and the Chairperson shall intimate the Speaker accordingly.
- (3) If the Committee, after preliminary inquiry, is of the opinion that **there is a prima facie case, the Committee shall take up the matter for further examination.**
- (4) The Committee may **lay down procedures**, from time to time, for examination of matters referred to it.

Report - Rule 316D:

- (1) The recommendations of the Committee shall be presented in the form of a report.
- (2) The report **shall be presented to the Speaker** who may **direct that the report be laid on the Table of the House.**

- (3) The report of the Committee may also state the procedure to be followed by the House in giving effect to the recommendations made by the Committee.

Consideration of report by House - Rule 316E:

- (1) After the report has been presented, the Chairperson or any member of the Committee or any other member may move that the report be taken into consideration whereupon the Speaker may put the question to the House.
- (2) Before putting the question to the House, the Speaker may permit a debate on the motion, not exceeding half an hour in duration.
- (3) After the motion made under sub-rule (1) is agreed to, the Chairperson or any member of the Committee or any other member, as the case may be, may move that the House agrees, or disagrees or agrees with amendments, with the recommendations contained in the report.

Priority for consideration of report by House - Rule 316F:

- A motion that the report of the Committee be taken into consideration shall be put down in the list of business after disposal of questions.

2.2 Criminal trails of MP, MLA's

Why in the news?

Recently, the Supreme Court gave Chief Justices of High Courts t**he responsibility to form a Special Bench each in their High Courts** to maintain a constant vigil over the criminal trials of MPs and MLAs.

Key points:

- The petitioner said **40% of the MPs and MLAs have criminal antecedents.**

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- These cases have a direct bearing on **political democracy.** Hence, these cases are **taken up on priority and decided expeditiously.**

- The Supreme Court directed the **Chief Justices of High Courts to register suo motu cases in their respective jurisdictions** titled "In re: Designated courts for MPs and MLAs" to monitor the early disposal of criminal cases pending against MPs and MLAs.

Directions of Supreme Court:

- The Special Bench of each High Court may **either be headed by the Chief Justice or comprise judges assigned by the Chief Justice.**

- The High Courts should give principal **district judges responsibility to allocate the cases** to special designated courts for effective disposal of the pending criminal cases.

- The designated trial courts should give **first priority to cases concerning offenses punishable with death or life imprisonment and then for five years' imprisonment** and other charges with lesser punishment.

- The courts should allow **no adjournments unless in rare or compelling circumstances.**

- The Special Bench of a State should **monitor the progress of the trials by listing the suo motu case at regular intervals** and by asking for information from the principal district judges through status reports on the progress of the pending trial proceedings.

- The Bench can take the **assistance of the Advocate-Generals of the States concerned and public prosecutors.**

- The **High Courts should host an independent tab in their official websites** providing district-wise details of the year of filing of the criminal cases against the legislators and the status of the trial.

- The **Chief Justices of High Courts should list and hear cases** in which there was a stay of the trial passed by the Special Benches and pass appropriate orders, including vacation of the stay orders to ensure commencement and conclusion of the trial.

2.3 National Judicial Data Grid

Why in the news?

Recently, the Supreme Court welcomed three new judges, taking the judicial strength to its sanctioned capacity of 34, even as the pendency clock on the National Judicial Data Grid (NJDG) dashboard threatens to hit a high of 80,000 cases in the next 24 hours.

Key points:

According to the NJDG dashboard, the total pendency in the Supreme Court is ticking at **79,717 registered and unregistered cases.**

- Of these, **24,834 cases are less than a year old.**
- Total cases instituted **in October were 4,915 while 4,454 were disposed of in the same month.**
- The year 2023 has so far seen 47,135 cases instituted and 46,193 disposed of.

About National Judicial Data Grid (NJDG):

- National Judicial Data Grid (NJDG) is a **database of orders, judgments and case details of 18,735 District & Subordinate Courts and High Courts** created as an online platform under **the eCourts Project.**

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- Data is updated on a **near real-time basis by the connected District and Taluka courts.**

- It provides **data relating to judicial proceedings/decisions of all computerized district and subordinate courts** of the country.

- **All High Courts have also joined the National Judicial Data Grid (NJDG)** through web services, providing easy access facility to the litigant public.

- Through the eCourts services platform using **elastic search technology**, currently litigants can access case status information in respect of over 24.20 crore cases and more than 23.47 crore orders / judgments pertaining to these computerized courts as on date.

- Case **data is available on NJDG for both civil and criminal cases** with the ability to perform drill-down analysis based on the age of the case as well as the State and District.

Benefits:

- NJDG works as a **monitoring tool to identify, manage & reduce pendency of cases.**

- It helps to **provide timely inputs for making policy decisions** to reduce delays in disposing of cases and helps in reducing case pendency.

- It also **facilitates better monitoring of court performance** and systemic bottlenecks, and, thus, serves as an efficient resource management tool.

- To **track cases related to land disputes**, Land Records data of 26 States have been linked with NJDG.

- The World Bank praised the National Judicial Data Grid in the **Ease of Doing Business**

report for 2018, saying that it made it possible to generate case management reports, thereby making it easier to enforce contracts.

- In **consonance with the National Data Sharing and Accessibility Policy (NDSAP)** announced by the Government of India, Open Application Programming Interface (API) has been provided to the Central & State Government to allow easy access to the NJDG data using a departmental ID and access key.
  - This will **allow the institutional litigants to access the NJDG data for their evaluation and monitoring purposes.**
  - It is proposed to **expand the facility to non-institutional litigants as well in future.**

2.4 Interoperable Criminal Justice System

Why in the news?

Recently, **the Union Home Ministry** called for segregation of hardened criminals from other categories of criminals. It also asks the States to digitize the prison administration and integrate the database with the **Interoperable Criminal Justice System.**

Key points from the news:

- The Union Home Ministry has said States may use tracking devices on prison inmates when they are released on parole.

- The suggestion is part of the Model Prisons and Correctional Services Act, 2023 that was circulated to all States.

About the Interoperable Criminal Justice System:

- The Inter-operable Criminal Justice System (ICJS), c**onceptualized by the eCommittee,**

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Supreme Court of India and implemented as a project under the Ministry of Home Affairs, seeks to **enable seamless transfer of data and information among different pillars of the criminal justice system**, like courts, police, jails and forensic science laboratories, from one platform.

Objectives:

o Interoperability of data across all Pillars of criminal Justice System:

o National Crime & Criminal Data Search across all Pillars: .

o MIS Dashboard and Reporting of FIR/Case/ Case pendency/ Prisons/ Prisoner status

o Data Analytics for Forecasting/ Predictive Trends in Crimes

o Seamless data sharing across all pillars through a common Network Connectivity:

Inter-Operable Criminal Justice System (ICJS) is a national platform for enabling integration of the main IT system used for delivery of Criminal Justice in the country by **five pillars** namely:-

1. **Police (Crime and Criminal Tracking and Network Systems)**,

2. **e-Forensics for Forensic Labs**,

3. **e-Courts for Courts**,

4. **e-Prosecution for Public Prosecutors**

5. **e-Prisons for Prisons**.

2.5 Ombudsman

Why in the news?

Recently, a higher number of complaints from domestic air passengers has forced the government to discuss setting up an ombudsman or an authority to address grievances.

Key points:

- An ombudsman for the aviation sector is among the major reforms needed to improve air travel and that such a proposal was **mooted as early as 2013.**

- India is the **third biggest domestic aviation market in the world.**

About Ombudsman and their role:

- An ombudsman is an official who is charged with **representing the interests of the public by investigating and addressing complaints of maladministration or a violation of rights**.

- It is an authority **appointed by the government and even by private bodies**.

- An ombudsman is an **intermediate person who tries to resolve the complaints** which one party has raised against the other.

- He is appointed to **safeguard citizens against abuse or misuse of administrative power by the executive.**

- An ombuds' function is to provide **informal assistance in surfacing and resolving issues.**

- While they can **recommend** that an organization consider establishing or revising policy, the ombuds play no formal role in enforcing or deciding to implement policy.

- The ombuds **do not conduct formal investigations.**

- However, they do assist in identifying or creating options for resolution, including referrals to formal channels with investigatory powers.

Examples in India:

- **Banking Ombudsman:** The Banking Ombudsman Scheme was first introduced in

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India in the year 1995, and was revised in 2002 and in 2006.

- o At present, the Banking Ombudsman Scheme 2006 (as amended upto July 1, 2017) is in operation.
- o The scheme is introduced by RBI under Section 35A of the Banking Regulations Act 1949, in public interest.

- **Insurance Ombudsman:** The institution of Insurance Ombudsman was created by the Government of India in Notification dated 11th November,1998 for the purpose of quick disposal of the grievances of the insured customers and to solve their problems involved in redressal of those grievances.

- **Income Tax Ombudsman:** The institution of Income Tax Ombudsman was set up in the year 2003 to deal with the grievances of the public related to the settlement of complaints relating to income tax.
  - o However, in February 2019 the Union Cabinet decided to abolish institutions of ombudsman for income tax and indirect tax.

2.6 Special Category Status

Why in the news?

Recently, the Bihar Cabinet passed a resolution requesting the Centre to immediately grant a special category status to the State.

Key points from news:

- The Chief Minister said the State is home to around 94 lakh poor families and the granting of special status will help the government get about ₹2.50 lakh crore needed to fund various welfare measures over the next five years.

About Special Category status:

- A special category status is generally granted to States which face geographical and socio-economic disadvantages, such as those which lie along an international border, have hilly terrain, a sizable share of tribal population, or suffer from economic backwardness.

- Such States receive a higher share of Central funding for development purposes.

- The Constitution does not make a provision for SCS and this classification was later done on the recommendations of the Fifth Finance Commission in 1969.

Gadgil formula for special category status:

- o Hilly Terrain;

- o Low Population Density and/or Sizeable Share of Tribal Population;

- o Strategic Location along Borders with Neighboring Countries;

- o Economic and Infrastructure Backwardness; and

- o Nonviable Nature of State finances.

Benefits of Special Category Status:

- o The SCS States used to receive grants based on the Gadgil-Mukherjee formula, which earmarked nearly 30% of the total central assistance for States to the SCS States.

- o However, after the abolition of the Planning Commission and the recommendations of the 14th and 15th FC, this assistance to SCS States has been subsumed in an increased devolution of the divisible pool funds for all States (increased to 41% in the 15th FC from 32%).

- o In the SCS States, the Centre-State funding of centrally sponsored schemes is divided in

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the ratio of 90:10, far more favourable than the 60:40 or 80:20 splits for the general category States.

o Several other incentives 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

States with special category status:

o In 1969, three States — Jammu & Kashmir, Assam and Nagaland — were granted the SCS.

o Subsequently, eight more States including Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tripura, Himachal Pradesh, and Uttarakhand were given the SCS by the erstwhile National Development Council.

o Telangana, the newest state of India, is accorded the status as it was carved out of another state - Andhra Pradesh, which hit the state's finances.

2.7 Model Code of Conduct

Why in the news?

Recently, around ₹7500 cr have been seized from political parties for violation of Model Code of Conduct.

About Model Code of Conduct (MCC):

- The MCC is a set of guidelines **issued by the ECI** to regulate political parties and candidates prior to elections.

- It is released by the Election Commission to **ensure the constitutionally mandated free and fair elections.**

- It will be in **operation from the date of announcement of election schedule till the results announcements.**

- It was first introduced in the **1962 general elections.**

- MCC does **not have any statutory backup.** Hence the MCC is not enforceable by law. However, certain provisions of the MCC may be enforced through invoking corresponding provisions in other statutes such as the Indian Penal Code, 1860, Code of Criminal Procedure, 1973, and Representation of the People Act, 1951.

- In 2013, the Parliamentary standing committee suggested providing legal status to the Model Code of Conduct under the Representation of People Act 1951.

2.8 Article 142

Why in the news?

Recently, the Supreme Court has refused an undertrial's plea to flex its extraordinary powers under Article 142 of the Constitution to deliver him "complete justice" by clubbing 30 FIRs arraigned against him across seven States.

Key issues in news:

- The Supreme Court said that it could not club FIRs (First Information Reports) which not only involve offenses under the Indian Penal Code but charges under specific State laws.

- The apex court said States would have their own designated special courts to try these offenses. Clubbing FIRs would undermine the jurisdiction of these special courts.

Article 142:

- Article 142 provides discretionary power to the Supreme Court as it states that the SC in the exercise of its jurisdiction may pass such decree or make such order as is necessary for doing complete justice in any cause or matter pending before it.

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Examples:

- Cleansing of Taj Mahal

- Ban on the sale of alcohol along national and state highways.

Criticisms:

- Judicial overreact

- No accountability on its usage

2.9 Article 168

Why in the news?

Recently, a senior lawyer said that the Governor was a part of the State Legislature under Article 168, and cannot act in a way contrary to the wishes of the elected representatives of the people.

About Article 168:

- Article 168 states "for every State, there shall be a Legislature which shall consist of the Governor and two Houses to be known respectively as the Legislative Council and the Legislative Assembly".

2.10 Article 200

Why in the news?

Recently, the Tamil Nadu Assembly, in a Special Session, again passed 10 Bills for which Governor R.N. Ravi had earlier withheld assent.

Key points from news:

Most of the Bills which failed to get the Governor's assent are related to amendments in the laws of universities to empower the State government instead of the Governor, who is the Chancellor, to appoint Vice-Chancellors.

About Article 200: Under the article 200, the governor either can give assent to the bill or withhold the bill or reserves for the president's consideration.

- Governors can also return the bill, requesting the assembly to reconsider the provisions of the bill.

- If the legislative assembly again passes the bill, then he has to give his assent.

- The Supreme Court also said that the governor can't reserve the bill to the President, if the State legislature re-enact the bill.

2.11 Publicizing notices

Why in the news?

Recently, the Rajya Sabha Secretariat directed the members to not publicize their notices to raise important issues till they are admitted by the Rajya Sabha Chairman.

About Publicizing notices in Houses:

- As per parliamentary custom and convention, a notice to raise a matter in the Council should not be given publicity by any member or other person until it has been admitted by the Chairman and circulated to members.

- A member should not raise the issue in the council of a notice given by him and pending consideration of the Chairman.

Rule 267:

- According to the Rules of Procedure and Conduct of Business in the Council of States (Rajya Sabha), under Rule 267, "Any member, may, with the consent of the Chairman, move that any rule may be suspended in its application to a motion related to the business listed before the Council of that day and if the motion is carried, the rule in

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question shall be suspended for the time being."

- Simply put, under this rule, **Rajya Sabha MPs can give a written notice to suspend all listed business and discuss an issue of importance the country is facing.**

2.12 Fast Track Courts

Why in the news?

Recently, the Union Cabinet approved the continuation of fast-track courts dedicated to dispensation of justice in cases of sexual offenses for three years.

About Fast Track Special Court (FTSC) Scheme:

- Fast Track Court scheme was started to establish special fast track courts for Swift disposal of cases related to rape and those within the ambit of the POCSO Act.

- It is a **Centrally Sponsored Scheme.**

- Year: It was established in **2019**

- Time period: **2019 - 2026**

- A total of 30 States and Union Territories have participated in the scheme, operationalising **761 fast- track courts,** including **414 dedicated POCSO courts,** which have together resolved over 1,95,000 cases.

- The Centre had decided to set up 1,023 fast-track courts after the passage of the Criminal Law (Amendment) Act in 2018 in the aftermath of the 'Nirbhaya' gang-rape case in Delhi.

2.13 Chief Information Commissioner

Why in the news?

Recently, Heeralal Samariya was appointed as the Chief Information Commissioner.

About Chief Information Commissioner:

- He is appointed by the President based on the recommendation of the Search cum selection committee.

  o Search cum selection committee comprises Prime Minister as chairman, Leader of Opposition in Lok sabha and Cabinet Minister nominated by the PM as members.

- His tenure is such a term prescribed by the Central government.

- He is not eligible for reappointment.

2.14 Justice K Chandru committee

Why in the news?

Recently, the Justice K Chandru committee has given various recommendations to the Tamil Nadu government on Children in conflict with law (CCL).

Recommendations of the Justice K Chandru:

- Construct new homes that should not look like a prison or jail.

- The practice that grants preference to ex inmates in recruitment of guards, security and gate keepers must be stopped forthwith.

- Create a new directorate for running childcare institutions (CCIs) for CCL by bifurcating the Directorate of Social Defence.

- The enactment of legislation for setting up the Tamil Nadu Board for Special Services for Children, which would administer all the government homes meant for CCL functioning under the Social Welfare Department.

- The affairs of the home should be monitored regularly through a special monitoring room.

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- A training academy should be set up for staff.

- Each home must have a de addiction center.

- CCL should have recreational facilities with open ground.

- Each home must have a medical doctor, a psychologist and a qualified counselor.

- Setting up at least one home in each district.

- It is advisable that a nodal officer be appointed at the headquarters to interact with all the agencies and attend to issues raised from time to time.

2.15 Constitution Day

Why in the news?

Recently, the Chief Justice of India on Constitution Day said that the Supreme Court always has acted as the 'People's Court'.

About Constitution Day:

- Constitution day is celebrated on November 26th every year to commemorate the adoption of the Constitution.

- It is also known as **National Law Day or Samvidhan Diwas.**

- On this day in 1949, the Constitution of India was adopted by the Constituent Assembly.

2.16 Privileged Communication

Why in the news?

Recently passed Bharatiya Sakshya Bill that seeks to replace the Indian Evidence Act 1872, bars the Courts from inquiring any privileged communication between the President and Ministers.

Key details:

- The bill doesn't clearly define what constitutes Privileged Communication.

- It is now open to interpretation by the courts.

- Although Article 74(2) of the Constitution states that, the Union government seeks to give it legal backing by making it part of the evidence book.

2.17 Digital twins

Why in the news?

Recently, the Survey of India (SoI), historically the custodian of India's maps, has signed an agreement with a Mumbai-based private company, Genesys International, to prepare three-dimensional maps of several cities and towns.

What are Digital Twins?

- A digital twin is a **digital representation of a physical object, person, or process**, contextualized in a digital version of its environment.

- Digital twins can help an organization simulate real situations and their outcomes, ultimately allowing it to make better decisions.

About Survey of India:

- Survey of India, The National Survey and Mapping Organization of the country under the Department of Science & Technology, is the oldest scientific department of India.

- **Year**: 1767

- **Headquarters**: Uttarakhand

- **Nodal ministry**: Ministry of Science and Technology

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2.18 University Grants Commission (UGC)

Why in the news?

Recently, the University Grants Commission (UGC) has gazetted the regulations for foreign universities that plan to set up campuses in India.

Key points

- The UGC's 2021 regulations permit foreign universities to collaborate with Indian higher educational institutions to offer twinning, joint, and dual-degree programmes.

- It states that qualifications awarded under the regulations "shall be equivalent to any corresponding degree awarded by the Indian Higher Educational Institution".

- The recent regulations stipulate that "there shall be no further requirement of seeking equivalence and the degree shall have all benefits, rights and privileges as obtained in case of a degree awarded by an Indian higher education institution

About UGC:

- The University Grants Commission (UGC) **came into existence on December, 1953** and became a **statutory Organization** of the Government of India by an **Act of Parliament in 1956**.

- It is under **Ministry of Education, Department of Higher Education,** constituted under **the University Grants Commission Act, 1956** vested with **two responsibilities:**

    o That of **providing funds and that of coordination, determination and maintenance of standards in institutions of higher education**

The UGC`s **mandate** includes:

- Promoting and coordinating university education.

- Determining and maintaining standards of teaching, examination and research in universities.

- Framing regulations on minimum standards of education.

- Monitoring developments in the field of collegiate and university education; disbursing grants to the universities and colleges.

- Serving as a vital link between the Union and state governments and institutions of higher learning.

- Advising the Central and State governments on the measures necessary for improvement of university education.

2.19 Social audit

Why in the news?

Recently, the Management Information System (MIS) on Social Audit data showed that only six states completed the social audit under the Mahatma Gandhi National Rural Employment Guarantee Act.

Key details:

- Kerala is the only State to cover 100%-gram panchayats.

- Other than Kerala, the States to cross the 50% mark are Bihar (64.4%), Gujarat (58.8%), Jammu and Kashmir (64.1%), Od isha (60.42%) and Uttar Pradesh (54.97%).

- Only three States have covered 40% or more villages — Telangana (40.5%), Himachal Pradesh (45.32%) and Andhra Pradesh (49.7%).

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- The States complain that the audit is delayed because the Centre does not release the funds for the social audit units, which work independent of the State governments, in time.

What is social audit?

- In development programmes, social audit is a process by which the people, the final beneficiaries of any scheme, programme, policy or law, are empowered to audit such schemes, programmes, policies and laws.

- A social audit is an ongoing process by which the potential beneficiaries and other stakeholders of an activity or project are involved from the planning to the monitoring and evaluation of that activity or project.

- However, 'social audit' can also be understood in a broader sense, as a continuous process of public vigilance.

About Social Audit under MGNREGA:

- Section 17 of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) says the gram sabha "shall monitor the execution of works

- Each State has social audit units which are supposed to work independent of the implementing authorities.

- The auditing standards laid down by the Comptroller and Auditor General were issued only on December, 2016.

- Under these, every Social Audit Unit is entitled to funds equivalent to 0.5% of the MGNREGA expenditure incurred by the State in the previous year.

2.20 National Dam Safety Authority

Why in the news?

Recently, the six-member expert team of the National Dam Safety Authority (NDSA) examined a block in the **Kaleshwaram irrigation project in Telangana.**

About National Dam Safety Authority:

- The authority has been established under **the Dam Safety Act, 2021.**

  o The **Ministry of Jal Sakthi** established the authority after 3 months of passage of the act.

- **Head:** The Authority shall be headed by an officer **not below the rank of Additional Secretary to the Government of India or equivalent** to be appointed by the Central Government who have **knowledge of, and adequate qualification, experience and capacity in, dealing with problems relating to the dam engineering and dam safety management**

- **Headquarters: National Capital territory of Delhi**

Functions:

- The Authority shall discharge such functions as specified in the Second Schedule as may be **necessary to implement the policy, guidelines and standards evolved by the National Committee for proper surveillance, inspection and maintenance of specified dams and for such purposes**, it shall have the power to enforce the attendance of any person and call for any information as may be necessary.

  o Provide the **state-of-the-art technical and managerial assistance** to the State Dam Safety Organisations;

- Maintain a **national level database** of all specified dams in the country, including serious distress conditions, if any, noticed therein.
- Maintain liaison with the State Dam Safety Organisations and the owners of the specified dams for **standardisation of dam safety related data and practices**, and related technical or managerial assistance;
- Lay down **guidelines and check-lists for the routine inspection** and detailed investigation of the specified dams and appurtenant structures;
- Maintain the **records of major dam failures** in the country; among other functions.

- The Authority **shall make all endeavors to resolve any issue between the State Dam Safety Organisations of States or between a State Dam Safety Organisation and any owner of a specified dam** in that State.
- **Every decision** of the Authority taken in respect of matters under this Act shall be **final and binding upon all the parties to the issue.**

About Kaleshwaram irrigation project:

- The Kaleshwaram Lift Irrigation Project or KLIP is a multi-purpose irrigation project **on the Godavari River in Kaleshwaram**, Bhupalpally, Telangana.

- Currently it is the **world's largest multi-stage lift irrigation project**,its farthest upstream influence is at the **confluence of the Pranhita and Godavari rivers.**

- The Kaleshwaram Lift Irrigation Project is divided into **7 links and 28 packages** spanning a distance of **approximately 500 km through 13 districts and utilizing a canal network of more than 1,800 km .**

- The project aims to produce a **total of 240 TMC** of which is used for **irrigation, Hyderabad municipal water, miscellaneous industrial uses and drinking water in nearby villages**, with the remainder being estimated **evaporation loss.**

3. INTERNATIONAL RELATIONS

3.1 Group of Seven (G7)

Why in the news?

Recently, G-7 Foreign Ministers called for humanitarian pauses in the Israel-Hamas war to let aid in and help the release of hostages and sought a return to a "broader peace process", as Israeli forces continue to strike the Gaza Strip.

Key Points:

- The Group of Seven wealthy nations said in a joint statement that **Israel had the right to defend itself**, while **underscoring the need to protect civilians and to comply with international humanitarian law.**

- The **G7 members** are committed to **prepare sustainable long-term solutions for Gaza** and a return to a broader peace process in line with the internationally agreed parameters

- The Ministers shared the view that "**a two-state solution remains the only path to a just, lasting, and secure peace**".

- The communique also reiterated **G-7 support for Ukraine in its war with Russia,**

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highlighted the **need for engagement with China and condemned North Korea's missile tests and arms transfers to Russia.**

- The G-7 **comprises Britain, Canada, France, Germany, Italy, Japan, the U.S., with the EU** also taking part in the summit.

About G7:

- The G7 is an **informal bloc of industrialized democracies—the United States, Canada, France, Germany, Italy, Japan, and the United Kingdom (UK)**

- They meet annually to discuss issues such as
    - Global economic governance,
    - International security, and
    - Energy policy.

Formation:

- The **United States, France, Italy, Japan, the UK, and West Germany formed the Group of Six in 1975** to provide a venue for noncommunist powers to **address pressing economic concerns**, which **included inflation and a recession sparked by the Organization of the Petroleum Exporting Countries (OPEC) oil embargo.**

- **Canada** joined the following year, and **Cold War politics** invariably **entered the group's agenda.**

- **The European Union (EU)** has participated fully in the G7 **since 1981 as a "non enumerated" member.**

- There is **no formal criteria for membership**, but **all participants are wealthy democracies.**

- The aggregate gross domestic product (GDP) of G7 member states (not including the EU) makes up about **44 percent of the global economy in nominal terms**

- **Russia** formally **joined the group in 1998**, making it the **G8.**
    - Russia belonged to the forum from 1998 through 2014, when the bloc was known as the Group of Eight (G8), but it was **suspended following its annexation of Ukraine's Crimea region.**

- The **presidency, which rotates annually** among member states, is responsible for setting the agenda of each year's summit and arranging logistics for it; in **2023, Japan is acting as president.**

3.2 2+2 dialogue

Why in the news?

Recently, the second 2+2 ministerial meeting of India & Australia was held in India.

About India Australia 2+2 Dialogue:

- It was established in 2022.

- 2+2 ministerial meetings happen between foreign ministers and defense ministers of India.

- Other countries with which India has 2+2 ministerial dialogue:
    - USA, Russia, Japan, United Kingdom

Key points:

- Both sides will also take stock of the ongoing negotiations for a Comprehensive Economic Cooperation Agreement (CECA).

3.3 OECD

Why in the news?

Recently, the Organization of Economic Cooperation and Development released its biannual Economic Outlook.

Key points:

- The risk of hard landing has subsided despite high levels of debt and uncertainty iver interest rates.

    - **Hard landing:** A pronounced contraction of economic activity, leading to significant negative consequences for employment and overall economic health.

- Global growth is set to moderate from 2.9% this year to 2.7% in 2024 before picking up in 2025 to 3.0%.

About Organization of Economic Cooperation and Development:

- The Organisation for Economic Co-operation and Development (OECD) is an international organization that works to build better policies for better lives.

- Year of Establishment: 1948

- Headquarters: Paris, France.

- Members: 38.

    - **India is not a member.**

3.4 Migration and Economic Development Partnership

Why in the news?

Recently, the government policy of the U.K., of creating a mechanism for the transfer of asylum seekers not considered by the U.K. to Rwanda, has been ruled as unlawful by the U.K. Supreme Court.

- The UK Supreme Court found evidence that asylum seekers face a real risk of ill-treatment from refoulement.

About Migration and Economic Development Partnership (MEDP):

- The Migration and Economic Development Partnership (MEDP) was announced in April 2022.

- The objective of the deal is to "create a mechanism" for the transfer of asylum seekers not considered by the UK into Rwanda.

- According to the Memorandum of Understanding between the two nations, the U.K. will screen asylum seeker applications and arrange for safe transport to Rwanda.

- On arrival of the refugees, Rwanda is obliged to provide accommodation for every individual and protect them from ill-treatment and refoulement.

- Rwanda will be the sole authority to recognise or not recognise the refugee status of an individual. If an individual is not recognised, they will be moved to their country of origin.

Non Refoulment clause: Under international human rights law, the principle of non-refoulement guarantees that no one should be re- turned to a country where they would face torture, cruel, inhuman or degrading treatment or punishment and other irreparable harm

3.5 ILO report

Why in the news?

Recently, a new report called 'A call for safer and healthier working environments' was released by the International Labour Organization in the World Congress Safety and Health at Work.

Key points in the report:

- Nearly **30 lakh workers** die every year globally owing to **work-related accidents and diseases.**

- Exposure to **long working hours** (55 hours or more per week) was the biggest "killer", with almost **7.45 lakh** people dying, followed by **exposure to occupational particulate matter, gasses,** and fumes (4.5 lakh deaths) and **occupational injuries** (3.63 lakh deaths).

- The majority of these work-related deaths, 26 lakh, was attributed to work-related diseases, while work accidents resulted in 3.3 lakh deaths.

- The rate of trachea, bronchus, and lung cancers attributable to occupational exposure to chromium doubled between 2000 and 2016.

- Mesothelioma, attributable to asbestos exposure, has risen by 40%.

- The rate of non-melanoma skin cancer increased by over 37% between 2000 and 2020.

- Deaths due to exposure to asthmagens and particulate matter, gasses, and fumes decreased by over 20%.

Conventions:

- So far 79 out of the 187 member countries have ratified the ILO Occupational Safety and Health Convention (No. 155), while 62 countries have ratified the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187).

- **India has not ratified both the conventions.**

Five important recommendations:

- Freedom of association and right to collective bargaining

- Elimination of all forms of forced labor

- Abolition of child labor

- Elimination of discrimination at workplace

- Safe and healthy working environment.

About International Labour Organization:

- It is the only tripartite UN agency, which brings together governments, employers and workers.

- It is one of the **specialized agencies** of the United Nations.

- **Headquarters:** Geneva, Switzerland. **Year**: 1919

- **Members**: 187 members. India is a founding member of this forum.

Aim:

- Promotes rights at work

- Encourage decent employment opportunities

- Enhance social protection

- Strengthen dialogue on work related issues.

Organizational structure:

- **International Labour Conference:** it sets the International labor standards and the broad policies of the ILO. It meets annually in Geneva. It is often referred to as an International Parliament of Labour.

- **Governing Body:** It is the executive council of the ILO. It meets three times a year in Geneva.

- **International Labour Office**: It is the permanent secretariat of the International Labour Organization.

3.6 Collective Treaty Security Organization

Why in the news?

Recently, Armenia's Prime Minister Nikol Pashinyan said he would not take part in the

Russian Collective Treaty Security Organization summit.

About Collective Treaty Security Organization:

- It is an intergovernmental military alliance led by Russia and created in **2002**.

- The treaty, through which this organization was established, is 'Tashkent **treaty'.**

- **Members**: Russia, Armenia, Tajikistan, Kazakhstan, Kyrgyzstan.

- **Headquarters**: Moscow

Objective:

- Strengthening peace and stability

- Ensuring regional security

- Collective protection of integrity, sovereignty and independence of member countries.

3.7 Paris Club

Why in the news?

Recently, Sri Lanka has reached an "agreement in principle" with India and the Paris Club group of creditors, including Japan, on a debt treatment plan.

Key points from news:

- This debt treatment plan will help Sri Lanka tap the next tranche of the International Monetary Fund's nearly $3-billion recovery package.

- The Official Creditor Committee and Sri Lanka agreed on the main parameters of a debt treatment consistent with those of the Extended Fund Facility (EFF) arrangement between Sri Lanka and the IMF.

About Paris Club:

- The **Paris Club is a group of mostly western creditor countries** that grew from

a **1956** meeting in which Argentina agreed to meet its public creditors in Paris.

  o It describes itself as a forum where official creditors meet to solve payment difficulties faced by debtor countries.

- Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Japan, Netherlands, Norway, Russia, South Korea, Spain, Sweden, Switzerland, the United Kingdom and the United States.

  o **India is not a member of this club.**

Extended Fund Facility (EFF):

- The Extended Fund Facility (EFF) provides **financial assistance to countries** facing serious **medium-term balance of payments problems** because of structural weaknesses that require time to address.

- It is an initiative of the **International Monetary Fund.**

- **Eligibility**: **All member countries** facing actual or potential external financing needs.

Official Creditor Committee (OCC):

- A creditors' committee is a group of people who represent a company's or Country's creditors in a bankruptcy proceeding.

- Major lenders of Sri Lanka formed the OCC in May 2023 in response to Colombo's request for debt treatment.

- **Members: India, Japan, and France.**

  o **China opted to stay out of this club.**

  o Note: **China is the largest creditor of Sri Lanka.**

3.8 UN Humanitarian Corridor

Why in the news?

Recently, the United Nations formed a humanitarian corridor in Sudan's Darfur region.

What is the Humanitarian Corridor?

- Humanitarian corridors or safe passages are essentially agreements between parties to the armed conflict to allow for safe passage for a limited time in a specific geographic area.

- They can allow civilians to leave, humanitarian assistance to come in or allow for the evacuation of the wounded, sick or dead.

- No armed intervention by the UN Peacekeeping Mission would be there to form a humanitarian corridor.

3.9 UN Relief and Works Agency

Why in the news?

Recently, India voted in favor of a resolution that supports the UN Relief and Works Agency's works in Palestine.

About UN Relief and Works Agency:

- It is an **UN agency** that supports relief and **human development of the Palestine people.**

- UNRWA's mandate encompasses Palestinians displaced by the 1948 Palestine War and subsequent conflicts, as well as their descendants, including legally adopted children.

- As of 2019, more than 5.6 million Palestinians are registered with UNRWA as refugees.

- **Year**: 1949

- **Headquarters**: Amman in Jordan and Gaza in Palestine.

- It is **subject to periodic renewal every three years.**

- UNRWA is the **only UN agency dedicated to helping refugees from a specific region or conflict.**

3.10 Cutzamala system

Why in the news?

Recently, the Mexican officials imposed severe, months long cuts to Mexico City's water supply through Cutzamala system.

- Due to severe drought, water reservoirs were filled 44% lower than the usual level.

About Cutzamala system:

- It is a water supply system developed in Mexico to deliver uninterrupted water supply to Mexico City.

- Year: 1982

- Another major objective was to develop a hydroelectric power system under this system.

3.11 The Agartala- Akhaura rail link

Why in the news?

Recently, Prime Minister Narendra Modi and his Bangladeshi counterpart Sheikh Hasina virtually inaugurated the rail link between Agartala and Akhaura (in Bangladesh). It serves to re-establish connectivity between Bangladesh and India's northeast through Tripura.

Key points:

As of now, five broad gauge connectivity routes are operational entailing links with Bangladesh – all of them from West Bengal.

- Gede railway station (West Bengal) to Darsana (Bangladesh),

- Benapole to Petrapole (West Bengal),

- Singhabad (West Bengal) to Rohanpur,

- Radhikapur (West Bengal) to Birol and

- Haldibari (West Bengal) to Chilahati.

- Work is **underway to connect Mahihasan railway station in Assam to Shahbazpur in Bangladesh.**

- The major commodities of **export include stone, food grains, China clay, gypsum, maize, onion and other essential items**, as and when required, from India.

- Rail emerged as a "preferred, cost-effective and environment-friendly mode for cross-border transportation of essential commodities".

About the Agartala-Akhaura rail link:

- The **12.24 km long rail line** constituting about **6.78 km dual gauge rail line in Bangladesh and 5.46 km in Tripura,** would link the latter to Akhaura in its immediate neighborhood and thereby, its broader rail network.

- **Nischintapur in West Tripura** would serve as the i**nternational immigration station**, that is, provide facilities to process immigration-related scrutiny for passengers.

- Additionally, in September, the **Central Board of Indirect Taxes and Customs (CBIC) had declared Nischintapur as a Land Customs Station (LCS)**.

- It refers to any notified place meant **for the clearance of goods imported or to be exported by land or inland water.**

Significance:

- Through this link, **States of northeast India can also be connected to ports of Bangladesh.**

- It would help **energize connectivity and commerce** in India's northeast and Bangladesh.

- The project would also **reduce the travel time between Agartala and Kolkata** from about 31 hours at present **to 10 hours.**

- It will also **help India to access the Port of Chattogram in Bangladesh** through shorter routes and thus benefit overseas trade.

- The project also is in **continued adherence to the Central government's 'Act East Policy' and 'Neighbourhood First Policy'.**

- It would help the **growth of small-scale industries in the border area, boost tourism in Northeast India** and more importantly, **help local producers with quicker import and export of items.**

4. ECONOMY

4.1 Direct tax system

Why in the news?

Recently, the Ministry of Finance said that the net direct tax collections have reached 60% of its budget target.

What is direct tax?

- Direct taxes, usually levied on a person's income and wealth, are paid directly by people or an organization to the Government.

- The person or the organization in question cannot transfer this type of tax to another person or entity for payment. Some of the examples of direct tax include income tax and wealth tax.

- Descending order tax amount wise: **Corporate Tax > Personal Income Tax.**

- **Corporate tax:** A corporate tax is a tax on the profits of a corporation. The taxes are paid on a company's taxable income, which includes revenue minus cost of goods sold (COGS), general and administrative (G&A) expenses, selling and marketing, research and development, depreciation, and other operating costs.

- **Personal Income Tax:** Income tax is a tax charged on the annual income of an individual or business earned in a financial year. The Income Tax system in India is governed by The Income Tax Act, 1961, which lays out the rules and regulations for income tax calculation, assessment, and collection.

4.2 Algorithms and model-based credit appraisal and lending

Why in the news?

Recently, the Reserve Bank of India (RBI) Governor Shaktikanta Das has cautioned banks and NBFCs against being over-reliant on algorithms and model-based credit appraisal and lending.

What are algorithms and model-based credit appraisal and lending?

- It is a digital appraisal process, where machine learning algorithms are used to assess the creditworthiness of the borrower.

- These algorithms are trained on large datasets of historical credit data, which allows them to identify patterns and relationships that can be used to predict a borrower's likelihood of repaying a loan.

Advantages and disadvantages algorithms and model-based credit appraisal and lending:

Advantages:

- Credit worthiness of the borrower can be assessed effectively.

- Human biases in the assessment can be averted.

- Decision making will be very fast.

- It is cost effective also.

Disadvantages:

- It depends solely on data sets; if the data set is biased, then the assessment result will also be biased.

- Existing socio-economic issues of the borrowers can be neglected in this system.

4.3 Risk weight in consumer credit

Why in the news?

Recently, **Reserve Bank of India (RBI), has issued fresh regulatory measures aimed at consumer credit** a day after barring Bajaj Finance Ltd. from sanctioning and disbursing loans under its two lending products 'eCOM' and 'Insta EMI Card',**.**

Key points:

- The RBI, which has been red flagging the rising unsecured loan books of certain Regulated Entities (REs), **raised the risk weights on consumer credit issued by banks and Non-Banking Financial Companies by an additional 25 percentage points to 125%**.

- Currently, the consumer credit exposure of commercial banks attracts a risk weight of 100%.

- RBI circular stated that "On a review, it has been decided to increase the risk weights in respect of consumer credit exposure of commercial banks (outstanding as well as new), **including personal loans, but excluding housing loans, education loans, vehicle loans and loans secured by gold and gold jewelry**, by 25 percentage points to 125%".

What is risk weight in consumer credit ?

- Risk weightage is a measure used in the banking industry **to assess the risk associated with different types of assets, including loans.**

- The risk weight assigned to different types of loans is a key factor in determining the amount of capital a bank must hold.

- **Banks are required to maintain a certain level of capital adequacy** with respect to the risk weightage to ensure they have enough capital to cover potential losses.

- If the risk weight for credit card and personal loan portfolios increase, **banks may need to allocate more capital to cover these loans**, and one way to compensate for this is by increasing the interest rates.

Purpose

- The **growth in retail loans,** especially unsecured ones at 25% plus, and increased lending to NBFCs at 30% prompted the RBI's intervention.

- The RBI's decision was driven by concerns about the **rapid growth in retail loans and bank lending to NBFCs**, which together **contributed around 50% of incremental credit in the last 12 months**, according to a Macquarie report.

- The central bank is **cautious about potential risks and wants to preempt any negative consequences.**

- During FY22-2Q24, **NBFCs' unsecured loans grew 75%** vs 45% for the overall system, leading to market-share gains in the system-level personal loan portfolio, according to a Jefferies report.

- At present, exposures in this realm mandate a risk weight of 100%. Credit card loans of scheduled commercial banks (SCBs) currently attract a risk weight of 125% while that of NBFCs attract 100%.

- The apex banking regulator has decided to increase the risk weight to 125% for NBFCs and 150% for SCBs.

Why has it increased?

- To cover the credit risks associated with the lending.

- Coverage: Personal loans, retail loans

- Exclusion: Housing loans, education loans, vehicle loans and loans secured by gold and gold jewelry.

Concerns:

- Higher interest rate for borrowers

- Reduced profit

- Slow loan growth

- Reduced capital adequacy

4.4 Wholesale Price Index

Why in the news?

As per the recent report, India's wholesale prices remained in deflationary mode for the seventh month in a row.

About Wholesale Price Index:

- This index measures the changes in the prices of goods sold and traded in bulk by wholesale businesses.

- It is released monthly by the Economic advisor, Ministry of Commerce and Industries

- Base year: 2011-12

Items covered:

- Primary articles: 22.6%

- Fuel & Power: 13.2%

- Manufactured products: 64.2%

Criticism:

- General public do not buy products wholesale level

- Services are not included under WPI

4.5 Issues in International Taxation

Why in the news?

Recently a judgment related to international taxation in the Assessing Officer vs Nestle case rationalizes a violation of international law and leaves India vulnerable.

Key issues:

Uncertainty in taxation measures:

Taxation-related improbabilities arise not just **due to the actions of the executive but also the judiciary.**

- **Eg:** The Supreme Court of India's recent judgment in the **Assessing Officer Circle (International Taxation) New Delhi vs M/s Nestle SA case,** which disposed of 11 petitions involving corporations such as Nestle (a Swiss multinational company) and Steria (a European company)
  - The critical question in the case was **whether the most favored nation (MFN) clause in tax treaties such as the Double Taxation Avoidance Agreements (DTAAs)** that India has signed, **could be given effect in India without notification** for the same under Section 90 of the Income-Tax Act.
  - This provision allows India to sign tax treaties with other countries to avoid an income being taxed twice.

- This makes doing business in India **difficult for foreign players.**

- India's bilateral DTAAs with the **Netherlands, France, and Switzerland — all three countries are members of the Organization for Economic Co-operation and Development (OECD) — require imposing a 10% withholding tax** (tax on dividends paid by Indian entities of foreign companies to the residents of Netherlands, France, and Switzerland).
  - These **DTAAs also contain an MFN provision.**

- Thus, if India extends a preferential tax treatment to any third country "which is a member of the OECD", the same treatment should be accorded to the Netherlands, France, and Switzerland under their respective DTAAs.

- India's DTAAs with **Slovenia, Colombia, and Lithuania have a lower withholding tax requirement of 5%**.

  - When India signed DTAAs with these countries, they were not OECD members but joined the group later.

- When the matter initially came before the **Delhi High Court**, it held that **under the MFN provision, the preferential tax in, say, the India-Slovenia DTAA should extend to the India-Netherlands DTAA.**

- However, the **Supreme Court overruled this**, holding that **when the India-Netherlands DTAA was signed, Slovenia was not an OECD member.**

  - Thus, the **benefits given to Slovenia, which became an OECD member later, do not apply to the India-Netherlands DTAA.**

- The judgment **freezes the provision of a treaty in time.**

Most favored nation (MFN):

- Under the **WTO agreements**, countries cannot normally discriminate between their trading partners.
- **Grant someone a special favor (such as a lower customs duty rate for one of their products) and you have to do the same for all other WTO members-** This principle is known as most-favored-nation (MFN) treatment.

- It is so important that it is the **first article of the General Agreement on Tariffs and Trade (GATT)**, which governs trade in goods.
- MFN is also a **priority in the General Agreement on Trade in Services (GATS)** (Article 2) and **the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)** (Article 4), although in each agreement the principle is handled slightly differently.

Some exceptions are allowed.

  - For example, countries can set up a **free trade agreement that applies only to goods traded within the group** — discriminating against goods from outside.

  - They can **give developing countries special access to their markets**.

  - A country can **raise barriers against products that are considered to be traded unfairly from specific countries**.

  - And in services, countries are allowed, in limited circumstances, to discriminate.

  - But the agreements only permit these **exceptions under strict conditions.**

- In general, **MFN means that every time a country lowers a trade barrier or opens up a market, it has to do so for the same goods or services from all its trading partners** — whether rich or poor, weak or strong.

Double Taxation Avoidance Agreements (DTAAs):

- The Double Taxation Avoidance Agreement or DTAA is a **tax treaty signed between**

India and another country (any two/multiple countries) so that **taxpayers can avoid paying double taxes on their income earned from the source country as well as the residence country.**

- At present, India has double tax avoidance treaties with **more than 80 countries around the world**.

- The need for DTAA arises out of the imbalance in tax collection on global income of individuals.

- If a person aims to do business in a foreign country, he/she may end up paying income taxes in both cases, i.e. the country where the income is earned and the country where the individual holds his/her citizenship or residence.

Benefits of DTAA:

- The basic benefit includes not having to pay double taxes on the same income.

- Lower Withholding Tax (Tax Deduction at Source or TDS)

- Tax credits

- Exemption from taxes

Section 90 of the Income-Tax Act:

- **Agreement with foreign countries or specified territories:**
    - **Sub clause 1:** The **Central Government** may enter into an agreement with the Government of any country outside India or specified territory outside India,

(a) **for the granting of relief** in respect of

(i) income on which have been paid both income-tax under this Act and income-tax in that country or specified territory, as the case may be, or

(ii) income-tax chargeable under this Act and under the corresponding law in force in that country or specified territory, as the case may be, to promote mutual economic relations, trade and investment, or

(b) **for the avoidance of double taxation of income** under this Act and under the corresponding law in force in that country or specified territory, as the case may be, without creating opportunities for non-taxation or reduced taxation through tax evasion or avoidance (including through treaty-shopping arrangements aimed at obtaining reliefs provided in the said agreement for the indirect benefit to residents of any other country or territory), or

(c) **for exchange of information for the prevention of evasion or avoidance of income-tax** chargeable under this Act or under the corresponding law in force in that country or specified territory, as the case may be, or investigation of cases of such evasion or avoidance, or

(d) **for recovery of income-tax** under this Act and under the corresponding law in force in that country or specified territory, as the case may be,

and may, **by notification in the Official Gazette, make such provisions as may be necessary for implementing the agreement.**

Doctrine of dualism:

- The Court advocated the doctrine of dualism wherein **international law is not enforceable domestically till it is transformed into municipal law through enabling legislation.**

- This principle has been laid down in cases such as **PUCL vs India, Vishakha vs State of Rajasthan, and Puttaswamy vs Union of India**.

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- o The premise in these cases was the **'presumption of compatibility' or 'presumption of consistency' between domestic and international law.**

4.6 Investment in Coal based sector

Why in the news?

Recently, the government asked private firms to ramp up investments in new coal-fired power plants to meet a dramatic rise in electricity demand.

Key points from news:

- The private investment share in the Indian power sector is only 36% of the total investments.

- Many private players stopped building new coal-based plants in India over a decade ago due to a lack of financing in the absence of long-term power supply bids from consumers.

Reason for seeking investment in coal-based power plant despite efforts on renewable source:

- To meet the high energy demand of the country. Energy demand rose 18% to 20% year-on-year.
  - o New estimates see peak power demand reaching 335-gigawatts by 2030 versus the present 240-gigawatts.
  - o The majority of peak-hour electricity demand could be met by coal-based power stations.

4.7 Inland waterways authority

Why in the news?

Recently, the Union government granted around ₹1100 cr to develop inland waterways in India.

About Inland waterways:

- Inland water transport refers to the transportation of people, goods, and materials via waterways such as rivers, canals, lakes, and other navigable bodies of water that are located within a country's boundaries.

MAP OF INDIA SHOWING IMPORTANT WATERWAYS

- So far, 111 inland waterways have been developed under the National Waterways act 2016.

Six important national waterways in India:

- National waterway 1: Allahabad to Haldia - 1620 km

- National waterway 2: Sadiya to Dhubri in Assam - 890 km

- National waterway 3: Kollam to kottapuram in kerala - 209 km

- National waterway 4: Kakinada to Pondicherry in Godavari and Krishna river - 1095 km.

- National waterway 5: It connects Orissa to West Bengal using the stretch on Brahmani

River, East Coast Canal, Matai River, and Mahanadi River Delta - 623 km

- National waterway 6: Connect Lakhipur to Bhanga in river Barak in assam.

Inland Waterways Authority of India:

- It was created to develop and regulate inland waterways for shipping and navigation.

- Year: 1986

- Nodal Ministry: Ministry of Shipping

- Headquarters: Noida

4.8 MICE Tourism

Why in the news?

Recently, the Ministry of Tourism said that India would host an industry round-table on developing the country as a MICE tourism destination.

What is MICE tourism?

- MICE is a type of tourism in which large groups of people gather at a particular place for a particular purpose.

- MICE is an acronym for **Meetings, Incentives, Conferences and Events/Exhibitions**.

Need:

- Business development

- Tourism and allied sectors development

- Competitiveness among different destinations

Status in India:

- The Government has started a National Strategy on MICE Tourism to enhance the MICE tourism and its infrastructure in India.

- Famous destinations: Chennai, Bengaluru, Gurugram, Mumbai, etc.

4.9 Dollarisation of Currency

Why in the news?

Recently, Javier Milei, the recent winner of Argentina's presidential election, has drawn attention for his unconventional policies, one of them being the plan to replace the country's currency of peso with the dollar.

What is Dollarization of Currency?

- Dollarization is the term for when the U.S. dollar is used in addition to or instead of the domestic currency of another country. It is an example of currency substitution.

Advantages:

- Stable currency

- Wide usage in trade

- Integration into global economy

Disadvantages:

- High volatility from external events

- Loss of central bank's regulatory power

4.10 Passive fund houses

Why in the news?

Recently, India's markets regulator planned to lower capital and disclosure requirements for fund houses that run passive investment schemes.

Key points:

- The proposed new rules would also allow existing fund houses to hive off their passive investment schemes into separate entities to take advantage of the looser regulation.

- The Securities and Exchange Board of India (SEBI) plans to reduce the capital requirement for passive-only fund houses to about ₹100 million from ₹500 million currently.

- Instead of the current requirement of providing portfolio disclosures every two weeks or every month, passive-only fund houses will need to declare that they are following a particular index every six months.

About Passive fund houses?

- A passive fund is an investment vehicle that tracks the performance of a specific market index or benchmark.

- Unlike active funds, which are managed by professional investment managers who aim to outperform the market, passive funds passively track the index's holdings and composition, seeking to match its performance rather than beating it.

4.11 Critical Minerals

Why in the news?

Recently, the Secretary to the Ministry of Minerals said that it would invite bids for the Critical Mineral Blocks.

Key details:

- The Centre had approved royalty rates of 3% each for lithium and niobium and 1% for Rare Earth Elements (REEs).

What is Critical Mineral?

- Critical minerals are mineral resources that are essential to the economy and whose supply may be disrupted.

- The 'criticality' of a mineral changes with time as supply and society's needs shift.

- Recently, the Union government has notified around 30 minerals as critical minerals.

  - o **These minerals are Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium,**

Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE,Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium,Zirconium, Selenium and Cadmium.

- The **Ministry of Mines is fully responsible** for the mining and selling of these minerals.

- A joint venture company namely **Khanij Bidesh India Ltd. (KABIL**) has been incorporated with the equity contribution from three Central Public Sector Enterprises namely, **National Aluminium Company Ltd, Hindustan Copper Ltd and Mineral Exploration Company Ltd** with the objective to identify and acquire overseas mineral assets of critical & strategic nature such as Lithium, Cobalt & others so as to ensure supply side assurance.

- KABIL has engagements with countries like **Argentina, Australia etc.** to acquire critical & strategic minerals assets.

4.12 Onattukara ellu

Why in the news?

Recently, the Kerala government said that efforts are being made to expand the cultivation of geographical indication (GI)-tagged Onattukara sesame in Alappuzha district of Kerala.

About Onattukara sesame:

- Primarily cultivated in the Onattukara region, covering **Alappuzha, Kollam, and Pathanamthitta districts in Kerala.**

- Onattukara ellu and its oil has a high level of health benefits, as it has a high level of **Vitamin E and Antioxidants.**

- The antioxidants fight free radicals, which can destroy the body cells.

- It also has a high level of **unsaturated fat;** unsaturated fat is good for heart patients.

4.13 Milk Production

Why in the news?

Recently, the Union Ministry of Agriculture estimated that India's total milk production would be around 230 million tonnes.

Key details:

- Top milk producing states are **Uttar Pradesh followed by Rajasthan.**
    - These two states comprise around 30% of the total milk production of the country.
- **India is the largest milk producer in the world.**
    - India contributes around 23% of the total milk production in the world.
- **Schemes related to Milk production:**
    - **Dairy Processing and Infrastructure Development Fund:** This fund was established to provide credit support to establish milk processing units value addition across the Country.

4.14 Agriculture imports

Why in the news?

A recent report on agriculture states that India's agricultural imports have doubled in the last one year.

- Free trade agreement is the main reason for this import surge.

About India's agriculture imports:

- India is a net exporter of agriculture items.
- Total value of agriculture exports crossed $50 bn two months ago.

- Top export commodities (By value) : Non basmati > Sugar > Basmati.
- Top export destinations: Bhutan, UAE, USA.
- Top import commodities: Vegetable oil > Cotton > Cashew.

4.15 Bharat Atta

Why in the news?

Recently, the Union government formally launched the sale of wheat flour at a subsidized rate across the country to provide relief to consumers from high prices.

About Bharat Atta:

- This scheme was started to maintain financial stability during festive seasons.
- Wheats from state owned godowns are milled and floured.
- These packaged wheat flours are distributed through state owned cooperative federations such as National Cooperative Marketing Federations and kendriya Bhandra.
- The rate of this wheat flour is ₹27.80 per kilogram.
- Nodal Ministry: Union Ministry of Food and Consumer Affairs.

4.16 Prospects of India's demand and supply for agricultural commodities towards 2030

Why in the news?

Recently, NABARD and Indian Council for Research on International Economic Relations released a report, which states that Supply Demand gap for pulses, oilseeds, fruit to persist over the next seven years.

Key details from the report:

- Commodities like oil seed, pulses, and fruits are expected to experience a supply and demand gap in the coming years.

- As per capita income rises, people will prefer to diversify their food items towards more nutritious foods such as Pulses, Oilseeds and Fruits and away from stables such as rice, wheat etc.

Output shortage

The table shows the gap between projected demand and supply (in million tonnes) for 2025-26 and 2030-31

Food items	2025-26	2030-31
Rice	25.5	37.7
Wheat	15.4	25.5
Coarse cereals	3.2	6.4
Cereals	44.2	69.6
Pulses	-2.1	0.4

Food items	2025-26	2030-31
Foodgrains	42	70
Oilseeds	-3	-6
Milk	31.7	76.2
Fruits	4	10.6
Vegetables	8.3	18.4

SOURCE: NABARD AND ICRIER

Oil seeds:

- Oil seeds production is expected to rise from 35 million to 40 million tonnes (MT) by 2030-31.

- The deficit of oilseeds in the food balance sheet in 2030 is worrisome for the country given the edible oil imports as high as 13.4 MT during 2020-21.

- A technological breakthrough in oilseeds to increase productivity or area expansion are two possible solutions to improve oilseeds' balance sheet in the long run.

- The report reiterated the recommendation of a 2012 report from the Commission for Agricultural Costs and Prices (CACP) to raise the import duty whenever the import price of crude palm oil falls below $800 a tonne to protect Indian producers.

Policy recommendations in the report:

- Diversification towards high value commodities that require major investments in market infrastructure, processing, and cold storage and warehousing facilities to build an efficient and reliable value chain.

5. ENVIRONMENT

5.1 Carbon Border Adjustment Mechanism (CBAM)

Why in the news?

Recently, the Commerce and Industry minister asserted that the **European Union's proposed carbon tax- Carbon Border Adjustment Mechanism, on imports** is an 'ill-conceived' move that would become the "death knell" for its manufacturing sector.

What is Carbon Border Adjustment Mechanism (CBAM)?

- On October 1,2023 the Carbon Border Adjustment Mechanism (CBAM) entered into application in its **transitional phase.**

- CBAM is the **EU's landmark tool to fight carbon leakage** and one of the central pillars of the EU's ambitious **Fit for 55 Agenda.**

- In its **transitional phase**, CBAM will **only apply to imports of cement, iron and steel, aluminium, fertilizers, electricity and hydrogen.**

Sectors covered in the first phase of the CBAM – our environmental policy tool to help maximise the European and global impact of our fight against climate change.

CEMENT   IRON & STEEL   ALUMINIUM
FERTILISERS   ELECTRICITY   HYDROGEN

#EUGreenDeal   European Commission

#EUGreenDeal
European Commission

- EU importers of those goods **will have to report on the volume of their imports and the greenhouse gas (GHG) emissions embedded during their production**, but **without paying any financial adjustment** at this stage.

- CBAM is a **WTO-compatible measure** that encourages global industry **to embrace greener and more sustainable technologies.**

- The transitional phase **will serve as a learning period** for all stakeholders (importers, producers and authorities).

- It will allow the European Commission to collect useful information on embedded emissions in order to refine the methodology for the **definitive period, which starts in 2026.**

Purpose:

- It will **equalize the price of carbon between domestic products and imports.**

- This will **ensure that the EU's climate policies are not undermined by production relocating** to countries with less ambitious green standards or by the replacement of EU products by more carbon-intensive imports.

- To put a **fair price on the carbon emitted during the production of carbon intensive goods that are entering the EU**, and to encourage cleaner industrial production in non-EU countries.

- The gradual introduction of the CBAM is aligned with the **phase-out of the allocation of free allowances under the EU Emissions Trading System (ETS) to support the decarbonisation of EU industry.**

Issues:

- **Measuring Carbon Footprint of an output produced outside the EU jurisdiction:**

  o Estimating the carbon footprint of a product using data on the emissions from the manufacturing plant is **not easy.**

  o When it comes to foreign products, **data on emissions are not always available, or reliable.**

- **Adjustment to local carbon pricing and climate policy with the idea of 'climate clubs':**

  o To level the playing field, **importers should only pay the difference between the domestic carbon price and the one charged to the manufacturer abroad.**

  o Comparing carbon prices are on occasions implicit and **may raise issues:**

    ▪ **With non-tradable emission caps or technological standards**

    ▪ **Expressed in different units- India and China have cap-and-trade systems on emission intensity rather than emissions.**

The Scope of emissions: Direct emissions or also indirect emissions:

- The current EU proposal recommends **including only direct emissions** in the calculation of the product's carbon footprint.
- Although it has the merit of simplicity, **ignoring indirect emissions embedded into inputs**, might not only underestimate carbon footprint but also might create perverse incentives.

The fact that only a subset of raw products or sectors are involved in the CBAM:

- The products and sectors included in the EU CBAM proposal (cement, iron and steel, aluminum, electricity, fertilizers) are inputs for several manufacturing products produced in Europe such as cars and planes.
- By increasing the cost of those products within the EU, the CBAM **might lead to carbon leakage in other sectors downstream the supply chain of manufactured products.**
- Car and plane manufacturers might have access to cheaper steel, electricity, or aluminum by **moving their production plant abroad.**

5.2 Kadalundi Mud Flat

Why in the news?

Recently, the mudflat ecosystem of Kerala's Kadalundi is shrinking and it keeps shorebirds away.

What are mud flats?

- Mudflats refer to land near a **water body that is regularly flooded by tides and is usually barren (without any vegetation).**
- Also known as **tidal flats**, mudflats are f**ormed upon the deposition of mud by tides or rivers**.

- This coastal landform **usually occurs in sheltered areas of the coast like bays, coves, lagoons, estuaries, etc.**

About Kadalundi Mud flat:

- Kadalundi, on the **south-west coast**, had about 8 hectares of nutrient-rich inter-tidal mudflats in the early 2000s.
- Today, the expanse of **mudflats in the estuary of the Kadalundi Puzha river has reduced to just about 1 hectare.**
- This too is **gradually being covered with sand**, **depriving prey to thousands of shorebirds** that migrate from colder climes in winter to Kadalundi village in Kozhikode district.

Significance:

Migratory birds:

- The abundance of prey such as polychaetes and crustaceans in the mudflats **attracts a wide variety of migrant shorebirds** to Kadalundi from places such as Siberia, Ladakh, Mongolia, and Scotland.
- It is a stopover for migratory birds traveling along

Carbon sequestration: The wetlands and grasslands have the capacity to sequester more carbon than many types of forests.

Issues facing:

Decreasing extent:

- Researchers point out that if the mudflats are **not protected and restored,** Kadalundi will vanish from the global map as a prominent destination of migrant shorebirds in a few years.

Increasing Mangroves:

- Efforts were made to popularize ecotourism in the Kadalundi-Vallikunnu Community

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Reserve (KVCR) by widening the expanse of mangroves.

- The 154-hectare KVCR **had less than 50 hectares of mangroves** until a few years ago, but these trees that thrive in salt water have proliferated so fast that they **currently occupy more than 60 hectares.**

- **Increasing mangroves does not attract shorebirds** coming from colder regions as they prefer open mudflats to be safe from predators.

5.3 White Cheeked Macaque

Why in the news?

Recently, Indian scientists found out White Cheeked Macaque in two places in Arunachal Pradesh.

About White Cheeked Macaque:

- It was first discovered by the Chinese scientists in 2015 in Southern Tibet.

- White- Cheeked Macaques are distinct from other macaques found in the region by displaying white cheeks, long and thick hairs on the neck area, and a longer tail.

- It is endemic to eastern himalayas.

- It has not been included under the Wildlife Protection Act 1972.

5.4 Mussels

What are Mussels?

- Mussels have two hard, **external shells and soft tissue inside.**

- They also have **only one foot.**

- The movement of mussels is limited. Most mussels stay in one place for their entire lives, but some mussels use their single foot to move around on the riverbed.

- It is living in **both saltwater and freshwater.**

- Most of which live on exposed shores in the intertidal zone, attached by means of their **strong byssal thread ("beard") to a firm substrate.**

Significance:

- Freshwater mussels perform an important ecological service by **keeping our streams and rivers clean.**

- Mussel shells can provide habitat for fish, crayfish, aquatic insects, and larval salamanders.

- They **filter** out large quantities of **harmful algae and bacteria.**

- They are called "**Ecosystem engineers",** due to their role in making aquatic habits easier.

5.5 Herbicide glyphosate

Why in the news?

Recently, Monsanto's Roundup weedkiller spray without glyphosate being used in Ercuis near Paris.

About Glyphosate:

- It is a systemic herbicide and crop desiccant, discovered in 1970.

- It is used to kill weeds, especially annual broadleaf weeds and grasses that compete with crops.

- The Union Ministry of Agriculture and Farmers Welfare decided to restrict the Glyphosate usage through a notification 'Restriction on use of Glyphosate Order, 2022.

Issues:

- Up to 24% of glyphosate applied to hard surfaces can be run off by water.

- Some studies suggest that it can cause cancer.

Applications:

- It is very effective in killing a wide variety of grassess, broad leaves etc.

- Eradication of invasive species and habitat restoration

- Glyphosate is also used for crop desiccation to increase harvest yield and uniformity.

5.6 Bio gas blending

Why in the news?

Recently, the government said that India will start blending compressed biogas with natural gas to boost domestic demand and cut reliance on natural gas imports.

Key details:

- The mandatory phased introduction will start at 1% for use in automobiles and households from April 2025.

- The share of mandatory blending will then be increased to about 5% by 2028.

  - **Note: India imports more than 50% of its total natural gas consumption.**

- The government also aims to have 1% sustainable aviation fuel (SAF) in aircraft turbine fuel by 2027, doubling to 2% in 2028. The SAF targets will initially apply to international flights.

About Biogas:

- Biogas is an environmentally-friendly, renewable energy source produced by the breakdown of organic matter such as food scraps and animal waste.

- Biogas is a renewable fuel that's produced when organic matter, such as food or animal waste, is broken down by microorganisms in the absence of oxygen. This process is called anaerobic digestion.

5.7 International Energy Agency

Why in the news?

Recently, the International Energy Agency (IEA) estimates that oil and gas operations account for around 15% of total energy-related emissions globally, or about 5.1 billion tonnes of greenhouse gas emissions.

About International Energy Agency (IEA):

- The International Energy Agency (IEA) is a Paris-based autonomous intergovernmental organization that provides policy recommendations, analysis and data on the entire global energy sector.

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- Year: 1974
- Headquarters: Paris, France Members: 31.
  - **India is an associate member.**
- Publication: Annual **World Energy Outlook.**

6. SCIENCE AND TECHNOLOGY

6.1 Chondrocytes- Haemoglobin

Why in the news?

Recently an article published in Nature has revealed that **hemoglobin isn't used by RBCs alone.** In a study, scientists from China have reported that **chondrocytes** – **cells that make cartilage, the connecting tissue between bones** – **also make hemoglobin and seem to depend on it for their survival.**

Key points from the news:

- The scientists ascertained that the chondrocytes within the growth plates of newborn mice were not only **producing large amounts of haemoglobin,** but also that **it was coalescing and forming large blobs without a membrane.**
  - The scientists called these blobs **haemoglobin bodies, or Hedy.**
- Removing the gene that made haemoglobin specifically in the cartilage tissue also resulted in cell death among the chondrocytes.
  - It was clear that Hedy was essential for the chondrocytes to live.
- **In RBCs, haemoglobin carries oxygen and makes sure that different parts of the body receive the oxygen to function correctly.**
- Cartilage that didn't contain haemoglobin showed signs of hypoxic stress.

  - This proved that haemoglobin also carries oxygen in Chondrocytes.
- The research further confirmed that the chondrocytes were most likely storing oxygen and supplying it to the cells when required.
- The scientists also found that cartilage in regions outside the growth plate, like the one in the ribs or the spine of mice, also contained haemoglobin.

6.2 Wolbachia bacteria

Why in the news?

Recently as a part of a new wave of solutions in the world's battle against malaria, dengue and yellow fever among other diseases, the disease transmitting mosquitoes are being disarmed using **Wolbachia bacteria.**

About Wolbachia bacteria:

- Wolbachia are **extremely common bacteria** that occur naturally in 50 per cent of insect species, including some mosquitoes, fruit flies, moths, dragonflies and butterflies.
- Lives inside insect cells and is **passed from one generation to the next** through an insect's eggs.
- **Aedes aegypti mosquitoes don't normally carry Wolbachia**, however many other mosquitoes do.
- They are **safe for humans and the environment.**

- These bacteria cannot only r**educe the fitness and the reproductive capacities of arthropod vectors**, but also **increase their resistance to arthropod-borne viruses (arboviruses).**

Function and Significance:

- Wolbachia blocks viruses like dengue, chikungunya and Zika from growing in the bodies of Aedes aegypti mosquitoes.

- This means that Wolbachia mosquitoes have a reduced ability to transmit viruses to people.

- When Wolbachia is established in a mosquito population it results in a decreasing incidence of dengue, Zika, chikungunya.

- So, at the World Mosquito Program, we breed Wolbachia mosquitoes. Then, in partnership with local communities, we release them into areas affected by mosquito-borne diseases.

- Which means less risk of disease in communities where Wolbachia is established in the local mosquito population.

- Our Wolbachia method can protect communities from mosquito-borne diseases without posing risk to natural ecosystems. Unlike most other initiatives, our method is natural and self-sustaining.

- The World Mosquito Program has received regulatory approval from relevant government bodies in all the countries where we are releasing Wolbachia mosquitoes.

6.3 Zika Virus

Why In the news?

Recently, the Karnataka Health Department, which has been closely monitoring the situation in

Chickballapur after a **mosquito pool in Thalakayalbetta village of the district was found to be positive for Zika**, has sent serum samples of 30 pregnant women from five villages in the containment zone to the National Institute of Virology (NIV) for testing.

About Zika virus:

- Zika virus is transmitted **primarily by Aedes mosquitoes,** which **bite mostly during the day.**

- Zika virus infection **during pregnancy can cause infants to be born with microcephaly and other congenital malformations** as well as **preterm birth and miscarriage.**

- Zika virus infection is **associated with Guillain-Barré syndrome, neuropathy and myelitis in adults and children.**

- In **February 2016**, **WHO declared Zika-related microcephaly a Public Health Emergency of International Concern (PHEIC)**, and the **causal link between the Zika virus and congenital malformations** was confirmed.

    o WHO declared the **end of the PHEIC in November of the same year.**

Origin:

- Zika virus is a mosquito-borne virus **first identified in Zika forest, Uganda in 1947 in a Rhesus macaque monkey** followed by **evidence of infection and disease in humans in other African countries in the 1950s.**

- The **first human cases** were detected in **1952 in Uganda and Tanzania.**

Spread:

- Zika virus is **primarily transmitted** by infected mosquitoes of the A**edes**

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(Stegomyia) genus, mainly Aedes aegypti, in tropical and subtropical regions.

- These mosquitoes **also transmit dengue, chikungunya and urban yellow fever.**

- Zika virus is **also transmitted**

    o From mother to fetus during pregnancy,

    o Through sexual contact,

    o Transfusion of blood and blood products

    o Possibly through organ transplantation.

Detection:

- The diagnosis of a Zika virus infection is mostly through **genetic testing.**

    o An **antibody-based test would be complicated** because antibodies produced by the infection can cross-react with those of the dengue (DENV), yellow fever, and West Nile viruses.

Epidemiology and Surveillance:

- The Zika virus has an **RNA genome,** and thus a **very high potential to accumulate mutations.**

National Institute of Virology (NIV):

- ICMR- National Institute of Virology (NIV), is **one of the major Institutes of the Indian Council of Medical Research (ICMR).**

- It was established **at Pune, Maharashtra State in 1952 as Virus Research Centre (VRC)** under the **auspices of the ICMR and the Rockefeller Foundation (RF), USA.**

- It was an outcome of the **global programme of the RF for investigating the Arthropod Borne viruses.**

- The **RF withdrew its support in 1967** and since then the **Institute is entirely funded by the ICMR.**

- The VRC acquired its **status of national importance and was renamed as National Institute of Virology (NIV) in 1978.**

- It has been designated as a **WHO H5 reference laboratory for the SE Asia region.**

- The NIV is identified today as the **WHO Collaborating Centers for arboviruses reference and hemorrhagic fever reference and research.**

- NIV is also the **National Monitoring Centre for Influenza, Japanese encephalitis, Rota, Measles, Hepatitis and Coronavirus.**

National Centre for Vector Borne Diseases Control (NCVBDC):

- The National Center for Vector Borne Diseases Control (NCVBDC) **administers an umbrella programme, namely, National Vector Borne Diseases Control Programme (NVBDCP)** for prevention and control of vector borne diseases namely

    o **Malaria,**

    o **Japanese Encephalitis,**

    o **Dengue,**

    o **Chikungunya,**

    o **Kala-azar and**

    o **Lymphatic Filariasis.**

- Out of them three diseases namely, **Malaria, Lymphatic Filariasis and Kala-azar are targeted for elimination.**

- **Malaria, Dengue and JE are outbreak prone and climate sensitive**.

- The **States/UTs are responsible for implementation** of the programme, whereas **NCVBDC provides technical and financial assistance** to the States/UTs in the form of cash & commodity, under the overarching umbrella scheme of National Health Mission (NHM).

- Under National Center for Vector Borne Diseases Control the **offices under the Ministry of Health and Family Welfare** are entrusted with the responsibility of **conducting the entomological studies in collaboration with zonal entomological setup** of the state, **drug resistance studies, cross checking of blood slides for quality control, capacity building of the states,** etc.

6.4 Avian Influenza

Why in the news?

Recently, the Health Ministry said that there is low risk to India from both the avian influenza cases reported from China as well as the clusters of respiratory illness.

Key points:

- The statement comes following reports indicating clustering of cases of respiratory illness in children in northern China for which World Health Organization (WHO) has also issued a statement.

- The Ministry maintained that it is closely monitoring the reported outbreak of H9N2 cases and clusters of respiratory illness in children in northern China.

- The overall risk assessment by WHO indicates a low probability of human-to-human spread and low case fatality rate among human cases of H9N2 reported to WHO so far.

About Avian Influenza:

- According to the US Centers for Disease Prevention and Control, Avian Influenza refers to the disease caused by infection with Avian Influenza Type A viruses.

- These viruses naturally spread among aquatic birds and can infect domestic poultry and other bird and animal diseases.

- Bird flu viruses do not normally infect humans.

About H9N2:

- This virus has low pathogenicity in poultry.

- This virus is very important because of their high adaptability and frequent infections in humans.

- H9N2 viruses are constantly evolving and can reassort with other influenza A virus subtypes, resulting in novel influenza viruses.

Symptoms:

- Infections range from mild, flu-like symptoms or eye inflammation to severe, acute respiratory disease or death.

What to do?

- Maintaining personal and hand hygiene, including washing hands with soap, before and after contact with animals is essential to avoid being infected by the virus.

6.5 Mabella vaccine

Why in the news?

Recently, a Vaccinemaker Indian Immunologicals (IIL) has unveiled measles and rubella vaccine Mabella for children.

- The live attenuated MR vaccine has been developed in partnership with Polyvac Institute, Vietnam.

About the Mabella vaccine:

- This measles and rubella vaccine was developed by using live attenuated virus technology.

- Mabella is a two-dose injectable vaccine.

  o First dose will be given at nine-month age and second dose will be given at the age of 16-24 months.

6.6 IXCHIQ Vaccine

Why in the news?

Recently, the US Food and Drug Administration approved a vaccine for Chikungunya virus called Ixchiq.

About the Ixchiq Vaccine:

- It is the **first vaccine** developed against Chikungunya virus.

- It can be administered to **those over 18 years of age.**

- It was developed by **Europe's Valneva.**

- It is administered as a **single dose** via injection into the muscle.

- It contains a **live, weakened version of the chikungunya virus**, potentially causing symptoms akin to the disease in vaccine recipients.

6.7 NISAR

Why in the news?

Recently, NASA officials stated that the **NASA-ISRO Synthetic Aperture Radar (NISAR)** is **set to be launched in the first quarter of 2024** after a few tests, particularly those related to vibration.

Key points from news:
- NISAR is expected to be launched from the Satish Dhawan Space Centre at Sriharikota

on board an **ISRO Geosynchronous Satellite Launch Vehicle Mark-II (LVM-2).**

About NISAR and its purpose:

- NISAR is a **low-earth orbit observatory** being **jointly developed by ISRO and NASA.**

- The mission has a **three-year duration** and will **survey all of the earth's land and ice-covered surfaces once every 12 days.**

- This will **start after a 90-day satellite commissioning period.**

- As a result, it **will provide spatially and temporally consistent data for understanding changes in the planet's ecosystems, ice mass, vegetation, biomass, sea-level rise, groundwater, and natural hazards.**

- NISAR will **reveal the dynamics of carbon storage and uptake in wooded, agricultural, wetland, and permafrost ecosystems and the response of ice sheets to climate change, and the interaction of sea ice and climate.**

- The satellite is **equipped with a synthetic aperture radar in two frequencies and an antenna reflector.**

  o It carries **L and S dual band Synthetic Aperture Radar (SAR)**, which operates with Sweep SAR technique to achieve large swaths with high resolution data.

- The SAR payloads **mounted on Integrated Radar Instrument Structure (IRIS)** and the **spacecraft bus are together called an observatory.**

- In all, NISAR is with a **mass of 2.8 tonnes**, and will be **powered by solar panels.**

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- The six-foot spacecraft bus will host command and communication systems for the payload.
  - The 'bus' will **also support the radar antenna reflector and its boom**.

- There is enough fuel aboard to support at least five years of operations.

6.8 Nike Apache Rocket

Why in the news?

Recently, the launching day of Nike Apache rocket sixty Years ago, on November 21, 1963, from Thiruvananthapuram has been observed.

About Nike Apache rocket:

- It is a 715-kg Nike Apache rocket that soared from a small launch pad, in Thiruvananthapuram in 1963.

- It rose 208 km into the sky and released a sodium vapour payload, which bedecked the twilight sky with an orange nebula.

- The launch was an international effort under the United Nations. The rocket came from the U.S., the payload from France, and the range clearance from an Mi-4 helicopter from the then Soviet Union. The rocket and payload engineers were Indians.

Significance:
- The launch set India on a journey that saw two more milestones before the country became part of an elite international group.
- The first was the launch of India's first truly indigenous rocket, on February 22, 1969, that weighed around 10 kg.

- The second came on July 18, 1980, when its home-grown Satellite Launch Vehicle-3 (SLV-3) rocket, weighing 17 tonnes, placed the 35-kg Rohini satellite in orbit.

6.9 Malligyong - 1

Why in the news?

Recently, North Korea successfully put a military spy satellite called Malligyong-1 into orbit.

About Malligyong-1:

- It is the first reconnaissance satellite of North Korea.

- It was launched in 2023.

- It was launched by the new launch vehicle of North Korea, Chollima 1.

6.10 Teenage Galaxies

Why in the news?

Recently, the Webb space telescope spotted 'teenage' galaxies.

About Teenage galaxies:

- These galaxies formed about 2-3 billion years after the Big Bang.

- They resemble human teenagers, including by displaying growth spurts along with a bit of immaturity.

- These teenage galaxies have very unique chemical DNA, which indicates that they

have formed a decent number of stars but are still growing rapidly.

- The gas detected in star-forming regions of teenage galaxies was much hotter, at about 13,350 degrees C, than observed in galaxies today.

6.11 GPS Spoofing

Why in the news?

Recently, the Directorate General of Civil Aviation (DGCA) issued an advisory to Indian airlines detailing mitigating measures to be taken in the event of spoofing of (fake) navigational signals.

What is GPS Spoofing?

GPS spoofing happens when someone uses a radio transmitter to send a counterfeit GPS signal to a receiver antenna to counter a legitimate GPS satellite signal.

About Geo Navigational Satellite System (GNSS):

Global navigation satellite system (GNSS) is a general term describing any satellite constellation that provides positioning, navigation, and timing (PNT) services on a global or regional basis.

- Europe - Galileo, t
- USA - NAVSTAR Global Positioning System (GPS),
- Russia - GLONASS
- China - BeiDou Navigation Satellite System
- India - IRNSS – NAVIC.

6.12 Freemartins

Why in the news?

Recently, a scientific study says the Freemartin phenomenon occurs in approximately 90% of such twin pregnancies in cattle.

About Freemartins:

- In animal husbandry, **cattle** that are born **exhibiting characteristics of both sexes are called freemartins.**

- Freemartins are sterile female cattle that result from the twinning of a male and a female within the same uterus.

- This phenomenon occurs in approximately 90% of such twin pregnancies in cattle.

- The **key reason is the exchange of blood between the male and the female fetuses during gestation.**

- Genetically, freemartinism is attributed to the sharing of cells carrying the Y chromosome from the male twin with the female twin.

- This chromosome triggers the development of male reproductive organs in the male fetus, while the female fetus, affected by the presence of male hormones, experiences incomplete development of its reproductive system.

- The end result is that the freemartin has an underdeveloped or non-functional reproductive tract.

- In agricultural settings, because freemartins can't reproduce, farmers often identify them through physical and/or behavioral traits to cull them from the breeding herd to improve reproductive efficiency.

6.13 Raychaudhuri

Why in the news?

Recently, the **birth centenary of** Raychaudhuri **has been observed.**

Raychaudhuri and his contributions:
Early life: Raychaudhuri was born in Barisal (now in Bangladesh) in 1923 and educated in Kolkata.

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- After completing his MSc in physics from Science College, he joined the Indian Association of Cultivation of Science (IACS) to pursue experimental physics research.

Raychaudhuri equation:

- In general relativity, the Raychaudhuri equation is a fundamental result describing the motion of nearby bits of matter.

- It showed the **volume would always decrease regardless of how curved the spacetime was.**

Influence: The **Raychaudhuri equation was central to Hawking's famous area theorem**, which proved that the **surface area of a black hole never decreases.**

7. DISASTER MANAGEMENT

7.1 Rat mining

Why in the news?

Recently, Rat mining' technique employed at the Silkyara tunnel collapse site.

About Rat mining:

- Rat-hole mining is a method of manual drilling, which is carried out by skilled workers, most common in **Meghalaya**.

- Narrow pits are dug into the ground, usually just wide enough for one person to fit into.

- After digging the pits, the miner drops down into the holes using a rope and bamboo ladders.

- This method is usually used to extract coals, and is considered extremely hazardous.

- It is illegal in many countries due to increasing cases of miners dying from asphyxiation, lack of oxygen and hunger.

- Rat-hole mining is banned in India, as an unscientific and dangerous occupation, but is still practised as the only livelihood option in areas with thin coal seams, predominantly seen in Meghalaya; the coal is extracted by digging small pits, three to four feet wide, which are entered by the workers, often children. These skills were, however, invaluable at Silkyara.

8. SECURITY

8.1 Bulava Missile
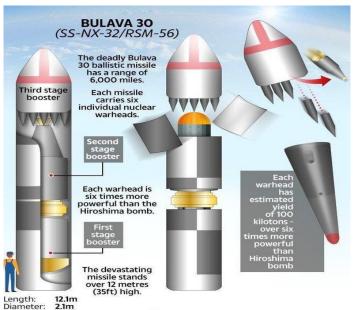
Why in the news?

Recently, Russia successfully test-launched an **intercontinental ballistic missile capable of carrying nuclear warheads** from one of its submarines. The launch of the **"Bulava" missile** comes as Russia ramps up nuclear rhetoric since revoking its ratification of a key nuclear test ban treaty.

About Bulava missile:

- It is a new **submarine launched Intercontinental ballistic missile.**

- It is designed to carry **as many as six nuclear warheads.**

- It was launched from the new **nuclear-powered strategic missile submarine cruiser Emperor Alexander the Third.**

  o The Emperor Alexander the Third is **one of Russia's new B602 × 1,173 orei-class nuclear submarines that carry 16 Bulava missiles each** and

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are more maneuverable and quieter than previous models.

BULAVA 30
(SS-NX-32/RSM-56)

The deadly Bulava 30 ballistic missile has a range of 6,000 miles.

Each missile carries six individual nuclear warheads.

Third stage booster

Second stage booster

Each warhead is six times more powerful than the Hiroshima bomb.

First stage booster

The devastating missile stands over 12 metres (35ft) high.

Each warhead has estimated yield of 100 kilotons – over six times more powerful than Hiroshima bomb

Length: 12.1m
Diameter: 2.1m

The K-535 Yuri Dolgoruky is part of the Borei class of nuclear submarines.

It has a top speed of 15 knots on the surface and 29 knots when submerged.

The huge submarine carries a crew of up to 130, including 55 officers.

It measures 170m in length and carries up to 16 Bulava 30 missiles

K-535 YURI DOLGORUKY

- The 12-meter-long (39 ft) Bulava missile was designed to be the **backbone of Moscow's nuclear triad** and has a **range of more than 8,000km (5,000 miles).**

- Its **Western reporting name is SS-N-32**.

  o Its **START treaty designation is RSM-56.**

- **Development** of this missile commenced in **1998.**

  o The Bulava was **first deployed and declared operational in 2013.**

- The Bulava is a **3-stage solid-fuel missile.**

- The Bulava has an **Astro-inertial guidance with Russian GLONASS satellite navigation system update.**

Strategic Arms Reduction Treaty (START I) treaty:

- The Strategic Arms Reduction Treaty (START I), signed in 1991, was a bilateral arms control treaty between the United States and the Soviet Union.

- The result of the agreement was the first significant reduction in the number of strategic nuclear weapons in both the U.S. and the Soviet stockpiles.

- It entered into force in 1994, after the Soviet Union's dissolution, and eventually expired in 2009.

New START treaty:

- The treaty, which caps the number of strategic nuclear warheads that the US and Russia can deploy, was signed by former US President Barack Obama and his Russian counterpart Dmitry Medvedev in 2010.

- It came into force in February 2011 and was extended in 2021 for five more years after US President Joe Biden took office.

8.2 Iskander M ballistic missile

Why in the news?

Recently, Russia bombarded Kyiv with Iskander M ballistic missiles.

About Iskander M ballistic missiles:

- It is a mobile short range ballistic missile system developed and used by Russia.

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- They can attain maximum speed of Mach 5-6 with an altitude range upto 50 km.

- Maximum range of this ballistic missile is 500 km.

- It is frequently used by Russia against Ukraine.

8.3 Indo Pacific Maritime Domain Awareness

Why in the news?

Recently, the Indian Navy Chief said that the IndoPacific Maritime Domain Awareness (IPM DA) initiative, announced by the Quad grouping, is a testament to the commitment to a free, open, inclusive and rules based Indo Pacific.

About Indo Pacific Maritime Domain Awareness:

- This initiative was launched by the **Quad grouping in Tokyo summit 2022.**

- Main objectives are constant monitoring of dark shipping and ensuring a free and open Indo Pacific region.

- This integrates Pacific Islands, Southeast Asia, Indian ocean regions into the Indo Pacific concept.

8.4 Poppy Cultivation

Why in the news?

Recently, an UN report states that Poppy cultivation and opium production have **plunged 95% in Afghanistan s**ince Taliban authorities banned the crop

Key points:

The **report by the United Nations Office on Drugs and Crime (UNODC)** found that poppy cultivation has collapsed from 2,33,000 hectares in 2022 to 10,800 in 2023.

Distribution of poppy cultivation in the world:

- **India** is the only country authorized by the United Nations Single Convention on Narcotic Drugs (1961) to produce gum opium.

- **Eleven (11) other countries, i.e, Australia, Austria, France, China, Hungary, the Netherlands, Poland, Slovenia, Spain, Turkey and Czech Republic** cultivate opium poppy, but they do not extract gum.

  o They cut the bulb with 8-inch of the stalk for processing in its entirety. This method is known as Concentrate of Poppy Straw process (CPS).

Its products:

- Poppy seeds are **derived from the opium poppy plant, Papaver somniferum.**

- The milky latex found in the unripe seed capsule of the opium poppy is used to **produce opium, morphine, codeine, and heroin.**

- **Opium alkaloids,** such as **morphine, codeine, thebaine, noscapine, and papaverine,** have been detected on poppy seeds.

About UNODC:

- The United Nations Office on Drugs and Crime (UNODC) is a **global leader in the fight against illicit drugs and international crime**, in addition to being responsible for implementing the United Nations lead programme on terrorism.

- **Established in 1997**.

- Its **headquarters are in Vienna** and it operates 20 field offices, as well as liaison offices in New York and Brussels.

- The United Nations Office on Drugs and Crime (UNODC) **contributes to global peace and security, sustainable development and human rights by helping to make the world safer from drugs, crime, corruption and terrorism.**

8.5 Sea guardian 3

Why in the news?

Recently China and Pakistan are planning to conduct the third edition of the Sea Guardian-3 bilateral naval exercise in the **northern Arabian Sea** with Chinese media reporting that the two sides will also hold their maiden joint maritime patrol.

Key points:

- The exercise comes just a day after the **2+2 Ministerial dialogue between India and the U.S**. where **maritime security in the Indo-Pacific** was in focus and **New Delhi announced its decision** to **become a full-member of the Bahrain-based U.S.-led multilateral grouping Combined Maritime Forces (CMF)**, of which Pakistan is also a member.

- The exercise also comes days after **Russia and Myanmar held their first naval exercise in the Andaman Sea.**
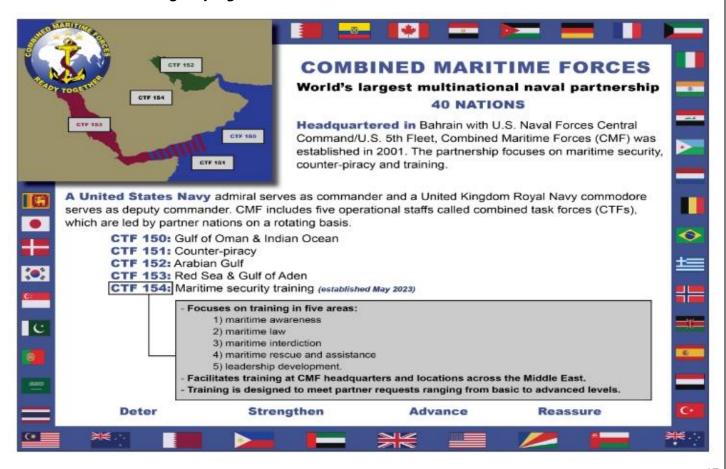
About Sea guardian 3:

- **It is a bilateral Naval exercise between China and Pakistan.**

'Dharma Guardian' is the **joint military exercise** between **India** and **Japan**

Combined Maritime Forces (CMF):

- The Combined Maritime Forces (CMF) is a multinational maritime partnership, which exists to uphold the Rules-Based International Order (RBIO) by countering illicit non-state actors on the high seas.

- It promotes security, stability, and prosperity across approximately 3.2 million square miles of international waters, which encompass some of the world's most important shipping lanes.

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8.6 Vajra Prahar

Why in the news?

Recently, the Special forces of India and USA conducted joint military exercise in Meghalaya.

Key details:

- Vajra prahar 2023 is the 14th such exercise aimed at sharing the best practices and experiences in areas such as joint mission planning and operational tactics.

- The U.S. contingent is represented by personnel from the 1st Special Forces Group, while the Indian Army contingent is led by the Special Forces personnel from the Eastern Command.

- The first edition of the joint exercise was conducted in **2010**.

Other India - US military exercises:

- Yudh Abhiyas

8.7 Second anti-piracy patrol in Gulf of Guinea

Why in the news?

Recently, the Indian Navy has completed its **second anti-piracy patrol in the Gulf of Guinea (GoG) in the Atlantic Ocean.**

Key points:

- The **offshore patrol vessel INS Sumedha**, which is on an extended range operational deployment and is currently operating in the Atlantic Ocean along the west coast of Africa, undertook a 31-day anti-piracy patrol.

- The **maiden** Gulf of Guinea anti-piracy patrol was undertaken by **INS Tarkash in September-October 2022.**

- The region is critical for India's national interests as it is an important source for India's energy requirements.

  o Deployment also ensured enhancing **Navy-to-Navy connection with regional Navies, including Senegal, Ghana, Togo, Nigeria, Angola and Namibia.**

  o Another highlight of the deployment was the ship's participation in the maiden India-EU Joint Exercise.

  o INS Sumedha made a **port call at Walvis Bay, Namibia** as **part of the Mission Based Deployment to West Africa and Atlantic.**

- Professional interactions aimed a**t exchanging best practices, cross-deck visits and social engagements** were conducted with Namibia's Navy in the harbor.

8.8 The ASEAN Defence Ministers Meeting-Plus (ADMM-Plus)

Why in the news?

Recently addressing the 10th meeting of Defence Ministers from countries belonging to the Association of South East Asian Nations (ASEAN) and its dialogue partners in Indonesia, the Indian Defence Minister affirmed that India is committed to the freedom of navigation, overflight, and

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unimpeded lawful commerce in international waters, and supports the 1982 United Nations Convention on the Law of the Sea (UNCLOS).

Key points:

- The **maiden ASEAN-India maritime exercise was held in May.**

- **India and Indonesia** are **co-chairs of ASEAN's expert working group on humanitarian assistance and disaster relief activities in the 2020-2023 cycle.**

About ASEAN Defence Ministers Meeting-Plus (ADMM-Plus):

- The ASEAN Defence Ministers Meeting-Plus (ADMM-Plus) is a **platform to strengthen security and defense cooperation for the 10 ASEAN member States (Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam)** and t**heir eight dialogue partners India, Australia, China, Japan, New Zealand, the Republic of Korea, Russia, and the United States** which are collectively known as the **Plus countries.**

- **India** became an ASEAN **dialogue partner in 1992**, and the **inaugural ADMM-Plus was convened in 2010.**

- Since **2017, the ADMM-Plus Ministers** have been **meeting annuall**y to bolster the

cooperation amongst the ASEAN and the Plus countries.

- The ADMM-Plus progresses **practical cooperation amongst member countries** through **seven Experts Working Groups (EWGs)** namely

  o Maritime Security,

  o Military Medicine,

  o Cyber Security,

  o Peacekeeping Operations,

  o Counter Terrorism,

  o Humanitarian Mine Action and

  o Humanitarian Assistance & Disaster Relief (HADR).

- During the 10th ADMM-Plus, the next set of co-chairs for the cycle 2024-2027 would also be announced.

- In the present cycle from 2021-2024, India is co-chairing EWG on HADR along with Indonesia.

8.9 Fentanyl

Why in the news?

Recently, the U.S. President Joe Biden and Mexican President Andres Manuel Lopez Obrador pledged to work together to tackle the fentanyl issue.

About synthetic opioid fentanyl:

- Fentanyl is a potent synthetic opioid drug approved for use as an **analgesic** (**pain relief) and anesthetic.**

- It is approximately 100 times more potent than morphine and 50 times more potent than heroin as an analgesic.

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- Similar to other opioid analgesics, fentanyl produces effects such as:
  - Relaxation, euphoria, pain relief, sedation, confusion, drowsiness, dizziness, nausea and vomiting, urinary retention, pupillary constriction, and respiratory depression.

8.10 Computer Emergency Response Team (CERT-In)

Why in the news?

Recently, the Union government has added the Computer Emergency Response Team (CERT-In) among a list of organizations that are exempted from the ambit of the Right to Information Act (RTI).

Key points from news:

- There are 26 other intelligence and security organizations established by the Union government such as the Intelligence Bureau, Research and Analysis Wing, Directorate of Enforcement, National Technical Research Organisation that are exempt under RTI.

- The RTI Act, enacted in 2005, states that the legislation shall not apply to intelligence and security organizations specified in the Second Schedule, "provided that the information pertaining to the allegations of corruption and human rights violations shall not be excluded."

About CERT-In:

- The CERT-In is the national nodal agency for responding to computer security incidents.

- **Year**: 2004

- **Nodal Ministry:** Ministry of Electronics and Information Technology.

- It is **not a statutory body.**

Functions under Information Technology Act 2000:

- . Collection,analysis and dissemination of information on cyber incidents.

- Forecast and alerts of cyber security incidents

- Emergency measures for handling cyber security incidents

- Coordination of cyber incident response activities.

- Issue guidelines, advisories, vulnerability notes and whitepapers relating to information security practices,procedures, prevention,response and reporting of cyber incidents.

- Such other functions relating to cyber security as may be prescribed

9. SCHEMES AND INITIATIVES

9.1 Government e- Marketplace

Why in the news?

Recently, a new report on GeM states that the procurement of goods and services from the government portal GeM has crossed ₹2 lakh crore

so far, this fiscal due to higher buying activity by different ministries and departments.

Key points:

- Government e-Marketplace achieves an impressive **₹2 lakh crore gross**

merchandise value in just eight months of 2023-24.

- In 2021-22, the procurement value stood at ₹1.06 lakh crore. It crossed ₹2 lakh crore last year, and going by the trend this year, it may cross ₹3 lakh crore.

- GeM has over **63,000 government buyer organizations** and **over 62 lakh sellers and service providers.**

About GeM and its purpose:

- The government e-Market (GeM) portal was **launched in August 2016,** for **online purchases of goods and services by all the central government ministries and departments.**

Purpose:

- Facilitates online procurement of common use Goods & Services required by various Government Departments / Organisations / PSUs.

- Aims to enhance transparency, efficiency and speed in public procurement.

- It provides the tools of e-bidding, reverse e-auction and demand aggregation to facilitate the government users, achieve the best value for their money.

9.2 PM-PVTG Development Mission

Why in the news?

Recently, PM Narendra Modi launched the ₹24,000-crore PM-PVTG Development Mission and a Viksit Bharat Sankalp Yatra focused on government scheme saturation to the last mile in tribal districts.

Who are PVTGs?

- Particularly Vulnerable Tribal Groups are a **more vulnerable group among tribal groups in India.**

- These groups have
  - **primitive traits,**
  - **geographical isolation,**
  - **low literacy,**
  - **zero to negative population growth rate and**
  - **backwardness**.

- Moreover, they are largely dependent upon hunting for food and a pre-agriculture level of technology.

- In **1973, the Dhebar Commission** set up a separate category for Primitive Tribal Groups (PTGs).
  - In **1975, the Centre identified 52 tribal groups as PTGs**.
  - In **1993, 23 more groups were added** to the list.
  - Later, in **2006, these groups were named PVTGs.**

- Currently, there are **2.8 million PVTGs belonging to 75 tribes across 22,544 villages in 220 districts across 18 states and Union Territories in India.**

- According to the 2011 Census, **Odisha has the largest population of PVTGs at 866,000.**
  - It is **followed by Madhya Pradesh at 609,000 and Andhra Pradesh (including Telangana) at 539,000.**
  - The **largest PVTG is Odisha's Saura community, numbering 535,000.**

About PM-PVTG Development Mission:

- For the **holistic development of around 28 lakh PVTGs** in the country.

- The mission is aimed to **improve socio-economic conditions of the particularly vulnerable tribal groups (PVTGs)** by saturating PVTG families and habitations with **basic facilities such as safe housing, clean drinking water and sanitation, improved access to education, health and nutrition, road and telecom connectivity, and sustainable livelihood opportunities.**

- The **Ministry of Tribal Affairs** is the Nodal Ministry for overall policy planning and coordination of programs for development of STs.

- Besides, 42 Central Ministries / Departments have been mandated by NITI Aayog for **earmarking a certain percentage of their total Scheme allocation every year for tribal development** including education, health and economic empowerment.

- The scheme is meant to bring **11 key interventions like the PM-Gram Sadak Yojana, PM-Gram Awaas Yojana, Jal Jeevan Mission, etc.** by coordinated work of nine ministries to **about 22,500 villages across 18 States and Union Territories.**

9.3 SATHEE Portal

Why in the news?

Recently, the Ministry of Education wrote a letter to all the states to encourage them to use JEE examinations.

About Self-Assessment Test and Help for Entrance Exams:

- It is an online coaching platform, jointly developed by the **Ministry of Education and IIT Kanpur.**

- SATHEE is an **open learning platform** available to students for free.

- SATHEE has launched a 45-day crash course for aspirants to test their level of preparation.

- SATHEE hosts live and recorded lectures, expertly designed curriculum, and doubt clearing sessions [for students] to brush up their knowledge.

- The portal uses artificial intelligence (AI) to interact with students, and can be customized to each student's pace of learning.

- SATHEE's integrated AI chatbot helps students align their learning needs.

- The initiative is in line with the National Education Policy, with the goal to provide inclusive, high quality education even to remote parts of the country.

9.4 PM POSHAN

Why in the news?

Recently, the Union Ministry of Education has approached the Central Bureau of Investigation (CBI) to start a probe into alleged irregularities in the midday meal scheme in West Bengal.

About Pradhan Mantri Poshan Shakthi Nirman scheme:

- The PM POSHAN (POshan SHAkti Nirman) Scheme was started for providing **one hot cooked meal** in **Government and Government-aided schools**.

- Time period: **2021-22 to 2025-26**.

- It is a **Centrally-Sponsored Scheme.**

- **It comes under the Department of School Education & Literacy, Ministry of Education.**

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- Coverage: All school children studying in Classes I-VIII in Government, Government-Aided Schools.

- **Tithi Bhojan:** The concept of Tithi Bhojan will be encouraged extensively. Tithi Bhojan is a community participation programme in which people provide special food to children on special occasions/festivals.

- **Nutrition garden:** School Nutrition Gardens in schools to give children first-hand experience with nature and gardening. The harvest of these gardens is used in the scheme providing additional micro nutrients. School Nutrition Gardens have already been developed in more than 3 lakh schools.

- **Social Audit** of the scheme is made mandatory in all the districts.

- Special provision is made for providing supplementary nutrition items to children in aspirational districts and districts with high prevalence of Anemia.

9.5 PM JANMAN

Why in the news?

Recently, the Union Cabinet approved a special development mission for Particularly Vulnerable Tribal Groups (PVTG) with a total outlay of over ₹24,104 crore over a three-year period.

- o This scheme was announced in the 2023 budget.

About PM Janjati Adivasi Nyay Maha Abhiyaan (PM-JANMAN):

- This scheme was started to improve the overall **socio-economic conditions of the 75 tribal groups recognised as particularly vulnerable.**

- It will focus on 11 critical interventions, part of existing schemes, and will be implemented by nine Ministries.

- **Aims**:

  - o Build 4.9 lakh pucca houses

  - o Lay 8000 km of connecting roads

  - o Bring piped water to all households in 22,000 villages

  - o Community water pipelines to 2500 PVTG villages.

  - o Build 2500 anganwadi centers

  - o Set up 1000 mobile medical units

  - o Install mobile towers in 3000 villages

  - o Set up 500 Can Dhan Vikas Kendras

  - o Vocational training by the Skill Development Ministry.

9.6 One Nation One Ration Card

Why in the news?

Recently, the Central government said that the extension of the PM Garib Kalyan Anna Yojana will be helpful for the migrant workers.

- Because, migrant workers can avail the benefits of the National Food Security Act anywhere across the country under one nation one ration card initiative.

About One Nation one Ration Card initiative:

- This scheme was launched **under the National Food Security Act in 2020** during the last phase of the Atmanirbhar Bharat Abhiyan.

- Under this scheme, **migrant workers can purchase ration products from any ration shops across the country by using their ration cards**.

- All the beneficiaries of the National Food Security Act can avail the benefits of One Nation One Ration Card scheme.

- **MERA RATION** mobile app was launched to provide real time information to the beneficiaries.

- **Nodal Ministry:** Ministry of Consumer Affairs, Food, and Public Distribution.

9.7 One Nation One Registration Platform

Why in the news?

Recently, the National Medical Commission has launched 'One Nation One Registration Platform'.

About One Nation One Registration Platform:

- **Main objectives of the Platform:**
    - Elimination of duplication
    - Avoid red tape
    - Access to Information of medical professionals.

- The NMC will unveil a patch pilot of the **National Medical Register** (NMR) in the next six months where doctors will be allotted a **unique identification number** and then can also apply for their license to work in any State depending on where they are.

- The panel has signed an MoU with the **Quality Council of India for rating medical institutions.**

9.8 PM Kisan Bhai scheme

Why in the news?

Recently, the Ministry of Agriculture said that the Union government would start a new scheme called PM Kidan Bhai.

About PM Kisan Bhandaran Incentive:

- This scheme was established to help Small and Marginal farmers to store their products at warehouses.

- **Nodal Ministry**: Ministry of Agriculture and Farmers Welfare

- Farmers can store their products for a minimum of three months.

- This initiative grants farmers the autonomy to decide when to sell, in contrast to the current practice where most crops are sold around harvest.

- This is seen as an attempt to break the monopoly of traders in deciding crop prices.

9.9 Deendayal Antyodaya Yojana

Why in the news?

Recently, the Union Cabinet has decided to provide drones to 15,000 progressive women self-help groups (SHG) to be rented out to farmers for agricultural purposes.

Key points from news:

- **Start year: 2024-25**

- Total financial outlay: ₹1261 cr

- Time period: **2024- 2026**

- **Beneficiaries**: The groups would be identified from the total 89 lakh SHGs formed under the Deendayal Antyodaya Yojana.

- **Appropriate clusters** where usage of drones is economically feasible will be identified.

Government assistance:

- **Financial assistance:**
    - **80% of the total cost of drones** (upto 8 lakh) will be borne by the Central government.

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- o The drone pilot will get an honorarium of ₹15,000 and a co-pilot about ₹10,000.
- **Skill training:**
  - o A well-qualified member of the SHG, aged 18 and above, will be elected for a **15-day training for agriculture purpose of nutrient and pesticide application.**
  - o Another member of the group will be selected for training as technician or assistant.

About Deendayal Antyodaya Yojana:

- **Deendayal Antyodaya Yojana - National Rural Livelihoods Mission** (DAY-NRLM) is the flagship program for promoting poverty reduction through building strong institutions for the poor, particularly women, and enabling these institutions to access a range of financial services and livelihoods.
- Nodal Ministry: **Ministry of Rural Development (MoRD)**
- Year: 2011

Key features:

- At least one-woman member from each identified rural poor household, is to be brought under the Self Help Group (SHG) network in a time bound manner.

- o It provides **Revolving Fund (RF)** and **Community Investment Fund** (CIF) as resources in perpetuity to the institutions of the poor, to strengthen their institutional and financial management capacity and build their track record to attract mainstream bank finance.

- **Components**:
  - o **Mahila Kisan Shasakthikaran Pariyojana:** Empowerment of women in agriculture
  - o **Aajeevika Grameen Express Yojana** : Facilitating SHG members to operate public transport services in backward rural areas, as identified by the States.
  - o **Startup Village Entrepreneurship Program:** Promotion of startup enterprises in village areas.
  - o **National Rural Livelihood Project:** It was started to create 'proof of concept', build capacities of the Centre and States and create an enabling environment to facilitate all States and Union Territories to transit to the NRLM.

10. PLACES IN NEWS

10.1 Klyuchevskoy volcano

Why in the news?

Recently, **The Klyuchevskoy volcano**, **one of the highest active volcanoes in the world**, erupts **in Russia's northern Kamchatka Peninsula.** Huge ash columns erupted from Eurasia's tallest active volcano, forcing authorities to close schools in two towns in the region

Location:

10.2 Atlanta Bay

Why in the news?

Recently, the Minister of Ports, Shipping and Waterways said that a bulk cargo transhipment hub can be developed in Atlanta Bay near Diglipur in the Andaman and Nicobar (A&N) Islands.

About Atlanta Bay:

- Atlanta Bay is a natural harbor located on the northern coast of South Andaman Island.

- It is a deep and sheltered bay with a natural draft of 19 meters, making it suitable for large ships.

- The bay is also strategically located, being close to the shipping lanes between India and Southeast Asia.

- The Indian government has plans to develop Atlanta Bay into a major port. This would involve constructing a new harbor, a container terminal, and other infrastructure.

10.3 Golan

Why in the news?

Recently, India supported the UN resolution against Israel for not leaving the Syrian Golan.

Key points:

- The resolution, introduced by Egypt, was adopted by 91 votes in favor, eight against and 62 abstentions. Australia, Canada, Israel, the U.K. and the U.S. voted against it.

- The resolution also stressed the illegality of the Israeli settlement construction in the Golan.

About Golan:

- The Syrian Golan is a region in southwest Syria that was occupied by Israeli forces on June 5, 1967.

- **Border Countries:** Israel, Jordan, Lebanon.

- **India has not recognized** Golan heights as Israel territory and has called for the return of Golan Heights to Syria.

10.4 Eilat port

Why in the news?

Recently, Israel's new Arrow missile defense system shot down two salvos of incoming fire hours apart as it approached the country's key Red Sea shipping port of Eilat.

About Eilat Port:

- It is one of the important ports of Israel.

- It was constructed between 1952 and 1956.

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- Its main objective was to have trade with far eastern countries.

- Through this port, Israeli ships do not need to sail the Suez Canal to reach the Indian Oceans.

11. PERSONALITIES

11.1 Sardar Vallabhai Patel

Why in the news?

Recently Prime Minister Narendra Modi paid tribute to Sardar Vallabhbhai Patel at the Statue of Unity in Narmada,Gujarat, on the **birth anniversary of India's first Home Minister,** which is celebrated as **National Unity Day.**

About Statue of Unity:

- It is the **world's tallest statue** with a **height of 182 meters.**

- The statue is located in Gujarat **on the Narmada River** in the Kevadiya colony,standing on **Sadhu Bet, an islet** near and **facing the Sardar Sarovar Dam** 100 kilometres (62 mi) southeast of the city of Vadodara.

- Emerged as a major tourism hub.

About Patel and his contributions:

Early stages:

- In **1924, Patel was elected President of the Ahmedabad Municipal Board.**
    - o Taking charge, he revamped the drainage, sanitation, cleanliness and water distribution systems of Ahmedabad.

- **Role in freedom struggle:**
    - o He integrated the **farmer's cause in Kheda Satyagraha (1918) and Bardoli Satyagraha (1928)** with the national freedom movement.

        - ▪ A successful lawyer by profession, his life encountered a turning point when **Mahatma Gandhi chose him as his deputy commander to lead the Kheda Satyagraha in 1918.**

    - o Women of Bardoli **bestowed the title 'Sardar'** on Vallabhbhai Patel, which means **'a Chief or a Leader'.**

- **Salt Satyagraha:**
    - o During the 1930 Salt Satyagraha (prayer and fasting movement), Sardar Patel served three months imprisonment.

- **INC president:**
    - o In March 1931 Patel **presided over the Karachi session (46th session)** of the Indian National Congress which was **called upon to ratify the Gandhi-Irwin Pact.**

- **Fight against Social issues:**
    - o Further, he worked extensively **against alcohol consumption, untouchability, caste discrimination and for women emancipation** in Gujarat and outside.

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Contribution in post-Independence India:

- **Role in Framing Constitution:** He headed various Committees of the Constituent Assembly of India, namely:
  - Advisory Committee on Fundamental Rights.
  - Committee on Minorities and Tribal and Excluded Areas.
  - Provincial Constitution Committee.
- **Integration of the Princely States:**
  - Sardar Patel played a key role in the integration of about 565 princely states into the Indian Union.
  - He is known as the **"Iron Man of India" for playing an important role in unification and integration of Indian princely states** into the Indian federation and for convincing princely states to align with the Indian Union.
- He was the **first deputy prime minister and home minister of independent India** and he also **took charge of the Information and Broadcasting Ministry.**
- **All India Services:**
  - He contributed to the creation of All India Services.
  - He had envisioned these services as the **'Steel frame of India'** that would **further safeguard the country's unity and integrity.**
  - He considered the **officers of the Services as partners in administration** and expected them to **maintain the highest standards of integrity and honesty.**

Books:

- Bharat Vibhajan
- Gandhi, Nehru, Subhash

- Kashmir Aur Hyderabad
- Arthik Evam Videsh Neeti
- Chuna Hua Patra Vyavhar- Sardar Patel
- Bharat Vibhajan: Introduction of the two-nations theory
- Musalman aur Sharnarthu: Muslims and Refugees

About Aarambh:

- The GoI has launched the **first ever common foundation course** called the **"Aarambh" for civil servants at the Statue of Unity, Kevadia, Gujarat in 2019.**
- Aarambh is an initiative to **bring all the probationers of All India Service, Group-A Central Service and Foreign Service together for a Common Foundation Course (CFC)** with the vision **to break the silos of departments and services** from the very beginning of the career of a civil servant.
- Aarambh aims at **making the civil servants capable of leading the transformation and work seamlessly** across departments and fields.

11.2 Birsa Munda

Why in the news?

Recently, PM Narendra Modi paid tribute to freedom fighter Birsa Munda on his birth anniversary in Jharkhand.

About Birsa munda and his contributions:

Situation of Jharkhand tribals in the 18th century:

- The Munda tribe inhabited the Chota Nagpur region of today's Jharkhand.
- When Birsa Munda was born in 1875, the British were attempting to establish control

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over and exploit forest lands, disrupting the tribal way of life.

- o This was done in part by allying with local zamindars, who helped force the tribals into bonded labour.

- A **feudal zamindari system was introduced, destroying the tribal "Khuntkatti" agrarian and land ownership system** that was more community-based.

- The Raj **brought in outsiders — moneylenders and contractors, as well as feudal landlords — to aid them.**

- Many revolts were witnessed, such as the **Sardari Larai movement of the 1880s** that **demanded the restoration of tribal rights through non-violent methods.**

  - o However, the colonial regime did not agree with the demands.

- The zamindari system soon heavily encroached on the tribals' right to livelihood and land ownership.

Role of Birsa Munda:

- From **1886 to 1890**, **Birsa Munda spent a large amount of time in Chaibasa,** which was **close to the centre of the Sardari agitation.**

- The Sardars' activities had a strong impact on him and he became a part of the anti-missionary and anti-government programmes.

- By the time he left Chaibasa in 1890, **Birsa was strongly entrenched in the movement against the British oppression of the tribal communities.**

- Birsa soon emerged as a tribal leader who brought people together on fighting for these issues.

  - o He **became a God-like figure, with him leading the faith of 'Birsait'**.

- Soon, **members of the Munda and Oraon communities started joining the Birsait sect** and it turned into a challenge to British conversion activities.

Ulgulan Movement:

- The Ulgulan movement of 1899 also involved the **use of weapons and guerrilla warfare to drive out foreigners.**

- Munda encouraged the tribals to **refuse following colonial laws and paying rent.**

- He encouraged changes in the social sphere too, **challenging religious practices to fight against superstition**, and became **known as 'Bhagwan' (God) and 'Dharati Aba' (Father of the earth) by his followers.**

- But the British were soon able to halt the movement. On **March 3, 1900, Munda was arrested** by the British police while he was sleeping with his tribal guerilla army at Jamkopai forest in Chakradharpur.

- It is believed he **died in Ranchi jail** due to an illness on June 9, 1900, at the young age of 25.

11.3 Guru Nanak

Why in the news?

Recently, the birth anniversary of Guru Nanak was celebrated.

About Guru nanak:

- He was born in 1469, in Nankana Sahib, which is located in Pakistan.

- He is the **founder** and **first guru of Sikhism.**

- He advocated the **'Nirguna'** (devotion to and worship of formless divine) form of bhakti.

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- He **rejected sacrifices, rituals, image worship, austerities.**
- He spoke **against caste and gender discrimination.**
- Nanak's teachings laid the ground for the emergence of a distinct faith.
- Among his followers were both lower-caste Hindus and Muslim peasants.
- Death: 1539, in Kartarpur, Punjab.

11.4 Fathima Beevi

Why in the news?

Recently, the first woman judges of the Supreme Court, Fathima Beevi died.

About Fathima Beevi:

- She was born in Kerala in 1927.
- In 1958, she joined the judiciary as munsiff.
- She became the first woman member of the country's Income Tax Appellate Tribunal, before becoming the first Muslim woman to enter the higher judiciary as a judge in the Kerala High Court in 1983.
- She then went on to become the first woman judge in the Supreme Court of India in 1989.
- She was the Governor of Tamil Nadu from 1997 to 2001.

12. REPORTS AND INDEX

12.1 WHO Global TB Report

Why in the news?

According to the recently release WHO Global TB Report, there was a major global recovery in the number of people diagnosed with TB and treated in 2022, after two years of COVID-related disruptions

Key points:

- While this has started to reverse or moderate, **TB remains the world's second leading cause of death from a single infectious agent**, and **global TB targets have either been missed or remain off track.**
- The **net reduction from 2015 to 2022 was 8.7%**, far from the **WHO End TB Strategy milestone of a 50% reduction by 2025.**
- The reported global number of people **newly diagnosed with TB was 7.5 million in 2022.**
  - This is the highest number since WHO began global TB monitoring in 1995, above the pre-COVID baseline (and previous historical peak) of **7.1 million in 2019, and up from 5.8 million in 2020 and 6.4 million in 2021.**
- **India, Indonesia and the Philippines**, which collectively **accounted for nearly 60% of the reduction** in the number of people newly diagnosed with TB in 2020 and 2021, recovered to above 2019 levels in 2022.
- TB caused an **estimated 1.30 million deaths in 2022**, again almost back to the level of 2019.
- **COVID-related disruptions** are estimated to have **resulted in almost half a million excess deaths from TB in the three years 2020–2022.**

12.2 Production Gap Report

Why in the news?

Recently, a new report says that many governments plan to produce twice as much fossil fuels in 2030 than would be consistent with limiting warming to 1.5 degrees Celsius, and 69% more than that would be consistent with 2 degrees Celsius.

Key points:

- **151 governments** have pledged to **achieve Net-Zero emissions – or no net emissions from 2050-2070.**

- The latest forecasts suggest that despite promises by governments made as part of the 2015 Paris Agreement that global coal, oil, and gas demand will peak this decade, even without new policies, their forecasts would lead to an increase in global coal production until 2030, and in global oil and gas production until at least 2050, **creating an ever-widening fossil fuel production gap over time.**

About Production Gap Report:

- It is prepared by the **Stockholm Environment Institute (SEI), Climate Analytics, E3G, International Institute for Sustainable Development and the UN Environment Programme (UNEP)**

- **Objective:** To assess governments planned and projected production of coal, oil, and gas against global levels consistent with the Paris Agreement's temperature goal.

- The report analyzes emissions trends for **20 major fossil-fuel-producing countries:**

  - Australia, Brazil, Canada, China, Colombia, Germany, India, Indonesia, Kazakhstan, Kuwait, Mexico, Nigeria, Norway, Qatar, Russia, Saudi Arabia, South Africa, the UAE, the U.K., and the U.S.

12.3 World Economic Outlook

Why in the news?

Recently, the International Monetary Fund has released its semi-annual 'World Economic Outlook'.

Key details:

- It has revised its projected GDP growth rate for India for 2023-24 to 6.3%, up from the earlier 6.1%.

- It reduced the global GDP growth rate from 3% to 2.9%.

- The IMF expects the global inflation rate as 5.8% for 2024.

- Global growth lagged because of tight monetary policies adopted by the central banks around the world.

About World Economic Outlook:

- It is a semi-annual report released by the International Monetary Fund twice a year.

- It contains details about the global economic conditions.

MAINSTORIES

1. POLITY AND GOVERNANCE

1.1 Electoral literacy

Why in the news?

Recently, National Council of Educational Research and Training (NCERT) planned to introduce and update textbooks to include content on **electoral literacy** and will advise the State Education Boards and other Boards to follow suit to **address voter apathy among young Indians.**

Why do we need electoral literacy?

- **Transforming citizens into empowered voters:** 'Electoral Literacy' is a process of transforming citizens into empowered voters by helping them **understand the electoral process, the need to enroll as electors and participate in the elections** in an ethical and informed manner.

- **Well informed electoral participation:** The Election Commission of India (ECI) believes that electoral literacy can help prepare future voters **for ethical and well-informed electoral participation.**

- **Civic engagement:** Electoral literacy is needed to encourage people **to participate in political discussions, debates and community activities.**

  o This will inculcate a sense of **civic responsibility** among the citizens.

- **Accountability:** Citizens who are electorally literate can hold the officials accountable for their actions.

- **Right to Vote:** In a democratic system the **electorate should be made aware of the process and the importance of it**, to exercise his/her right to vote in an informed manner.

- **Building Trust:** When the government takes measures to make the citizens electorally literate, **it builds trust in the electoral process and makes them participate in it.**

  o It fosters **trust in the government and democratic institutions.**

Reason for declining trend of voting in India:

- **Urban Apathy:** The **Chief Election Commissioner (CEC)**, during a recent press conference, pointed out that 'urban apathy' was the **key reason for low voter turnout in Assembly and Parliament elections in cities and towns.**

  o He noted that out of the 20 constituencies with the lowest voter turnout, 11 were urban areas.

  o 'Urban apathy' is not a result of individual subjectivity but a **manifestation of the depoliticised environment and the belief that "nothing can happen".**

- **Demographic shift:** India is in the phase where the young age population is greater than the old age population.

  - In several instances there has been an **absolute decline in voters aged between 20 and 39**, while there has been a **huge increase in voters aged above 50.**

  - The demographic shift combined with lack of willingness among young people to participate in the electoral process reduced the voter turnout.

- **Lack of trust:** Due to **allegations of corruption, unethical behaviors** on the political parties and the candidate contesting in the election, trust in the electoral process gets eroded.

- **Economic factors:** Around **20% of the people in India are living below the poverty line** where their **basic needs are not met.**

  - This makes it **difficult for them to prioritize voting over their survival needs.**

Implications of declining voting trends:

- **Legitimacy of the government:** Lower voter turnout leads to **questioning the legitimacy of the government formed** by the party that turned victorious in the election.

  - This further perpetuates lack of trust in the democratic system.

- **Mismatch between needs of people and public policy:** The government formed with lower voter turnout **will not create policies prioritizing the need and issues addressing the general public** rather will focus on only the limited voter needs that led to their government formation.

- **Decreased accountability:** The **democratic institutions under the control of a government formed with lower public representation can lack accountability and trust of the people.**

- **Risk of polarization:** If only some people vote, the political parties and candidates **will focus their campaign to appeal only to those limited sections of the population.**

  - This might lead to **lack of representation in the government formed** and **risk of political polarization.**

Measures taken by government to ensure increasing voting habit:

- **SVEEP (Systematic Voters Education and Electoral Participation):** Election Commission of India, through this programme aims at **mainstreaming of electoral literacy as a focus are under its Strategic Plan 2016-25**

- **Electhon:** The initiatives taken by the Election Commission to encourage greater participation, such as **engaging with universities, colleges and even secondary schools through a programme called "Electthon".**

- **Electoral Literacy Clubs (ELCs):** An Electoral Literacy Club is a platform to engage school students through interesting activities and hands-on experience to sensitize them on their electoral rights and familiarize them with the electoral process of registration and voting.

    o ELCs are also present in colleges and rural communities.

- **Amendments to RPA, 1950 and 1951:** Citizens now can enrol against three dates by which t**hey qualify as 18 years old and thereby eligible as voters — April 1, July 1 and October 1 — in addition to the earlier January 1 cut-off date** of every year.

    o This strategic reform fulfilled a long-standing demand of the EC to reduce any undue wait for voter eligibility.

    o This might increase voter turnout.

Way forward:

- **Targeting informal sector:** A massive drive needs to be undertaken to ensure the participation of this sector.

    o This can include the participation of employees and workers' unions in the sensitisation exercise.

- **Focusing Students:** Students are another central area for ensuring greater participation.

    o **Holding elections at every college and university campus** is vital for ensuring a political atmosphere.

    o One of the tried and tested ways to **break this barrier of a-politicisation** is to **ensure students' participation in the democratic process on their campuses.**

- **Engaging Urban Local Bodies:** Engaging urban local bodies is another central area that needs to be addressed.

    o People participate more during municipality elections but less during Assemblies or Parliament.

    o There should be a **continuous engagement with these bodies.**

- **Create political environment:** Similar to Electhons as done for the Karnataka elections, there is a pressing need for **Policthons.**

    o This can be a regular exercise wherein residents of cities are engaged, ensuring more participation and politicization.

- **Reorder the agenda of political parties:** Political parties should reorder their agenda so that it can **go beyond the usual identity chasing, populist doles and mutual abuse** so that citizens can feel more participatory rather than just spectators to a seasonal show.

- **Changes in education system:** The education system **needs to be more systematically involved** in electoral practices, rather than staying confined to just letting schools and colleges be turned into voting centers.

Why in the news?

Recently the political behaviour between Odisha and Auckland was scrutinized and found that both regions exemplify the concept of **split voting.** This offers a nuanced understanding of voter behaviour and the efficacy of electoral systems.

About Mixed Member Proportional (MMP) system:

- New Zealand uses the Mixed Member Proportional (MMP) system.

- Under MMP, voters cast two votes:

    o **a 'party vote'** that determines the overall composition of the 120-seat Parliament

        ▪ Uses a **Proportional representation** (**PR**) **system.**

    o **an 'electorate vote'** to elect a local MP for their geographical constituency.

        ▪ The First-Past-The-Post (FPTP) system **method** decides the local MP election.

- There are **72 electorate seats**, and **parties fill the other 48 list seats.**

- To **form a government** in New Zealand, **a party or alliance needs 61 of the 120 seats** in the single-house parliament, which **equates to around 48% of the popular vote.**

- Each party submits a ranked party list to the Electoral Commission of New Zealand before the polls.

- Parties then elect candidates from this list as list MPs.

- The **electorate vote does not alter the overall party representation in Parliament.**

- Voters can split their vote.

    o Giving both votes to one political party is a 'double tick'.

    o Allocating votes to two different parties is a split vote.

- A party must have a winning candidate in a constituency or at least 5% of the national vote to get a seat in parliament.

- Seven of the geographical seats are reserved for representatives of New Zealand's Indigenous Maori people.

- Countries: **Denmark, South Korea, Germany**.

Merits:

- **Accountability:** The split voting system **allows for more localized accountability** for elected representatives.

    o They can't just ride a party wave.

- **Policy focus:** As parties don't need to concentrate on individual candidate winnability, they can emphasize on policies and ideologies to garner party votes.

- **Representation:** MMP improves representation for **women, indigenous communities, differently abled people, and other deprived groups.**

    o Eg: Before MMP's introduction, New Zealand had only a 21% representation of women in 1993; now, 51% of MPs are women.

- **Enhances democracy:** MMP enhances democracy by letting **voters express a diverse range of political preferences without wasting their votes.**

    o **Every party vote gets counted** to determine how many seats a party gets.

- **Flexibility:** System provides flexibility, allowing voters to s**elect the best candidate-party combination according to their beliefs.**

    o Both party and candidate are **chosen by voters in a mutually exclusive manner** with no effect on each other.

- **Average age of MP declines:** After the introduction of MMP, the average age of an MP in New Zealand has considerably declined.

    o It was **47.3 years in the 2020 elections.**

    o This has been possible because of the **low entry barrier for young politicians** because of split voting choices.

Demerits:

- **Tactical voting:** It may prompt tactical voting, where **voters might support a party that they don't necessarily endorse just to keep another party out of power.**

- **Importance:** The vote for their local MP is far less important than the party vote in determining the overall allocation of parliamentary seats.

- **Different classes of MPs:** MMP can create two classes of MPs.

- It has similar disadvantage as List- Proportional Representation system:

    o **Coalition governments:**

        ▪ This can lead to legislative gridlock and the subsequent inability to carry out coherent policies.

        ▪ Quick and coherent decision-making can be impeded by coalition cabinets and governments of national unity which are split by factions.

    o **Destroying link between MP and their constituents:**

        ▪ Some MPs are not directly elected by people and voters have no ability to determine the identity of the persons who will represent them.

About First-past-the-post voting system (FPV):

- The first-past-the-post (FPTP) system is also known as the **simple majority system.**

- In this voting method, the **candidate with the highest number of votes in a constituency is declared the winner**.

- This system is used in India in **direct elections to the Lok Sabha and State Legislative Assemblies.**

- While FPTP is relatively simple, it does not always allow for a truly representative mandate, as the candidate could win despite securing less than half the votes in a contest

- Countries: **USA, Canada, India.**

Why did India choose First-Past-The-Post (FPTP)?

India adopted the First-Past-The-Post (FPTP) system for its parliamentary elections after gaining independence from British rule in 1947.

- **British Legacy:** The British introduced the FPTP system in India during the colonial period to elect members for the legislative councils.

  o This system was also **used in the first general elections held in India in 1951-52.**

  o The familiarity of the system and the fact that it had been established in India for a long time made it easier for India to continue with it.

- **Ease of Implementation**: It requires **minimum infrastructure** and can be **easily understood by the voters.**

  o This is particularly important in a country like India, with a vast and diverse population, where **millions of people are illiterate and have limited access to education.**

- **Regional Representation:** The FPTP system allows for regional representation as it creates a direct link between the voters and their representatives.

  o In a country like India with a **diverse range of languages, cultures, and religions,** this is an essential feature of the electoral system.

- **Stability of Government:** The FPTP system **tends to produce a clear winner**, which leads to a stable government.

  o This is because the **party or the candidate with the majority of votes wins the election**, and there is no need for coalition-building, which can lead to instability and political uncertainty.

Merits:

- **Simple system:** This system is simple to understand and in countries like India with low literacy rate the alternative voting systems will be difficult to understand.

- **Cheaper and quicker to administer:** Conduction elections for FPTP are cheaper than other voting systems and also quicker to count the votes and declare the results.
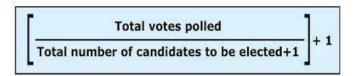
- **Stable government:** It gives rise to a single party government, while coalition governments are the exception rather than the rule.

- **Suitable for Parliamentary government:** The parliamentary system required that the executive should have a majority in the legislature.

  o It was felt by the constitutional makers that the FPTP system would be appropriate for establishing stable government in the parliamentary system.

- **Broadly based political parties:** In severely ethnically or regionally-divided societies, FPTP is praised for encouraging **political parties to be 'broad churches',** encompassing many elements of society, particularly when there are only two major parties and many different societal groups.

  o In FPTP **Malaysia**, for example, the governing coalition is a broad-based movement, and fields Chinese candidates in Malay areas and vice versa.

- **Representative accountability:** True representative accountability depends upon the voters of one area knowing who their own representative is, and having the ability to re-elect, or throw them out, at election time.

  o In this system, MPs are directly elected by the people.

- **Allows voters to choose between people:** It allows voters to choose between people, rather than just between parties.

  o At the same time, **voters can assess the performance of individual candidates**, rather than just having to accept a list of candidates presented by a party, as can happen under some List PR electoral systems.

Demerits:

- **Not representative:** The system is not truly representative, because even a candidate who gets less than half the votes can win the election.

- **Wasted Votes:** Votes which do not go towards the election of any candidate are often referred to as 'wasted votes.'

  o Since only the majority of polled votes are counted to declare a person as elected, the **unpolled votes and NOTA option are being ignored.**

- **Exclusion of minorities:** As a rule, under FPTP, parties put up the most broadly acceptable candidate so as to avoid alienating the majority of electors.

  o **Ethnic and racial minorities are far less likely to be represented in parliaments elected by FPTP.**

- **Could lead to anti-social movements:** Alienation from the political system increases the likelihood that extremists will be able to mobilize anti-system movements.

- **Encourages the development of ethnic parties:** In some situations, FPTP can encourage parties to base their campaigns and policy platforms on hostile conceptions of clan, ethnicity, race, or regionalism.

About Proportional Representation by means of Single transferable vote (PR-STV):

- In India, the **election to the office of president, vice president and members of Rajya Sabha** is held in accordance with the system of proportional representation by means of the single transferable vote and the voting is by secret ballot.

- This system ensures that the **successful candidate is returned by the absolute majority of votes**.

- A candidate, in order to be declared elected must secure a **fixed quota of votes.**

- The quota of votes is determined by dividing the total number of valid votes polled by the number of candidates to be elected plus one and adding one to the quotient.

- Countries: Australia, Canada, Cities in USA, Northern Ireland, Scotland, Wales.

- The formula can be expressed as:

$$\left[\frac{\text{Total votes polled}}{\text{Total number of candidates to be elected} + 1} \right] + 1$$

Merits:

- **Few wasted votes:** Under STV fewer votes are 'wasted'. In other words, fewer votes are cast for losing candidates or unnecessarily cast for a run-away winner.

- **Increases representative accountability:** Most voters can identify a representative that they personally helped to elect.
    - It is argued that this, in turn, increases a representative's accountability.

- **Regional parties and independent candidates:** A more proportional system would give regional parties and independent candidates a better chance of getting into parliament and introduce different voices to nation-building.

- **Consensus:** The proportional representation system **rarely results in one party holding an absolute majority.**
    - It requires political parties to compromise and build consensus.
    - In a country like India, this alternative **reduces the importance of smaller regional parties**, some of which often hold the government to ransom and cause political instability to achieve their narrow goals.

Demerits:

- **Difficulty in Understanding:** Difficulty for the voters to understand the system (which is complicated) due to low literacy scale in the country.

- **Unstable government:** Unsuitability to the parliamentary government due to the tendency of the system to multiply political parties leading to instability in government.

- **Costly:** Conducting elections under the PR-STV system is highly expensive.

- **By-elections:** It does not give any scope for organizing by-elections.

- **Contact between voters and representative:** It eliminates intimate contacts between voters and representatives.

- **Minority:** It promotes minority thinking and group interests.

- **Significance to party system:** It increases the significance of the party system and decreases that of voters.

1.3 Reservation policy

Why in the news?

Recently, the Bihar Assembly unanimously passed a Bill to increase reservation for Backward Classes, Extremely Backward Classes, Scheduled Castes, and Scheduled Tribes from the existing 50% to 65%.

Key points from news:

- Together with the 10% Economically Backward Class (EWS) quota, the **Bill will push reservation in Bihar to 75%**, well past the 50% ceiling set by the Supreme Court

- According to the legislation, named the **Bihar Reservation Amendment Bill**, quota for **Extremely Backward Class (EBC) will be raised from the existing 18% to 25%; for Backward Class (BC) from 12% to 18%; for Scheduled Caste (SC) from 16% to 20%; and for Scheduled Tribe (ST),** the quota will be doubled, **from 1% to 2%.**

- The existing **3% reservation for BC women has been scrapped.**

- The 10% EWS reservation quota has been included in the 35% Open Merit Category. The Bihar government has proposed to raise reservation only for BC, EBC, SC, and ST communities.

- The caste survey report released said **EBCs comprise 36% and BCs 27.1% of the State's 13.1 crore population**. Together the **two caste groups account for nearly 63% of the population.**

Reason behind giving reservation:

The concept of reservation was introduced to combat a long-existing practice of discrimination and stereotyping within the rural Hindu communities, which were divided into castes. Some castes were ranked as higher up, and the others were low-tier, with the former often discriminating against the latter.

- **Objective:**

  o Providing reservations to the Scheduled Castes (SCs), Scheduled Tribes (STs) and Other Backward Classes (OBCs) in services is **not only to give jobs to few persons belonging to these communities, but also aims at empowering them and ensuring their participation in the decision-making process of the State.**

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- **Legal Sense:**

  - The discrimination faced by these marginalized groups was indicative of the **constant oppression faced by them**, dealt out by those considered to be of a 'higher' class than them.

  - The makers of the Constitution felt that these **classes needed to be a part of the law-making procedure**, and special provisions had to be granted to them to incorporate them into the process.

  - This incorporation was meant as an **upheaval process for said backward classes in order to mitigate most of the oppression** faced by them during the casteist era.

  - This was done by **granting them equal rights, opportunities, and special reservations to ensure their participation in the legal framework** of the country.

- **Socio- Cultural Sense:**

  - According to the social and cultural background of casteism and reservation, the varna system in the Hindu religion, consists of the Brahmins, the Kshatriyas and Vaishyas originally.

    - A fourth sect by the name of Shudras also developed who existed as cleaners, meant to serve the three 'higher' sects.

    - Apart from these four sects, people **who were not classified under the varna system were regarded as 'Dalits' or untouchables.**

    - Their **existence and touch were believed to pollute everything near them.**

    - They were **relegated to perform tasks which were considered 'impure' such as cremation, etc.**

    - Over time, **this practice has also bled into other religions like Christianity and Islam,** who discriminate against those who are considered to be of a 'lowly birth'.

  - This created a pertinent reservation in the Indian society and culture t**o save these persecuted communities from further oppression and to promote their development and education**, thus **leading to the formation of the reservation system.**

- **Equal opportunities**

  - The basic purpose of reservation is to **ensure equality of opportunities in education, Government jobs, etc** for **all citizens irrespective of their caste, gender, race, religion, etc.**

  - When all individuals will have equal access to resources, the **backward communities would also be able to uplift themselves** in society.

  - This in turn fulfills the very purpose of the Constitution as given under Articles 15 and 16 of the Constitution.

- **Level playing field:**

  - The true potential of any individual can be judged only when he/she competes with equals.

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- o Reservation **brings the SCs and STs to an equal level to the others** in society.

- o As a result, all of them run the race from the same starting point.

- o This ensures that there is **complete fairness and no discrimination towards any individual or community.**

- **Compensating for past injustices:**

  - o **Certain communities** from a very long time have been **subjected to extreme discrimination and isolation from society.**

  - o They were also not allowed to participate in general society.

  - o Reservation is also an **attempt to compensate for all the injustices these communities have faced in the pas**t and to ensure that they break out of these shackles to start a new journey where they are respected and treated equally.

- **Integration into mainstream society:**

  - o Reservation has brought the disadvantaged sections of society into mainstream society.

  - o They are now no longer treated as outcasts and **have rather become an indispensable part of society.**

- **Increased mobility of labor:**

  - o Reservation has directly ensured that equal opportunities are given to persons regardless of their castes.

  - o As a result, persons belonging to Scheduled Castes or Scheduled Tribes who were bound to perform certain specific jobs could **now easily perform any work which they wished.**

  - o As a result, **they are no longer restricted and can shift from the traditional jobs** which were imposed to the jobs which they want to perform at their own will.

  - o This has helped in ensuring the mobility of labour which has had a positive impact on the Indian Economy.

- **Improvement in quality of administration:**

  - o When all citizens will get equal education opportunities, they would form an extremely educated workforce.

  - o If they then enter into administrative service, they would be able to ensure a much better quality of services for the customers.

Why has reservation demand been growing rapidly?

- **Agriculture Crisis:** The Jats in Haryana, Patels in Gujrat, and Kapus in Andhra Pradesh believe that reservation provides a solution to the rural distress faced by them, especially the crisis in agriculture.
- **Unemployment:** is also one of the major factors influencing the demand for reservation.

- **Privilege:** The agitation for reservation also arises from the fear of losing privilege and the inability to cope with change.
- **Salaries and Wages:** Wages in the private sector are much lower than in the public sector. Salaries of government jobs are most attractive at the entry level
- **Demands of Upper Castes:** Previously advantageous castes have begun to feel severely disadvantaged as they don't get any quotas even if they are economically disadvantaged. Thus, they want to integrate the economically disadvantaged groups among them in the reserved category.

What is the rationale behind the 50% ceiling of Reservation?

- The court judged that anything above 50 percent **would violate equal access as guaranteed by the Constitution.**

- The **Other Backward Classes**, **as identified by the Mandal Commission**, make up **about 52% of India's population according to the 1931 Census**, the last enumeration of castes in the country.

  - The **court has never explained why 50% is "reasonable"** when the **Other Backward Classes alone are at least 52% of the population.**

  - In any case, the 50% ceiling meant the Other Backward Classes received 27% share in the reservation pie while Dalits and Adivasis together got 22.5%, bringing the total to 49.5%.

Reasons for increasing reservation over 50% ceiling:

- **Limit is arbitrary:**

  - The breaching of the 50% ceiling looks like an inevitable historical process.

  - Many political scientists and sociologists view th**e 50% ceiling as arbitrary because the judiciary did not have numbers to back that cap.**

  - For all practical purposes, **some States have already breached this.**

    - **Tamil Nadu provides 69% reservation through a 1994 law**, which it has protected from judicial review by getting it placed under the Ninth Schedule of the Constitution.

- **Reservation in most states already crossed the limit:**

  - The total reservation in almost 80% of the states/UTs has already crossed the 50% ceiling limit.

  - For example, **in Chhattisgarh, the total reservation is 82%, including EWS quota, Madhya Pradesh 73%, Nagaland 80%, Mizoram 80%** etc.

  - In most of the States, the total reservation ranges around 60-65%.

- **Not Sacrosanct:**

  - Indra Sawhney's judgment is **almost a 30-year-old law,** and the **judgment itself laid down that in certain extraordinary or exceptional circumstances**, such a limit could be relaxed.

- - Therefore, the prevailing circumstances demand that the 1992 judgment be revisited as a **court's ruling cannot remain constant and irreplaceable.**

- **Benefit the excluded:**

  - Parliament or the Supreme Court itself should reconsider the 1992 judgment so that the other backward communities who are not eligible to enjoy the fruits of the reservation because of the 50% limit could experience it.

About Reservation system:

- It is a quota based affirmative action in the government institutions and jobs to the marginalized sections in the society.

- **Two types:**

  - Vertical reservation- EWS and OBC, SC, ST.

  - Horizontal reservation- Women, transgender, PWD.

Reservation Category	Reservation Quota (%)
ST	7.5
SC	15
OBC	27
EWS	10
Total	59.50%

- **Article 15 and 16** enables the government to provide reservation in the Government jobs and educational institutions to the marginalized people.

- **Article 330 and 332** provides for specific representation through reservation of seats for SCs and STs in the Parliament and in the State Legislative Assemblies respectively.

- **Article 243D** provides reservation of seats for SCs and STs in every Panchayat.

- **Article 233T** provides reservation of seats for SCs and STs in every Municipality.

- **Article 335** of the constitution says that the claims of SC and STs shall be taken into consideration constituently with the maintenance of efficacy of the administration.

- In the **Indra sawhney case in 1992**, the Supreme Court said that the total reservation quota should not exceed 50% until any special circumstances.

- If the reservation exceeds 50%, then the president's assent is necessary for the validation of the reservation.

  - **Eg. Tamil Nadu reservation act which provides 69% reservation was inserted into the ninety schedules through 76th constitutional amendment act.**

Economically Weaker Section:

- The 10% EWS quota was introduced under the 103rd Constitution (Amendment) Act, 2019 by amending Articles 15 and 16.

  - It inserted Article 15 (6) and Article 16 (6).

- It is for economic reservation in jobs and admissions in education institutes for Economically Weaker Sections (EWS).

- It was enacted to promote the welfare of the poor not covered by the 50% reservation policy for Scheduled Castes (SCs), Scheduled Tribes (STs) and Socially and Educationally Backward Classes (SEBC).

- It enables both Centre and the states to provide reservation to the EWS of society.

1.4 Capital Punishment:

Why in the news?

Recently, the parliamentary committee that examined the Bharatiya Nyaya Sanhita (BNS), the proposed criminal statute likely to replace the IPC, has not made a recommendation to abolish the death penalty.

What is Capital punishment?

- Capital punishment, also called death penalty, **execution of an offender sentenced to death after conviction by a court of law for a criminal offense.**

- Capital punishment should be **distinguished from extrajudicial executions** carried out without due process of law.

- The term death penalty is sometimes used interchangeably with capital punishment, though imposition of the penalty is not always followed by execution (even when it is upheld on appeal), because of the possibility of commutation to life imprisonment.

- The term "Capital Punishment" stands for the **most severe form of punishment**.

- It is the punishment which is **to be awarded for the most heinous, grievous and detestable crimes against humanity.**

- While the definition and extent of such crimes vary from country to country, state to state, age to age, the implication of capital punishment has always been the death sentence.

Capital punishment in IPC:

- Treason for waging war against Government of India

- Murder, Attempted murder by a serving life convict

- Abetment of suicide of a minor or insane person

- Kidnapping for ransom

- Rape and Injury which causes death or leaves a woman in a Persistent Vegetative State

- Rape/ Gang rape of a child below 12 years of age

- Certain repeated offences in the content of rape.

- Dacoity with murder – in cases where a group of five or more individuals commit dacoity and one of them commits murder in the course of that crime, all members of the group are liable for the death penalty

Non-IPC offenses:

- Under Organized crimes act,

- Mutiny, desertion, civil offences- Army act, BSF Act, ITBP force act, The Narcotics drugs and Psychotropic substances act etc.

- Abetment of Sati

- Grave breaches of Geneva conventions

- By common usage in jurisprudence, criminology and penology, **capital sentence means a sentence of death.**

Arguments in favor of Capital punishments:

- **Retribution:** This argument states that real justice requires **people to suffer for their wrongdoing, and to suffer in a way appropriate for the crime.**

  - Each criminal should get what their crime deserves and in the case of a murderer what their crime deserves is death.

- **Deterrence:** Capital punishment is often justified with the argument that by executing convicted murderers, it will deter would-be murderers from killing people.

  - It has a **uniquely potent deterrent effect** on potentially violent offenders for whom the threat of imprisonment is not a sufficient restraint

- **Beneficial:** Some proponents of capital punishment argue that **capital punishment is beneficial even if it has no deterrent effect.**

- **Administer in a manner consistent with Justice:** It is possible to fashion laws and procedures that **ensure that only those who are really deserving of death are executed.**

- **Cost-effectiveness:** While it may seem counterintuitive, proponents of capital punishment argue that it is actually a cost-effective form of punishment.

  - This is because the **cost of keeping an offender in prison for life can be significantly higher than the cost of executing them**.

  - Additionally, the **appeals process for death penalty cases can be lengthy and expensive**, but proponents argue that this cost is offset by the deterrent effect of the death penalty.

- **Public Safety:** Another benefit of capital punishment is that it can improve public safety.

  - Proponents argue that **executing dangerous criminals removes them from society and makes it a safer place.**

  - This is particularly true for individuals who have committed multiple heinous crimes and are unlikely to ever be rehabilitated.

Arguments against capital punishments:

- **Irreversible and Final:** One of the most significant demerits of capital punishment is that it is final and irreversible.

  - Once a person has been executed, there is **no way to undo the punishment, even if it is later discovered that the person was innocent.**

  - This has led to cases of wrongful convictions and executions in the past, which raises serious ethical and moral concerns.

- **Vengeance:** Capital punishment is vengeance rather than retribution and, as such, is a **morally dubious concept.**

- o The anticipatory suffering of the criminal, who may be kept on death row for many years, makes the punishment more severe than just depriving the criminal of life.

- **It doesn't work as deterrence:** The **statistical evidence doesn't confirm** that deterrence works (but it doesn't show that deterrence doesn't work either)

  - Some of those executed may not have been capable of being deterred because of mental illness or defect

  - Some capital crimes are committed in such an emotional state that the perpetrator did not think about the possible consequences

  - No-one knows whether the death penalty deters more than life imprisonment

  - o Deterrence is most effective when the punishment happens soon after the crime - to make an analogy.

    - The **more the legal process distances the punishment from the crime - either in time, or certainty - the less effective a deterrent the punishment will probably be.**

  - o Research points that the **death penalty is not a more effective deterrent than the alternative sanction of life or long-term imprisonment.**

- **Counterproductive in moral message:** By legitimizing the very behavior that the law seeks to repress—killing—capital punishment is counterproductive in the moral message it conveys.

  - o Abolitionists also claim that capital punishment **violates the condemned person's right to life and is fundamentally inhuman and degrading.**

- **Arbitrary and discriminatory:** The historical application of capital punishment shows that any attempt to single out certain kinds of crime as deserving of death will inevitably be arbitrary and discriminatory.

Indian Government's stand:

- **Supreme Court on Validity of Capital Punishment in India**

  - o Article 21 of the Indian Constitution ensures the **Fundamental Right to life and liberty for all persons.**

    - It adds no person shall be deprived of his life or personal liberty except according to procedure established by law.

    - This has been legally construed to mean if there is a procedure, which is fair and valid, then the state by framing a law can deprive a person of his life.

  - o While the **central government has consistently maintained it would keep the death penalty in the statute books to act as a deterrent**, and for those who are a threat to society, the **Supreme Court too has upheld the constitutional validity of capital punishment in "rarest of rare" cases**.

- o In **Jagmohan Singh vs State of Uttar Pradesh (1973)**, then in **Rajendra Prasad vs State of Uttar Pradesh (1979)**, and finally in **Bachan Singh vs State of Punjab (1980),** the Supreme Court **affirmed the constitutional validity of the death penalty.**

  - It said that if capital punishment is provided in the law and the procedure is a fair, just and reasonable one, the death sentence can be awarded to a convict.

  - This will, however, only be in the "rarest of rare" cases, and the courts should render "special reasons" while sending a person to the gallows

- o **Criteria for Rarest of Rare:**

  - The principles as to what would constitute the "rarest of rare" has been laid down by the top Court in the landmark judgment in **Bachan Singh vs State of Punjab (1980).**

  - The Supreme Court formulated certain broad illustrative guidelines and said it should be given only when the option of awarding the sentence of life imprisonment is "unquestionably foreclosed".

  - It was left completely upon the court's discretion to reach this conclusion.

  - However, the apex court also laid down the **principle of weighing, aggravating and mitigating circumstances.**

    - A balance-sheet of aggravating and mitigating circumstances in a particular case has to be drawn to ascertain whether justice will not be done if any punishment less than the death sentence is awarded.

  - Two prime questions, the top court held, may be asked and answered.

    - First, is there something uncommon about the crime which renders the sentence of imprisonment for life inadequate and calls for a death sentence?

    - Second, are there circumstances of the crime such that there is no alternative but to impose the death sentence even after according maximum weightage to the mitigating circumstances which speak in favor of the offenders.

Alternative to Capital Punishment:

- In the last few years, the Supreme Court has entrenched the p**unishment of "full life" or life sentence of determinate number of years** as a response to challenges presented in death cases.
- This has been observed in three judge bench decision in **Swamy Shraddhanand case.**
- The observations in Swamy Shraddhanand case have been followed by the Court in a multitude of cases such as **Haru Ghosh v. State of West Bengal, State of Uttar Pradesh v. Sanjay Kumar , Sebastian v. State of Kerala, Gurvail Singh v. State of Punjab where full life or sentence of determinate number of years has been awarded as opposed to death penalty**

  - o The Court awarded the death penalty to **only seven people from 2007 to 2022**, while all death sentences were **either set aside or commuted to life in 2023**, as they **did not fall under the "rarest of rare cases".**

- **Law Commission:** The Law Commission of India in its **262nd Report (August 2015)** recommended that the **death penalty be abolished for all crimes other than terrorism related offenses and waging war.**

Way forward:

- **Rarest of rare should be followed:** As suggested in the supreme court judgment, the death penalty should be awarded to hardened criminals only in a limited sense.

- **Grounds of justification:** Proper grounds of justifications have to be provided in case of consideration of capital punishment.

- **Prevent errors: Reforms in the police and judicial system** have to be ensured to prevent error in granting capital punishment.

- **Reduce politicization:** In the cases involving rape, henious crimes against women, trade and trafficking of women and narcotics, there is scope of increased politicization which should be avoided and the judgement should be provided based on facts and merit.

Countries exercising and abolishing capital punishment:

- According to the Death Penalty Information Center, **more than 70% of the world's countries have abolished capital punishment in law or practice**.

- As of July 2022, the **most recent countries to outlaw the death penalty are Kazakhstan and Papua New Guinea**, whose laws abolishing capital punishment went into effect on 29 Dec 2021, and 22 Jan 2022 respectively. Malaysia is expected to follow suit later in 2022.

- Data from **Amnesty International** states that at the end of 2021,

    o 108 countries (and growing) had abolished the death penalty in law for all crimes,

    o 144 countries had abolished the death penalty in law or practice,

    o 28 countries had effectively abolished the death penalty by not executing anyone in the past 10 years, and

    o 55 countries still retained the death penalty for ordinary crimes.

- Death penalty is legal in countries like **Afghanistan, China, India, Iran, Irq, Japan, Pakistan, UAE, USA etc.**

1.5 State funding on elections

Why in the news?

Recently there is an increased demand for State funding of elections to address the transparency issue as the transparency in election funding is the central issue in electoral bond schemes.

Reasons for the need of huge amounts of money in election campaigns:

- **Social media, travel and advertising:** The rise in spending is attributed to increased use of social media, travel, and advertising. Social media spending alone is **expected to surge from 2.5 billion rupees in 2014 to about 50 billion rupees.**

    o An estimated **26 billion rupees** will be spent on advertising during the elections, more than double the amount spent by the two main parties in 2014.

    o **Social media platforms** like Facebook are **significant advertising channels.**

- **More candidates joining the race: Constituency sizes are increasing**, and more candidates are joining the race, leading to a general rise in election costs.

    o Indian politicians are resorting to **innovative and sometimes extravagant strategies to attract voters.**

- **Gifts and Inducements:** With over 8,000 contestants vying for around 545 seats, there is **intense competition.**

    o Contestants often distribute gifts such as **cash, alcohol, goods, and even goats to influence voters.**

- **Campaign spending:** Indian politicians conduct extensive campaign rallies, involving **significant expenses for food, security, firecrackers, chairs, microphones, and transportation** to attract large crowds.

    o Political parties bear the majority of election expenses.

    o The Election Commission also incurs significant costs in organizing the election, including logistical challenges like reaching remote areas with polling stations at high altitudes or deep in jungles.

    o Payments to **campaign workers, logistical costs, and wages for hired crowds.**

- **Gift to voters:** A substantial portion of candidates' budgets **(between 19% and 64%**) was spent on gifts to voters.

    o These gifts were often distributed through **lump-sum payments to influential citizens or leaders of associations.**

- **Paid Political Participation:** Candidates reportedly spent **over 10% of their budgets on staff wages**, and **"paid political participation" by ordinary citizens** accounted for a considerable share of candidates' expenses.

Advantages of State funding of elections:

- **Bring transparency:** It is certainly **better than the existing system** where candidates and political parties spend from their own pocket and a lot of money goes into election campaigns.

    o State funding of elections will **help bring some transparency.**

- **Increase internal democracy:** If the party workers know that the party has access to some legitimate funds, they would be able to make demands on their party.

    o It would increase internal democracy and reduce the clout of moneybags within the big parties.

- **Dependence on black money will reduce:** The state funding will not be able to eliminate the usage of black money altogether but the dependence of political leaders and parties on black money will reduce.

- **Natural and necessary:** Political parties and candidates need money for their electoral campaigns, to keep contacts with their constituencies, to prepare policy decisions and to pay professional staff.

    o If a country wants **to have stable political parties and/or independent candidates,** some argue that they also need to be prepared to help pay for them.

- **Curbs corruption:**   If political parties and candidates get at least a basic amount of money from the public purse this has the **potential to limit the likelihood of them feeling the need to accept "interested money" from donors** who want to influence their policies, rhetoric or voting behavior in the legislature.

- **Economic inequalities are not translated into political inequalities:** In many countries, the support base of political parties and candidates are divided along socioeconomic lines.

    o The support base of labor or dalit parties for example, are traditionally less wealthy than the support base of other parties.

    o If political parties receive all their income from private donations, there is a risk that **socioeconomic differences in the society will translate into differences in representation and access to political power.**

Disadvantages of State funding of elections:

- **Increases the distance between political elites and ordinary citizens:** When political parties and candidates do not depend on their supporters or members neither for monetary contributions (membership, donations) nor for voluntary labour, they might be less likely to involve them in party decisions or consult their opinions on policy issues.

- **Preserves status quo:** Public funds are often allocated among political parties and candidates in the national legislature.

    o This may make it **more difficult for new political forces to gain representation.**

    o The legal framework can limit this negative influence by providing special funds for new political parties or candidates.

- **Forcing taxpayers to support political parties:** Many believe that ordinary **taxpayers should not be forced through the public purse to support political parties or candidates** that they would never choose to vote for.

- o Instead, they should have the possibility to decide if and when they want to donate money to a political party or candidate.

- **Diverts money from public goods: Public resources are scarce** and needed for everything from schools and hospitals to roads and salaries for staff.

  - o To many people, using public funds to give to political parties and candidates would be **far down their list of priorities.**

- **Risk of becoming organ of state:** If all or a substantial amount of the party income comes directly from the State rather than from voluntary sources, political parties risk losing their independence and become organs of the State, thereby **losing their ties to the civil society.**

Way forward:

- **Infusing white money:** Any scheme of state funding of elections should be **designed in such a way that it infuses a substantial amount of white money into politics** in ways that are transparent and flexible.

- **Regulating political funding:** A fruitful party funding framework requires attention to at least four key aspects

  - o Regulation of donations, expenditure limits, public financing, and disclosure requirements.

- **Mechanism of state funding should be charted out:** The mechanics of the public funding process need to be carefully worked out **to establish the allocation of money to national parties, State parties and independent candidates, and to check candidate's own expenditure** over and above that which is provided by the state.

Committee's recommendations:

Indrajit Gupta Committee Report:

- **Endorsed state funding of elections**, seeing "full justification constitutional, legal as well as on ground of public interest" in order to **establish a fair playing field for parties with less money.**
- **Limitations:**
  - o State funds should be given **only to national and state parties allotted a symbol** and not to independent candidates.
  - o Most often quoted **in support of public funding of elections**, it says state funding **should be done only in kind and not in cash.**
- It also says that state funding of elections **would be a waste of public resources unless it is accompanied by factors** such as **democratization of political parties and decriminalization of the political process.**
- It says **unless there is internal democracy in political parties**, state funding of elections **will be a waste of public money.**
- The Committee noted that at the time of the report the economic situation of the country **only suited partial and not full state funding of elections.**

Law Commission of India Report of 1999:

- Total state funding of elections is **"desirable" so long as political parties are prohibited from taking funds from other sources.**

- The Commission **concurred with the Indrajit Gupta Committee** that only partial state funding was possible given the economic conditions of the country at that time.

- Additionally, it strongly recommended that the **appropriate regulatory framework be put in place** with regard to political parties (**provisions ensuring internal democracy, internal structures and maintenance of accounts, their auditing and submission to Election Commission**) before state funding of elections is attempted.

Report of the Second Administrative Reforms Commission in 2008:

- Recommended **partial state funding of elections for the purpose of reducing "illegitimate and unnecessary funding"** of elections expenses.

National Commission to review the working of the Constitution Report of 2001:

- **Did not endorse state funding of elections** but **concurred with the 1999 Law Commission report** that the **appropriate framework for regulation** of political parties would need to be implemented before state funding is considered.

Countries funding elections:

- There are some **34 countries** where state funding of elections is available in some form or the other.

- The **highest proportion of state funding of elections is in Norway**, which is about **74% of the total expenses on the election.**

- But there are different models.

    - In some countries only parties get the fund, candidates do not.

    - There are countries where it's the other way round.

- **Germany:**

    - Parties receive public funds on the **basis of their importance within the political system.**

    - Generally, this is **measured on the basis of the votes they received in past elections, membership fees, and the amount of donations received from private sources.**

    - German "political party foundations" receive **special state funding** dedicated to their work as **party-affiliated policy think tanks.**

- **Seattle, US:**

    - A relatively recent experiment in public funding is that of **'democracy vouchers'.**

    - Under this system, the government distributes a **certain number of vouchers to eligible voters.**

    - Each voucher is worth a certain amount.

    - The voters can use these vouchers to donate to the candidate of their choice.

    - While the **voucher is publicly funded, the decision to allocate the money is taken by individual voters.**

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2. INTERNATIONAL RELATIONS

2.1 India- Bhutan Relationship

Why in the news?

Recently, the decision by India and Bhutan to focus on infrastructure and connectivity during talks between Prime Minister Narendra Modi and Bhutan's fifth King Jigme Khesar Namgyel Wangchuck is an important marker towards more bilaterally driven regional initiatives.

Key points

- Prime Minister Narendra Modi expressed India's unwavering support for Bhutan's socio-economic development, aligning with the Himalayan nation's priorities during a meeting with its visiting King, Jigme Khesar Namgyel Wangchuck.

- Both nations also **agreed to enhance cross-border connectivity and expand ties in trade, infrastructure and energy sectors**.

- A joint statement after the bilateral talks between Modi and Wangchuck announced that the two nations reached a consensus on a final location survey for the **proposed cross-border train link between Kokrajhar in Assam and Gelephu in Bhutan.**

- Furthermore, they agreed to **look into the possibility of creating a rail link between Banarhat (West Bengal) and Samtse (Bhutan).**

Why does India need Bhutan?

- **Geographical location:**

  o Bhutan's significance to India stems from its geographic location. Nestled in the Himalayas, it is sandwiched between India and China.

  o Its border with India is over **600 km long.**

  o Thus, it serves as a **buffer between the two Asian giants.**

  o Bhutan's value as a buffer soared after China annexed Tibet in 1951.

- **Economic value:**

  o Bhutan has economic value to India as well. In 2021-22, India's bilateral trade with Bhutan was USD 1422 million, of which India's exports to Bhutan amounted to USD 877 million and India's imports from Bhutan were USD 545 million.

  o It **provides a market for Indian commodities and a destination for Indian investment**.

- **Hydropower:**

  o India also sees **Bhutan as a rich source of hydropower.**

- **Stability:**

  - A **politically stable Bhutan** is important to India.

  - An unstable and restive Bhutan would not only **jeopardize India's investments in that country** but also provide a **haven for anti-India activities and anti-India militant groups.**

- **Security:**

  - Securing Bhutan's present borders, **especially its western border is clearly important for India.**

  - Doklam in the hands of a hostile power would **heighten the vulnerability of India's Siliguri Corridor**, a narrow strip of land that links India to its Northeastern states.

  - So vital is Doklam to India's defense that **India has a permanent and sizable military contingent and an army hospital in Haa district**, where Doklam is located.

Why does Bhutan need India?

- **Net security provider:**

  - The Indian military "is virtually responsible for protecting Bhutan from external and internal threats" and to this end, the **Eastern Command of the Indian Army and Air Force have integrated Bhutan's defense into their role and responsibilities.**

  - The Indian Military Training Team (IMTRAT**) trains Bhutanese security personnel as well.**

- **Economic ties:**

  - India dominates Bhutan's economy. It is Bhutan's largest trade partner;

  - Around **79% of Bhutan's total imports are from India and India provides a market for 90% of its exports.**

- **Financial Aids:**

  - India is Bhutan's largest aid donor. Between **2000 and 2017**, Bhutan received **$4.7 billion in aid from India**, the lion's share of India's total foreign aid.

  - Takshashila Strategic Assessment: Takshashila Policy Advisory India-Bhutan Relations – Fostering the Friendship, India has also **financed much of Bhutan's Five-Year Plans**.

    - The magnitude of its contribution can be gauged from the fact that the **US$750 million it provided for Bhutan's Eleventh Five-Year Plan (2013-18) was 68% of the total assistance that Bhutan received from external sources.**

- **Infrastructure development:**

  - India is also playing an important role in Bhutan's infrastructure development by **building roads and hydro-power projects.**

  - Development of Bhutan's hydropower has not only **provided the Bhutanese with electricity for domestic use but also surplus energy which India purchases.**

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- o Bhutan's **earnings from its export of electricity to India accounts for 40% of all the revenue it earns and 25% of its Gross Domestic Product.**

Economic - strategic- socio cultural relationships:

Friendship treaty:

- The basic framework of India – Bhutan bilateral relations is the **Treaty of Friendship and Cooperation signed in 1949** between the two countries, which was **updated and signed** during the visit to India of His Majesty Jigme Khesar Namgyel Wangchuck in **February 2007.**

  - o The 1949 treaty provides for among others **"perpetual peace and friendship, free trade and commerce and equal justice to each other's citizens."**

  - o Article 2 in the Treaty, in principle, calls for **Bhutan to seek India's advice in external matters, while India pledges non-interference in Bhutan's internal affairs.**

Treaty of 2007:

- **Article 2** of the India- Bhutan Treaty of 1949 is reformulated in the updated treaty to the satisfaction of Bhutan.

  - o In keeping with the abiding ties of close friendship and cooperation between Bhutan and India, the Government of the Kingdom of Bhutan and the Government of the Republic of India **shall cooperate closely with each other on issues relating to their national interests.**

  - o Neither Government shall allow the use of its territory for activities harmful to the national security and interest of the other.

  - o **Article 4** of the new treaty also **permits Bhutan to import arms, immunities** etc., which are essential to strengthen the security of Bhutan **in consultation with India.**

  - o The revised treaty r**ecognizes Bhutan's "Sovereignty and Territorial Integrity-Elements"**, which were absent in the earlier version.

  - o The treaty can also call the **framework for future interaction, highlighting cooperative friendship between the two countries.**

  - o **Formal bilateral relations between Bhutan and India** were established in **January 1968** with the **appointment of a special officer of the Government of India to Bhutan.**

- **Border management:**

  - o There is a **secretary-level mechanism on border management and security related matters.**

  - o There is also a **Border District Coordination Meeting (BDCM) Mechanism between the bordering States and the Royal Government of Bhutan (RGoB)** to facilitate coordination on border management and other related matters.

- **Water Resources:**

- o The hydropower cooperation comes under the **2006 Agreement on Cooperation in Hydropower.**
  - Under a protocol to this agreement, **India has agreed to assist Bhutan in the development of a minimum of 10,000 MW of hydropower and import of surplus electricity from the same by year 2020.**
  - **Four hydro-electric projects (HEPs) totaling 2136 MW** are already operational in Bhutan and supplying electricity to India.
  - The **720MW Mangdechhu** was commissioned in August 2019.
  - Two HEPs namely, **1200 MW Punatsangchhu-I, 1020 MW Punatsangchhu-II in Inter-Governmental mode** and **Kholongchu HEP (600 MWs) under the joint venture mode** are under various stages of implementation.
  - In consultation with the Ministry of Power/DoE, the **implementation formalities of the 2585 MW Sankosh HEP are currently being finalized**
- o Also, there is a **Joint Group of Experts (JGE) on flood management between India and Bhutan.**
  - These Joint Group of Experts (JGE) on flood management between India and Bhutan to discuss/ assess the probable causes and effects of the recurring floods and erosion in the southern foothills of Bhutan and adjoining plains in India and to recommend appropriate measures to both Governments.

- **Economic Cooperation:**
  - o India is Bhutan's leading development partner.
  - o Since the **launch of the First Five Year Plan of Bhutan in 1961**, **India has been extending financial support to Bhutan's FYPs.**
    - **India has allotted Rs 4500 crore to Bhutan's 12th FYP.**
  - o India has also contributed to Bhutan's development **outside the framework of the Five-Year Plans.**

- **Bilateral Trade:**
  - o The trade between the two countries is governed by the **India Bhutan Trade and Transit Agreement 1972 which was last renewed in November 2016.**
  - o The agreement establishes a **free-trade regime between the two countries and provides for duty-free transit of Bhutanese exports to third countries.**
  - o India is Bhutan's largest trading partner. In the period **from January- June 2018, trade between two countries stood at Rs. 4318.59 crore.**
  - o Major **exports from India to Bhutan** are

- - **Mineral products, machinery and mechanical appliances, electrical equipment's** etc.
  - o Whereas **major items of import from Bhutan** are
    - **Electricity, Ferrosilicon, Portland cement** etc.

- **Education and Cultural Cooperation:**
  - o The Government of India provides a **number of scholarships to Bhutanese students**.
    - Government of India scholarships are granted to **Bhutanese students at Undergraduate level every year** to study in prestigious Indian Institutions of higher learning.
  - o Regular **cultural exchanges** take place between the two countries.
  - o One of the **basic objectives of India Bhutan Foundation established in 2003** is to **enhance people to people exchange in the cultural field.**
  - o A number of **Bhutanese pilgrims travel to holy Buddhists sites in India.**
  - o Reflecting the special nature of the relationship, the two countries share an **open border with regular exchange of travelers in both directions for work, tourism, shopping, medical care etc**

- **Labour relations:**
  - o Bhutan's requirement of **semi-skilled and unskilled labour** has been **filled in by expatriates, particularly Indians**, first in road construction and then in other sectors such as mining, agro-based industries and hydropower projects with the shift in development priorities.
  - o There are about **60,000 Indian nationals living in Bhutan** (floating population), employed mostly in the hydro-electric power and construction and road industry.
  - o In addition, between 8000 and 10,000 daily workers enter and exit Bhutan every day in border towns.

Challenges obstructing further improvement of relationship:

- **Close relationship between Bhutan and China:**
  - o Bhutan and China are drawing close to ending the decades-old territorial dispute.
  - o During the visit of Bhutan's first foreign minister to China, both countries even signed a **"cooperation agreement" that outlines the responsibilities and functions of a joint technical team (JTT) tasked with delimiting and demarcating the disputed boundaries.**
  - o **China's exports to Bhutan** have **increased from ~2 billion in 2020 to ~15 billion in 2022.**

- **Border dispute:**

- Border disputes of a **relatively minor nature** existed concerning **part of the border with Arunachal Pradesh, and the region between Sarbhang and Geylegphug**. In 2006 a final border demarcation treaty was signed.

- The 2017 Doklam standoff was a major flashpoint in the India- China- Bhutan tri-junction.

- **Hydropower cooperation:**

  - Though India and Bhutan consider the development of hydropower projects as a win-win, the economic feasibility from the implementation of several projects remains a big concern, particularly on the part of the Bhutanese government.

  - One of the major worries of Bhutan's hydropower sector is the **steep rise in public debt.**

  - However, it has been seen that **since 2007, the hydropower sector's financial performance is deteriorating.**

- **Trade imbalance:**

  - India's merchandise trade with Bhutan has almost tripled from USD 484 million in 2014-15 to USD 1422 million in 2021-22 accounting for about **80% of Bhutan's overall trade,** with the b**alance of trade in India's favor.**

  - In 2021-22, India's bilateral trade with Bhutan was USD 1422 million, **of which India's exports to Bhutan amounted to USD 877 million** and **India's imports from Bhutan were USD 545 million.**

  - Thus India exports more to Bhutan than India creating a huge **trade deficit.**

Way forward:

- **Reaching out to younger Bhutanese:**

  - The umbilical cord of educational connectivity between India and Bhutan is slightly frayed.

  - Recently, much of the negative sentiments, wrong information about India, are on social media in Bhutan.

  - India has to keep up this relationship not just economically, or through a transactional relationship, but by **reaching out to the new generation.**

- **Educational Connections:**

  - India must pay attention to the mood inside Bhutan, develop more understanding of Bhutanese sentiments, and reach out to young Bhutanese people through educational connections.

- **Time bound implementation of the projects:**

  - India's Time bound commitment which is missing on India-Bhutan relationship which makes Bhutan China relationship close, must be addressed by India in an effective and efficient manner.

- o **Environment and social considerations** of various hydro power and infrastructure projects have to be considered.

- **Addressing trade deficit:**

  - o Since Bhutan is in a disadvantageous position in relation to trade, more exports from Bhutan is to be promoted.

- **Border issue with China:**

  - o A border deal that addresses Bhutanese concerns in the north while preserving India's red lines in the west will not necessarily undermine New Delhi's interests.

2.2 India- Bangladesh relations

Why in the news?

Recently, Prime Minister Narendra Modi said that India is proud to be the "biggest development partner" of Bangladesh, speaking on the occasion of the joint virtual launch of three projects, including the historic restarting of the rail connection between Bangladesh and Tripura in Northeast India.

Historical ties:

- India and Bangladesh share not only **close historical, civilisational and cultural links** but have also forged **strong social, economic and political ties over decades since Bangladesh's liberation in 1971.**

Significance:

- Under India's flagship **'Neighbourhood First' policy,** Bangladesh is an important partner.

- The cooperation between the two countries ranges a**cross all fields including trade and commerce, power and energy, transport and connectivity, science and technology, defense and security, maritime affairs, climate change and sustainable development** among others.

Trade:

- India is Bangladesh's **second-largest trading partner**, with **Bangladesh being the fourth-largest export destination for India**.

- Bilateral trade has seen a consistent and rapid rise, growing **from USD 9.69 billion in FY 2020-21 to USD 16.15 billion in FY 2021-22,** despite the adverse effect on the economy caused by the COVID-19 pandemic.

- 2015, India and Bangladesh have partnered in numerous developmental projects.

  - o India, for example, is **financing several infrastructure and connectivity missions in Bangladesh through its Line of Credit**, totalling over eight billion dollars now, at a concessional rate

Connectivity projects:

- Connectivity projects such as a **multimodal road-rail link between Agartala in India's Tripura to Akhaura in Bangladesh** is a prime model.

- The reopening of an **old rail link between Chilahati and Haldibari**, apart from regular **train services between Kolkata and Dhaka, and bus connectivity from Dhaka to Shillong, Agartala and Kolkata** is increasing the physical connectivity between the two countries.

- India has also provided a **grant for the building of the Padma bridge** which will provide crucial **rail-road connectivity between India and the north and south regions of Bangladesh.**

- In **waterways connectivity,** several new routes have been activated including a **new bridge across the Feni river** to facilitate the movement of goods and passengers from Tripura to Bangladesh.

Energy security:

- India is also involved in the construction and installation works in **Bangladesh's nuclear power plant facilities such as at Rooppur** in the Pabna district.

- In the energy sector, **Bangladesh is importing nearly 2,000 megawatts of electricity from India** which is set to register an increase of at least 138 per cent in the coming year.

- The Framework of Understanding on **Cooperation in the Hydrocarbon Sector** and measures like the **India-Bangladesh Friendship Pipeline Project connecting Siliguri in West Bengal (India) to Parbatipur in Dinajpur district (Bangladesh)** is aimed at ensuring **energy security partnership between the two countries.**

Memorandum of understandings:

- During the previous visit of Prime Minister Sheikh Hasina's visit to India, the two countries further boosted their partnership by signing **seven Memorandums of Understanding (MoU) in the areas of water resources, capacity building, railway, science and technology.**

  o These agreements included the **withdrawal of river water from the common border river Kushiyara,**

  o **Capacity building programme f**or Bangladesh judicial officers in India,

  o **Training of railway personnel** in India,

  o **Scientific and technological cooperation** between Council for Scientific and Industrial Research (CSIR) institutes of both the countries, as well as cooperation in the areas of space technology.

  o An MoU on **cooperation in broadcasting** between India's Prasar Bharti and Bangladesh Television (BTV) was also finalized.

- Apart from these agreements on cooperation, several projects were also inaugurated including the **inauguration of the Rupsha rail bridge**, **connecting for the first time Mongla Port with Khulna by rail,** and thereafter **to Central and North Bangladesh** and **also to the India border at Petrapole and Gede in West Bengal.**

- A **Khulna-Darshana railway line link project** was also unveiled. Another project was announced on the supply of road construction equipment and machinery as well

Defense ties:

- Bangladesh is also showing keen interest in exporting military hardware from India.

- With the operationalisation of a **$500 million line of credit for defense purchases by India**.

    o Bangladesh aims to **buy military equipment such as specialist vehicles from Tata and Mahindra, Tejas light combat aircraft and Dhruv light helicopter.**

- Both countries are also exploring **India's assistance to Bangladesh in maintaining Russian-origin equipment** such as Mi-17-IV helicopter, Antonov An-32 transport aircraft and MiG-29 fighter jets.

- With Bangladesh already purchasing protective gear such as bulletproof jackets and helmets, both countries now aim to boost the defense trade for big-ticket items.

Regional cooperation mechanisms:

- Both countries are engaged in regional cooperation mechanisms through multilateral forums such as **SAARC (South Asian Association for Regional Cooperation), BIMSTEC (Bay of Bengal Multi-Sectoral Technical and Economic Cooperation) and IOR ARC (Indian Ocean Rim Association for Regional Cooperation),** amongst others.

- In these forums, both countries share a common outlook pertaining to issues like **regional security, connectivity and infrastructure development in the region.**

Challenges:

- **Teesta River Water Dispute:**

    o The Teesta River **flows from India to the Bay of Bengal** through Bangladesh.

    o Almost half a dozen districts in West Bengal are dependent on this river.

    o **Bangladesh complains that it does not get a fair share of the water.**

    o Since water is a state subject in India, the **bottleneck lies in the non-consensus between the state government of Bengal and the central government.**

    o Meanwhile, **no treaty has been signed yet to resolve the Teesta water-sharing** dispute between the two nations.

- **Illegal Migration:**

    o Illegal immigration from Bangladesh to India, which includes **both refugees and economic migrants**, continues unabated.

    o The large influx of such migrants across the boundary has posed serious **socio-economic-political problems for the people of Indian states bordering Bangladesh** with serious **implications for its resources and national security.**

- o The issue was further complicated when the **Rohingya refugees originally from Myanmar started infiltrating India through Bangladesh.**

- o Also, the **National Register of Citizens (NRC)**, which is expected to deter future migrants from Bangladesh from entering India illegally, has triggered a major concern in Bangladesh.

- **Drug Smuggling & Trafficking:**

  - o There have been **many incidences of cross-border drug smuggling & trafficking.**

  - o Humans (especially children & women) are trafficked & various animal & bird species are poached through these borders.

- **Terrorism:**

  - o The borders are susceptible to terrorist infiltration.

  - o Several outfits are trying to spread their tentacles across India, such as **Jamaat-ul-Mujahideen Bangladesh (JMB).**

  - o JMB is listed as a **terror group by Bangladesh, India, Malaysia and the United Kingdom.**

  - o Recently, The National Investigation Agency has filed a charge sheet against 6 members of the JMB in a special court in Bhopal.

- **Growing Chinese Influence in Bangladesh:**

  - o At present, **Bangladesh is an active partner in the Belt and Road Initiative (BRI)** (India is not a part of BRI).

  - o Also, Bangladesh imports Chinese military equipment, including submarines, in the defense sector which is a major concern for India's National Security.

Way forward:

- **Addressing Teesta River Water Dispute:** To **establish a consensus** towards demarcating the extent of Teesta River water sharing and reaching a mutual agreement, both the Bengal government and the central government should work together with mutual understanding and signal cooperative federalism.

- **Better Connectivity:** There is a need to **enhance connectivity in the region** through strengthening cooperation in coastal connectivity, road, rail and inland waterways.

- **Energy Security:** As the global energy crisis continues to rise, India and Bangladesh must **cooperate in making use of clean and green energy** to make South Asia Energy self-sufficient.

> **India-Bangladesh Friendship Pipeline:**
>
> - o This project is being undertaken on the ground and once completed will help in **the movement of high-speed diesel to Northern Bangladesh from India.**
>
> - o **Bangladesh has acknowledged Indian Oil Corporation Limited** as a registered government-to-government supply of refined petroleum products.
>
> - o With India leading the chair of G20 and serving as a voice for the global south particularly to South Asian countries, it's an **opportunity for India to highlight issues of common concern**, further leading to strong ties between the countries.

3. ECONOMY

3.1 Public Investments in India

Why in the news?

Recently the Chief Economic Advisor observed that countries' energy transition efforts face significant uncertainty due to the oligopolistic control over mining and processing of rare earth elements that were critical to scale up green technologies. He stressed that the **public investment must play a major role in green transitions.**

Key points:

- Chief Economic Advisor pointed out that major transformation efforts such as **post-World War II reconstruction, space exploration and the development of the Internet were driven by the public sector** for a reason.

- **Public investment in carbon sequestration, carbon sinks, battery storage technologies and green hydrogen** will **obviate problems with intellectual property rights** and **help assert the global public nature of solutions.**

What is public investment?

- Public investment is **investment by the state in particular assets,** whether through central or local governments or through publicly owned industries or corporations.

- Public investment has arisen historically from the **need to provide certain goods, infrastructure, or services that are deemed to be of vital national interest.**

Major source of public investment in India:

- **Budgets:**

  - **Union Budget:** The central government through the Union budget allocates funds for several public investment projects like infrastructure, education, healthcare etc.

  - **State Budget:** Similar to the union budget, the state governments also allocates funds for state level developmental projects like agriculture, transportation, irrigation etc.

- **Government revenues:**

  - **Tax and non-tax revenues** of the government such as **Income tax, Corporate tax, GST, dividends, interest on loans, fees and fines** are used to finance developmental programmes.

- **Public Sector Undertakings:**

  - PSUs/ PSEs are government owned companies that earn profits and revenue to the government.

- o They also act as a source of public investment through their capital expenditure and providing dividends to the government.

- **External Sources:**

  - o India receives financial assistance such as **loans and grants** from various **international financial institutions, foreign governments, bilateral and multilateral agencies.**

  - o The funds are mostly used for the creation of public goods.

- **Public- Private Participation (PPPs):**

  - o To leverage the financial ability of private sectors in long term infrastructure projects, the government encourages PPP mode of investment.

Merits of Public investment

- **Growth:** An important part of public investment outlays **support the broad functions of government (provision of social services, redistribution, maintenance of law and order, administration**), which only **indirectly feed into the factors influencing productivity growth.**

- **Promote private investment:** Public investment can boost growth and provide the right infrastructure to promote private investment.

- **Attract FDI:** Public investment focusing on infrastructure will further attract more Foreign Direct Investment into the nation.

- **Employment:** It plays an important role in creating new jobs and thereby **decreasing unemployment.**

  - o **One percent of global GDP** in public investment can create **more than seven million jobs worldwide.**

- **Multiplier effect:** Government spending intended to **stimulate the economy causes increases in private spending that additionally stimulates the economy.**

Issues in public investment:

- **Fiscal constraints: Reduced budgetary allocation** due to **decreased revenue, fiscal deficit, debt burdens** can hinder the level of public investment by the government.

- **Poor investment choices:** Poor investment choices wastes resources, **erodes public trust and limits growth opportunities.**

- **Red Tapism: Excessive regulations** that are redundant, **regulatory hurdles, inefficiencies** could lead to delay in the much needed public infrastructure.

- **Political hindrance:** Decisions in public investment that are politically motivated could lead to prioritizing projects that are purely for electoral considerations rather than public priorities.

- **Corruption and misappropriation:** Corruption and misappropriation of public funds can divert resources leading to incomplete or substandard projects.

Government measures to increase Public investment:

- **Make in India initiative:**
  - 'Make in India' is an initiative which was launched on 25th September 2014 **to facilitate investment, foster innovation, build best in class infrastructure and make India a hub for manufacturing, design and innovation.**
  - It promotes investment both from public and private participants.

- **Industrial Corridor Development Programme:**
  - In order to **accelerate growth in manufacturing**, the Government of India (GoI) has adopted the strategy of **developing Industrial Corridors in partnership with State Governments.**
  - The objective of this programme is to **develop Greenfield Industrial regions/areas/nodes with sustainable infrastructure & make available Plug and Play Infrastructure** at the plot level.
  - As part of the National Industrial Corridor Program, 11 Industrial Corridors are being developed in 4 phases.

- **Ease of Doing Business:**
  - The objective is to improve Ease of Doing Business and Ease of Living **by Simplifying, Rationalizing, Digitizing and Decriminalizing Government to Business and Citizen Interfaces across Ministries/States/UTs.**
  - The key focus areas of the initiative are
    - Simplification of procedures,
    - Rationalization of legal provisions,
    - Digitization of government processes, and
    - Decriminalization of minor, technical or procedural defaults.

- **National Single Window System:**
  - The setting up of National Single Window System (NSWS) was announced in the Budget 2020-21 with the objective to **provide "end to end" facilitation and support to investors**, including pre-investment advisory, provide information related to land banks and facilitate clearances at Centre and State level.
  - Envisioned as a **one-stop shop for investor related approvals and services** in the country, the National Single Window System (NSWS) was **soft-launched on 22nd September, 2021** by Hon'ble Commerce & Industry Minister.

- **PM Gati Shakti National Master Plan (NMP):**
  - PM Gati Shakti National Master Plan (NMP), a GIS based platform with portals of various Ministries/Departments of Government, was launched in October, 2021.

- It is a transformative approach t**o facilitate data-based decisions related to integrated planning of multimodal infrastructure**, thereby reducing logistics cost.

  - **The Empowered Group of Secretaries (EGoS) and Network Planning Group (NPG)** have been created as an institutional arrangement.

  - About 2000 data layers of various Central Ministries/Departments/State Governments have so far been uploaded on the NMP.

  - For enhanced capital expenditure by states for infrastructure development, the Ministry of Finance, Department of Expenditure through the **"Scheme for Special Assistance to States for Capital Investment for 2022-23"** in April 2022 has made a additional provision of Rs. 1,00,000 crore for disbursement among the states as long term loans at a zero interest rate.

    - Out of this, under Part II of the scheme Rs 5,000 crore are specifically provided for PM GatiShakti related expenditure.

- **National Logistics Policy:**

  - National Logistics Policy (NLP) was launched in September 2022, that aims to **lower the cost of logistics and lead it to par with other developed countries.**

  - It is a comprehensive effort to address cost inefficiency by **laying down an overarching interdisciplinary, cross-sectoral, and multi-jurisdictional framework** for developing the entire logistics ecosystem.

  - This would **boost economic growth, provide employment opportunities, and make Indian products more competitive** in the global market.

- **Production Linked Incentive scheme:**

  - Keeping in view India's vision of **becoming 'Atmanirbhar',** Production Linked Incentive (PLI) Schemes **for 14 key sectors** have been announced with an outlay of Rs. 1.97 lakh crore to enhance India's Manufacturing capabilities and Exports.

  - These schemes have potential for **creation of high production, economic growth, exports and significant employment** over the next five years and more.

Way forward:

- **Quality assurance:** Stringent project management and quality control measures are to be focussed to ensure that the public investment leads to high quality infrastructure and lasts for long duration.

> **Statistics about India's Public investment:**
>
> - Public investment contributes around **2.2% to the GDP** of India which is **likely to increase up to 2.9% by 2023.**

- **Fiscal discipline:** Public investments are to be done without compromising on the macroeconomic stability of the nation.

  - Steps to be taken for reducing budgetary deficit and managing public debt effectively.

- **Financing: Innovative financing** methods are to be explored like green bonds, Infrastructure investment trusts (InvITs), municipal bonds.

  - **Asset monetization:** Leasing or selling public assets like railways, roads, and airports could raise funds for new infrastructure projects.

- **Environmental considerations: Sustainability and environmental considerations** are to be prioritized during project planning and execution.

  - Developmental projects should ensure that the projects **benefit the local communities.**

- **Governance:** Digitization and e-governance reduces red tapism, corruption and enhances transparency in the approval and execution of the investment leading to efficient infrastructure.

3.2 Disputes between the Centre and States regarding economic policies

Why in the news?

In recent years, the frequency and intensity of disputes between the Union government and the States have increased and assumed the character of 'persistent frictions' in the federal system with respect to economic policies.

Reasons for disputes between the Centre and States regarding economic policies:

- **Economic reforms since 1991:** Continuing economic reforms since 1991 has led to the relaxation of many controls on investments, giving some room to States, but the autonomy regarding public expenditure policies is not absolute as State governments depend on the Centre for their revenue receipts.

- **Homogenisation of social sector policies:** The central government is pushing towards uniform and centralized social sector policies while the states are demanding for independence.

- **Functioning of regulatory institutions:** Differences arise over the jurisdiction affecting the functioning of the regulatory institutions.

- **Powers of central agencies:** With the aim of bolstering their influence, central agencies often impose their preferences on individual States.

- **Goods and Services Tax reforms:** GST reforms in 2017 led to reduction of states' taxation power.

Consequences of the dispute:

- **Crowding out:** The spread of the Centre's span of activities leads to a situation where **the Centre starts crowding out the States in terms of investments.**

  - **Eg:** The Centre launched the **PM Gati Shakti**, a digital platform, to incorporate schemes of various Ministries and State governments to achieve **integrated planning and coordinated implementation of infrastructure connectivity projects.**

- All States and UTs had to prepare and operationalise a State master plan in line with the national master plan for seamless implementation.

- However, the **flexibility of States in formulating their master plan is curtailed by the centralisation of planning and implementation of the national master plan.**

- **Fiscal competition:** In a federal system, fiscal competition manifests between different regions/States.

  - However, in a scenario of friction with the Centre, **State governments will engage in competition with other States and with the Centre.**

  - **Welfare provisioning** is one such area.

  - The **Centre with enhanced fiscal space has more spending power**, while **States' revenues**, especially non-tax revenues, **remain flat** as possibilities of raising non-taxes are confined to a smaller sphere due to the direct provisioning of many utilities and services by the Centre.

- **Inefficiency:** The inefficiencies are associated with **'parallel policies'.**

  - Federal abrasions lead to either **the Centre or the States duplicating the other's policies.**

    - Eg: The case of **pension reforms.** The **National Pension System (NPS)** changed the architecture of the pension system in India from a defined benefit scheme to a defined contribution scheme.

    - The scheme, mandatory for all central government employees, enlarged its scope and coverage with most of the States joining at different points of time.

    - **Though States joined the NPS initially, some States have started to roll back to the old pension scheme** as the fiscal cost of reverting would be visible only after 2034 when most of the newly joined employees retire.

Inevitable interdependence:

- For securing the **implementation** of many of its laws and policies, the **Centre depends on the States, particularly in the concurrent spheres.**

- **Article 258A-** The States also entrust their executive functions, with the consent of the Centre, to the government or agencies of the Centre.

- Interdependence is inevitable, especially in a large, diverse, developing society and needs to be preserved.

Measures taken by government:

- **NITI Aayog:** This forum was started to promote more collaboration among states and center on enactment and execution of economic policies.

- **GST council**: It is a constitutional body, setup in 2017 with both states and center as its representatives. This council also promotes cooperation between center - states and Interstates in GST related reforms.

- **Centrally sponsored schemes:** In recent years, most of the schemes are centrally sponsored schemes; state governments have discretionary power to implement the schemes with the center's fiscal support.

Way forward:

- **Strengthening of GST council:** The GST council should be strengthened to provide more voices to the state governments in GST reforms.

- **Conversion of central sector schemes:** More central sector schemes should be converted into centrally sponsored schemes in order to provide more policy enactment and implementation powers to the state governments.

- **High revenue share from the Finance Commission:** The states share of tax devolution by the Finance Commission should be increased; this will provide more fiscal support to the states to effectively function as a part of the federal system.

- **GST compensation fund:** The central government should extend the GST compensation fund to the states without any delay.

3.3 Insolvency and Bankruptcy Code

Why in the news?

Recently, the CRISIL report said that the recovery under the 2016 bankruptcy law falls from 43% to 32% between Mar. 2019 and Sept. 2023.
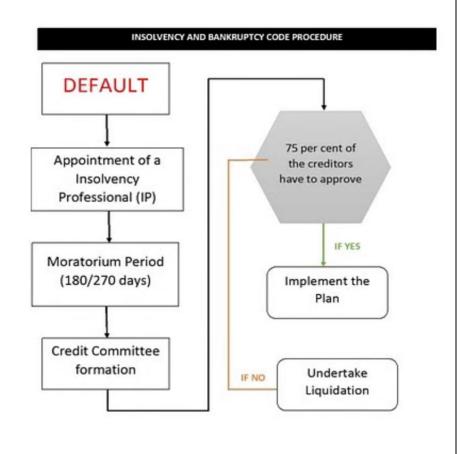
What is Insolvency and bankruptcy?

- **Insolvency**: Insolvency is the state of being unable to pay the debts, by a person or company (debtor), at maturity; those in a state of insolvency are said to be insolvent.

- **Bankruptcy**: Bankruptcy is a legal process through which people or other entities who cannot repay debts to creditors may seek relief from some or all of their debts. In most jurisdictions, bankruptcy is imposed by a court order, often initiated by the debtor.

Major provisions of Insolvency and bankruptcy code:

- **Insolvency professionals:** These people will oversee the dispute settlement process. They also manage the debtor's assets and give creditors information to aid in decision-making.

- **Professional Insolvency Agencies:** Insolvency practitioners will register with professional insolvency agencies. To certify insolvency professionals, exams would be given, and the agencies would enforce a code of behaviour for their work.

- **Information utilities:** They'll keep tabs on the obligations owing to creditors, as well as repayments and defaults on payments.

- **Adjudicating authorities:** They will provide the go-ahead for the resolution process to begin, select the insolvency professional, and approve the final verdict rendered in favor of the creditors.

- **Appeals Process to NCLT:** Corporations and limited liability companies appeal decisions to the National Company Law Tribunal (NCLT).

- **Debt Resolution for Individuals and Partnerships:** The Debt Recovery Tribunal (DRT) makes decisions about the debts of private individuals and partnership businesses.

INSOLVENCY AND BANKRUPTCY CODE PROCEDURE

- **Governance Structure for Professional Organizations and Experts:** The professional organizations, information utilities, and insolvency experts established under the Code shall be governed by the Insolvency and Bankruptcy Board.

- **Code's Focus on Timely Insolvency Resolution:** The code's aim is to deal with insolvencies quickly; the evaluation and viability determination must be completed in less than 180 days.

- **Moratorium Periods for Companies, Startups, and Small Firms:** A 180-day moratorium (which may be extended for an additional 270 days) is in place for the Company. Startups and small firms have a 90-day resolution window that can be extended by 45 days.

- **Tribunal Admissions Process and Resolution Timeline:** The Tribunal has 14 days to admit or reject the application or has to provide a reason if the admission is delayed. The CIRP or resolution process begins once an application is admitted by the AA. The amended mandatory deadline for the completion of the resolution process is 330 days.

2021 amendment:

- **Resolution of insolvency in a prepackaged form:** The modification allows for the use of pre-packaged insolvency resolution as an alternate resolution method for MSMEs. Between Rs. 10 lakh and Rs. 1 crore is needed to start a Pre-Packaged insolvency settlement.

- **Initiation of CIRP:** Before allowing a Corporate Insolvency Resolution Process (CIRP), the NCLTs must evaluate a pre-pack insolvency process.

- The Insolvency and Bankruptcy Code, 2016, defines CIRP as the process of resolving corporate insolvency in accordance with its provisions.

Opportunities:

- **Better alternative of existing mechanisms:** The IBC has improved credit culture in India by resolving a significant amount of stressed assets with better recovery rates compared with the previous mechanisms.

  - Other mechanisms had an average recovery rate between 5%-20%.

- **Behavioural change** on part of the debtors to ensure sound business decision-making and prevent business failures is encouraged.

- It envisages a process through which financially ailing corporate entities are put through a **rehabilitation process** and brought back up on their feet.

- The IBC's **time-bound and efficient framework** has instilled confidence among entrepreneurs, reducing the fear of failure and encouraging risk-taking.

Criticisms:

- **Limited judicial bench strength**: Low level of judicial bench strength decreases the efficiency of the resolution process.

- **Delay in pre-IBC admission stage:** Significant delay in the pre-IBC admission stage (650 days in fiscal 2022 increased from about 450 days in fiscal 2019) has suppressed recovery rates.

- **High pendency:** Around 71 per cent of the cases are pending for more than 330 days which is a marked deviation from the intent of swiftly resolving insolvency.

- **Low strength of skilled workers**: As far as staffing is concerned, in September 2023, the NCLTs were functioning without a President and were short of 34 members out of a total sanctioned strength of 62 members.

Way forward:

- **Digitization**: A Special Parliamentary Committee in its report opined that the NCLTs and the National Company Law Appellate Tribunal (NCLATs) should be digitized.

  - There should be provision for virtual hearings to deal with the pending cases swiftly.

- **Increase judicial benches:** More number of Adjudicating authorities should be appointed to fast track the pending cases.

- **Upskill**: Optimum budgetary allocations for upskilling insolvency professionals, improving tribunal infrastructure and for digitisation of the insolvency resolution process.

- **New yardstick to measure haircuts**: The IBBI suggested that haircuts not be looked at as the difference between the creditor's claims and the actual amount realized. But the difference between what the company offers while entering IBC and the value realized.

4. ENVIRONMENT

4.1 Delhi Pollution

Why in the news?

Recently, the combined effect of stubble burning in neighbouring States, local pollutants, and unfavourable meteorological conditions resulted in Delhi's air quality slipping into the worst — 'severe plus' — category for the first time this season.

Factors contributing to Delhi pollution:

- **Stubble burning:**
    - National capital **shares its border with the states of Haryana and Uttar Pradesh.**
    - One of the main reasons for increasing air pollution levels in Delhi is **crop burning by the farmers in these states.**
    - Farmers **burn rice stubbles in Punjab, Haryana and Uttar Pradesh.**
    - It is estimated that **approximately 35 million tonnes of crop are set afire** by these states.
    - The **wind carries all the pollutants and dust particles**, which have got locked in the air.

- **Vehicular emission:**
    - Vehicular emission is increasing the **hazardous effects of air pollution and smog.**
    - The **Central Pollution Control Board (CPCB) and the National Environmental Engineering Research Institute (NEERI)** have declared vehicular emission as a major contributor to Delhi's increasing air pollution.

- **Meteorological conditions:**
    - As the **winter** season sets in, **dust particles and pollutants in the air become unable to move.**
    - Due to **stagnant winds**, these **pollutants get locked in the air** and **affect weather conditions, resulting in smog.**

- **Overpopulation:**
    - Another reason of air-pollution is overpopulation in the capital.
    - Over-population only **adds up to the various types of pollution, whether it is air pollution or noise pollution.**

- **Less investment on Public Infrastructure:**
    - Investing less on public infrastructure is another reason for air pollution.

- In India, investment in public transport and infrastructure is low which **leads to congested roads, and hence air pollution.**

- **Large construction in Delhi-NCR:**

  - Large scale construction in Delhi-NCR is another reason that is **increasing dust and pollution in the air.**

  - Considering the dipping air quality, a number of construction sites have stalled work, as directed by the Delhi Government.

- **Garbage dumps:**

  - **Industrial pollution and garbage dumps** are also increasing air pollution and building-up smog in the air.

- **Firecrackers sale:**

  - Despite the ban on cracker sales, firecrackers were a common sight this Diwali.

  - It may not be the top reason for this smog, but it definitely contributed to its build up.

Measures taken by government:

- **Construction ban:** Measures enforced so far include a **ban on non-essential construction work** and **some categories of polluting vehicles**, which were put in place.

  - **Exemptions**, however, were made for the **projects for the railway services, metro services, airports, inter-state bus terminals, defense-related activities, healthcare-related activities.**

  - **Activities such as construction and demolition (C&D), stone crushing, and mining** have been **barred.**

  - The government had taken a decision **to stop construction work within a one-kilometer radius in hot spots where the AQI level continuously remains close to 400.**

- **Graded Response Action Plan (GRAP):** The **third stage of the GRAP** was introduced in the capital city.

- **Vehicle control: Vehicles with older emissions standards have been stopped** from running in some areas of NCR.

  - Besides, **the entry of diesel buses into the capital city was stopped.**

- **School closure:** The state government has announced the **closure of all primary schools for two days in order to keep children safe.**

- **Green war room:** The Delhi Environment Minister has formed a nine-member green war room **to monitor all the actions taken by as many as 20 government agencies in Delhi against pollution.**

  - The performance will be monitored on a **real-time and daily basis.**

- **Green Delhi App:** The state government is keeping a close tab on the Green Delhi app to address the complaints registered by the residents.

- **Bio- Decomposer:** The state government started spraying PUSA bio-decomposer, free of cost, in the farmlands of Delhi to combat pollution.

- **Water Sprinklers:**

  - Till now, 581 **water sprinklers**, 80 **mechanized road sweeping machines,** 233 **anti-smog guns at construction sites**, 150 **vehicles mounted anti-smog guns** as well as nine sprinkling facilities on high-rise buildings are operational in the national capital.

- **PUC Certificates:**

  - In 2022, the Delhi government made **Pollution Under Control Certificates (PUCC) mandatory at filling stations in Delhi.**

- **Air quality monitoring:** In January 2019, the government launched the **National Clean Air Program (NCAP)**, a five-year action plan to curb air pollution, build a pan-India air quality monitoring network, and improve citizen awareness.

    - The programme focuses on city-specific action plans that will be developed for **102 cities in India that exceed national air quality safeguards.**

    - It aims to **reduce PM2.5 levels by 20-30 percent by 2024 (compared to 2017 levels).**

Challenges in implementing government measures:

- **Common Air set from Punjab to Gangetic plain:**

  - Experts are of the view that winter pollution mainly depends on meteorological conditions.

  - These conditions start with the onset of winter in mid-October and continue till February.

  - Hence, the **region from Punjab to the Gangetic Plains of Uttar Pradesh and Bihar should be taken as an air set and agencies have to find a holistic solution** for the area.

  - **A piecemeal approach won't work much.**

- **Lack of implementation of Anti- pollution measures:**

  - There are many policies to control pollution in the capital. But **most of the policies are either poorly implemented or are not implemented at all.**

  - The **surveillance system is mostly non-existent.**

    - Hence, violations go unchecked.

  - Small offenses that largely contribute to spreading pollutants, like **garbage burning, leaf burning, dust control, etc, can be seen all across the capital and surrounding areas.**

- **Poor dust control and construction waste management:**

- o Although the government claims to be strict on dust-control measures, **small streets are still full of dust and mechanical sweeping is limited only to the main roads.**

- o Even sewage is openly left on the streets, which mixes with the loose dust and turns into sludge.

    - ▪ This **sludge is never removed from the neighborhood streets and narrow lanes.**

- o Similarly, the **construction waste and the dust** produced from it are major problems and the government must find a way to have control over such problems.

- **Industrial pollution:**

    - o The industries are spread in the municipal areas as well. **In the municipal areas, dirty fuel and coal are still used.**

- **No audit of waste segregation and solid waste management:**

    - o Waste segregation to **separate biodegradable and non-biodegradable wastes is still a non-starter in Delhi.**

    - o Composting biodegradable waste can be a viable alternative to burning it.

    - o Even dust pollution can be controlled by implementing composting.

    - o A regular audit of waste management is necessary, but this has not been done so far by any of the agencies.

- **Lack of systemic changes throughout the year:**

    - o The experts said that most of the steps are taken when the pollution months arrive.

    - o And even those measures are very few in comparison to the magnitude of the problem.

    - o Hence, systemic changes are required so that the anti-pollution mechanisms work throughout the year.

Way forward:

- **Addressing Industrial pollution:** A system should be put in place so that such fuels can't enter Delhi through the borders.

- **Biomass burning:** Experts suggest that **more focus should be on the rural areas** where biomass burning is a common exercise during the winter months.

- **Facilities and funding to be provided: Municipal bodies and sanitation workers** are provided facilities and funds to fight the battle against pollution better.

- **Developing Quick response system:** Delhi and its surrounding areas have several agencies working to control pollution.

    - o But the multiplicity of agencies and lack of coordination result in a delayed response.

    - o The response system to check pollution should be quick and urgent to improve the results.

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- **Need for scientific approach:** The use of the water sprinkling or anti-smog guns needs optimisation, ensuring that nozzle size and droplet adjustments align with the technological requirements.

- **Personal engagement:** While steps such as proper construction waste disposal, curtailing biomass burning, and using vehicles judiciously must be taken, **a culture of change should be nurtured.**

  - It's important to recall that the initial push against air pollution in Delhi stemmed from public outcry from images of soot-covered collars and coughing masses.

CAQM- Commission for Air Quality Management in NCR and Adjoining areas:

- The CAQM was established under the **Commission for Air Quality Management in NCR and Adjoining areas act, 2021.**

- **Mandate:**

  - The Commission **has been set up for Air Quality Management in National Capital Region and Adjoining Areas** for better coordination, research, identification and resolution of problems surrounding the air quality index and for matters connected therewith or incidental thereto.

  - Adjoining areas have been defined as areas in **Haryana, Punjab, Rajasthan, and Uttar Pradesh, adjoining the National Capital Territory of Delhi and NCR**, where any source of pollution may cause adverse impact on air quality in the NCR.

- The act **dissolved the Environment Pollution Prevention and Control Authority established in the NCR in 1998.**

- An Ordinance establishing a similar Commission was promulgated in October 2020. It lapsed in March 2021 and was repromulgated in April 2021.

- The **Bill repeals the 2021 Ordinance.**

Functions of the Commission:

(i) Coordinating actions by concerned state governments (Delhi, Haryana, Punjab, Rajasthan, and Uttar Pradesh),

(ii) Planning and executing plans to prevent and control air pollution in NCR,

(iii) Providing a framework for identifying air pollutants,

(iv) Conducting research and development through networking with technical institutions,

(v) Training and creating a special workforce to deal with issues related to air pollution, and

(vi) Preparing action plans such as increasing plantation and addressing stubble burning.

Powers of the Commission:

(i) Restricting activities influencing air quality,

(ii) Investigating and conducting research related to environmental pollution impacting air quality,

(iii) Preparing codes and guidelines to prevent and control air pollution, and

(iv) Issuing directions on matters including inspections, or regulation which will be binding on the concerned person or authority.

- The Commission will be the **sole authority with jurisdiction over matters defined in the act** (such as **air quality management**).

    o In case of conflicts, **directions of the Commission will prevail over the orders of the respective state governments, the Central Pollution Control Board (CPCB), state PCBs, and state-level statutory bodies.**

Penalties:

    o Contravention of provisions of the Bill, or orders and directions of the Commission will be **punishable with imprisonment of up to five years, or fine of up to one crore rupees, or both.**

    o The **Act excludes farmers** from the scope of these penalties.

    o However, the **Commission may collect environmental compensation from farmers causing pollution by stubble burning.**

    o This compensation will be prescribed by the central government.

    o **Appeals against the Commission's orders will lie with the National Green Tribunal.**

GRAP- Graded Response Action Plan:

- To deal with pollution, the centre's Graded Response Action Plan (GRAP) came into effect in Delhi in 2023.

- GRAP is a set of **anti-air pollution measures implemented in Delhi-NCR during the winter season.**

- The **Commission for Air Quality Management (CAQM)**, an autonomous body tasked with improving the air quality in Delhi and its adjoining areas, **made crucial changes to the Graded Response Action Plan (GRAP).**

GRAP for the NCR is implemented in **four different stages** based on the stages of adverse air quality in Delhi.

- **Stage 1- poor (AQI 201-300):** The revised action plan suggests **stricter implementation of the orders of the Supreme Court and the National Green Tribunal on overage diesel and patrol vehicles** under Stage 1.

- **Stage 2- Very poor (AQI 301- 400):** It also calls for a **complete ban on the use of coal and firewood in eateries, restaurants and hotels** as soon as the AQI crosses the 200 marks.
    - New steps suggested as part of the revised GRAP include **"strict action to curb air pollution at all identified hotspots** in the region under Stage 2".
- **Stage 3- Severe (AQI 401- 450):** Under Stage 3, states will have to impose **strict restrictions on the plying of BS-III petrol and BS-IV diesel four-wheelers in Delhi and Gurugram, Faridabad, Ghaziabad and Gautam Buddh Nagar.**
    - The authorities **may discontinue physical classes in schools for children up to Class 5** in such a scenario, the CAQM suggested.
- **Stage 4- Severe plus (AQI>450):** At AQI above 450, **four-wheelers registered outside Delhi, other than electric vehicles and those using CNG and BS-VI diesel, will not be permitted to enter Delhi.**
    - However, those carrying essential commodities or providing essential services are exempt.

About Air Quality Index (AQI):

- Air Quality Index (AQI) is a **tool for effective communication of air quality status to people in terms,** which are easy to understand.

- It transforms complex air quality data of various pollutants into a single number (index value), nomenclature and colour.

- There are **six AQI categories, namely Good, Satisfactory, moderately polluted, Poor, Very Poor, and Severe.**

- Each of these categories is **decided based on ambient concentration values of air pollutants and their likely health impacts** (known as health breakpoints).

- **AQ sub-index and health breakpoints** are evolved for **eight pollutants (PM10, PM2.5, NO2, SO2, CO, O3, NH3, and Pb)** for which **short-term (up to 24-hours) National Ambient Air Quality Standards are prescribed.**

- Based on the measured ambient concentrations of a pollutant, sub-index is calculated, which is a linear function of concentration (e.g. the sub-index for PM2.5 will be 51 at concentration 31 $\mu g/m3$, 100 at concentration 60 $\mu g/m3$, and 75 at concentration of 45 $\mu g/m3$). The worst sub-index determines the overall AQI.

4.2 Climate Smart Agriculture

Why in the news?

Recently, some agricultural scientists advocated for the adoption of climate smart agriculture.

What is Climate Smart Agriculture?

- Climate-smart agriculture is an approach for transforming food and agriculture systems to support sustainable development and safeguard food security under climate change.

- **CSA comprises three pillars or objectives:**
    - Sustainably increase agricultural productivity and incomes;
    - Adapt and build resilience to climate change;

- Reduce/remove GHG (greenhouse gasses) emissions, where possible.

Benefits:

- **Food security:** Climate smart agriculture is adapted based on the changing climate scenarios. This practice will fulfil the demand of food security for the growing population.

- **Sustainable development**: CSA will promote sustainable agriculture practices that are vital for balanced development.

- **Erratic climate resistance**: CSA increases resilience in the face of longer-term stressors like shorter seasons and erratic weather patterns.

- **Proliferation of information**: CSA causes a dramatic change in farming communities' economic and social structure by distributing information about and providing access to climate-resilient methods.

- **Ecological balance:** CSA's ecosystem-based approach and different crop varieties help cropland and wild regions coexist together.

  - This collaborative effort helps to safeguard native plant species, keep pollinator populations stable, and mitigate the effects of habitat degradation.

- **Low GHG emissions:** The agricultural sector also produces a large amount of GHGs. The sector's share in GHG's emissions in 2018 was 17%.

  - Therefore, CSA implementation is crucial for lowering GHG emissions and protecting biodiversity.

- **Agroforestry and carbon sequestration** are two examples of CSA measures that could help India meet its international obligations and contribute to the global fight against climate change.

Challenges:

- **Fragmentation of land:** 80% of India's farmers are small and marginal. Fragmentation of land in India is a concern to adopt climate smart agriculture practices.

- **Knowledge gap**: Most of the farmers in India are illiterates. The adoption and extension of new climate smart technologies among the farmers are challenging tasks for the government.

- **Unique regional approach:** Each region has unique climatic and agricultural conditions that require tailored approaches.

- **High upfront costs:** Some climate-smart agriculture practices can require significant investments in new technology or infrastructure, which can be cost-prohibitive for many farmers.

  - Eg: Precision farming technologies.

Government initiatives:

- **National Action Plan on Climate Change:** The National Action Plan on Climate Change emphasizes the role of climate-resilient agriculture in India's adaptation measures.

- **Soil management:** Programs such as the Soil Health Card Scheme use precision nutrient management to optimize agricultural methods.

- **Precision farming:** Precision farming is a new system, in which agriculture inputs are applied judiciously.

  - Government implements Pradhan Mantri Krishi Sinchayee Yojana to promote drip and sprinkler irrigation systems among farmers.

- **New irrigation methods:** New water efficient irrigation methods like drip irrigation and sprinkler irrigation are used to decrease the overall water depletion.

  - In India, 85% of the groundwater extracted are used in irrigation.

- **Organic farming:** Organic farming system is promoted by the government through various schemes like National Mission on Organic Farming, Paramparaghat Krishi Vikas Yojana etc.

- **Natural farming:** Natural farming is also promoted to cut down external inputs and use the available natural biomassess as inputs. The National Mission on Natural farming scheme was started to promote this new system among farmers.

- **Crop diversification**: Government also supports farmers through incentives to diversify their cropping pattern from water depleting rice, sugarcane to drought tolerant millets, oil seeds and pulses.

- **National Innovation on Climate Resilient Agriculture (NICRA), 2011:** The mega project has three major objectives- strategic research, technology demonstrations and capacity building.

Way forward:

- **Bridging knowledge gap:** Investing in capacity-building programmes and providing practical CSA tools and knowledge is essential.

- **Tailored adaptation:** Tailored approach for the adoption of climate smart agriculture is necessary to meet the localized needs.

- **Awareness promotion:** Awareness about the benefits of climate smart farming practices should be proliferated among the farmers.

- **Effective policies and regulations:** Government should enact and implement policies and programmes that are climate friendly farming.

4.3 Loss and Damage Fund

Why in the news?

Recently, as the climate crisis intensifies, a term is getting sharp focus — 'Loss and Damage' (L&D).

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What is Loss and Damage?

- Loss and Damage represents the **irreversible consequences of climate change:** impacts that **can't be avoided or mitigated through adaptation efforts.**

- They encompass the **real losses that extend beyond monetary value** and cut to the core of human rights and well-being.

- L&D **includes economic losses, human casualties, and the degradation of ecosystems and cultural heritage.**

Loss and Damage Fund:

- At the 19th Conference of the Parties (COP 19) to the **United Nations Framework Convention on Climate Change (UNFCCC) in Warsaw, Poland, in 2013**, representatives of member countries formally agreed to establish the L&D fund.

   o It was being created to **provide financial and technical assistance to economically developing nations** that were incurring L&D due to climate change.

- At **COP 25, the Santiago Network for L&D was set up**, but countries **didn't commit any funds.**

- Subsequently, at **COP 26, the Glasgow Dialogue on finance for L&D** was established to continue discussions over the next three years on the fund.

- Finally, at **COP 27 in November 2022**, after intense negotiations, **representatives of the UNFCCC's member states agreed to set up the L&D fund and a Transitional Committee (TC)** to figure out how the new funding mechanisms under the fund would operate.

- The **TC was also to prepare recommendations** that countries would consider, deliberate on, and potentially adopt by COP 28.

- But so far, four meetings of the TC have concluded with no clear recommendations.

How does L&D fund ensure climate justice:

- As we strive to mitigate the worst impacts of climate change, we must remember that **adaptation and L&D are not mutually exclusive concepts.**

   o They exist on a **continuum of climate resilience**, and both have a place in the collective efforts to combat climate change.

- A successful response to climate change requires us to **balance the proactive measures of adaptation with the moral and financial responsibility of addressing the losses and damages**.

- The L&D fund was conceived as a **critical component of global climate action,** recognising that **some of the consequences of climate change are irreversible and beyond the capacity of vulnerable nations to handle.**

- To achieve climate justice, rich countries must meet their obligations to reduce emissions and deliver finance in line with what is fair, and thus uphold the principles of equity, justice, and solidarity in the face of a changing climate.

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What is Transitional Committee (TC) and its outcomes?

- **COP 27 and CMA 4** established new funding arrangements and a fund for assisting developing countries that are particularly vulnerable to the adverse effects of climate change, in responding to loss and damage.

- The fund includes a **focus on addressing loss and damage.**

- A transitional committee on the operationalization of the new funding arrangements and fund was established, **to make recommendations for consideration and adoption by COP 28 and CMA 5.**

- The work of the Transitional Committee and its recommendations will take into account the landscape of institutions and solutions relevant to responding to loss and damage associated with climate change impacts, in line with the vision that the new funding arrangements should complement and include sources, funds, processes and initiatives under and outside the Convention and the Paris Agreement.

Challenges in Loss and Damage fund:

There are several challenges that complicate the operationalisation of the fund:

- **Reluctance of developed nations to accommodate a new fund**, and political unwillingness to commit to higher, additional non-debt finance to official development assistance (ODA) as well as to deliver on previous commitments.

- **Absence of a mutually agreed upon definition** to categorize L&D activities that overlap with humanitarian support.

- **Low technical capacity** – especially in developing countries – to scientifically model L&D makes it difficult to make robust estimates.

- **Immediate accessibility** to funds has remained elusive in the domain of climate finance.

- **Poor financial mobilization at the local level**, where allocation does not favor the most vulnerable people within a country, communities, and households.

- **Poor data availability** and processes for systematically collecting, recording, and reporting information on L&D.

How to address the issues in L&D fund related challenges:

- **Solutions:** Deliver solutions ensuring finance is **new, additional, predictable, adequate, fair, and debt-free.**

- **Scope:** on the scope of the fund, which **comprises immediate disaster response, post-disaster resilience-building efforts, and comprehensive coverage** to include slow-onset events and non-economic losses.

- **Institutional arrangements:** Agree on the institutional arrangements where the fund is positioned as the **third operating mechanism – along with the Green Climate Fund (GCF) and Global**

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Environment Facility (GEF) – and is responsible only for L&D finance within the United Nations Framework Convention on Climate Change (UNFCCC) ambit.

- **Governance:** In terms of governance, the **fund can have a Governing Council (GC)** that functions as an **oversight, decision-making body, and a secretariat to deal with day-to-day issues.**

- **Responsibility:** Build consensus on who pays, acknowledging that **developed nations should be the primary contributors on account of their historical responsibility**, unfulfilled pledges, and capacity to pay.

- **Target to be revised:** Set targets to mobilize finances based on needs, with flexibility for the quantum to be revised over time. Based on the available research, **the target can be set at approximately USD 200 billion by 2025, USD 430 billion by 2040, and USD 1.5 trillion by 2050.**

  o These figures can be revised based on needs in the future.

- **Access to the fund:** Provide all developing nations the access to the fund. The money can be disbursed in three phases.

  o First, **immediate recovery**, based on a trigger (for example, when a nation declares that it has been impacted by a loss and damage event) in the form of unconditional grants or direct cash transfers.

  o Second, **recovery fund**, where the total remaining amount is released after an assessment of the costs of the post-disaster recovery.

  o And, third, **a slow-onset window** that allows for accessing the fund based on a defined plan of action to address and minimize the climate impacts.

- **Financing instruments: Establish grants and unconditional cash transfers** as the most suitable financing instruments.

  o To fill the fund, apart from developed nations contributing, **money can be mobilized through taxes (climate damage, windfall, and aviation), multilateral development banks (MDBs), multilateral climate funds, philanthropies, and domestic carbon markets to foster finance.**

Way forward:

- **Establishing a Global South–Led Consortium:** Develop a **Global South–led consortium to enhance technical capacity** and encourage attribution science to assess the extent of the role of climate change in disasters.

- **Collaborative Framework:** Explore a collaboration between the World Meteorological Organisation (WMO) as the technical body, Santiago Network as the support arm, and the LDF Secretariat as the coordinating body.

- **Dedicated WMO Department:** The aim would be to institute a dedicated department under the WMO to leverage the organization's expertise in scientific disaster attribution.

- **Enhancing Data Collection:** Emphasizing the need to improve data collection on Loss and Damage impacts and financing requirements for evidence-based decision-making.

- **Establishment of National Climate Disaster Database:** Proposing the creation of a national database to systematically record and track climate-related disasters, promoting uniformity and accessibility.

- **Encouraging Standardized Reporting for L&D Financing:** Advocating for the adoption of common tabular formats to facilitate reporting and tracking of Loss and Damage financing, promoting transparency and comparability.

4.4 OECD Report on Climate Finance

Why in the news?

Recently, the Organization of Economic Cooperation and Development released a report on climate finance.

Key details from the report:

- The report said that developed countries mobilized $89.6 billion in 2021 and that finances for adaptation fell by 14% in 2021 compared to 2020.

- The OECD report showed that of the $73.1 billion mobilized in 2021 by the public sector via bilateral and multilateral channels, $49.6 billion was provided as loans.

- Climate finance flows between 2011 and 2020 found that 61% of climate finance was provided as loans, of which only 12% was at concessional interest rates.

- The OECD report added that by 2025, developing countries are estimated to require around $1 trillion a year in climate investments, rising to roughly $2.4 trillion each year between 2026 and 2030.

- The $100 billion goal pales in comparison, dwarfed further by the fact that it remains unmet.

- As a course correction measure, the OECD report suggested derisking government intervention and called on MDBs to integrate private finance mobilization strategies as part of their core objective.

What is Climate Finance?

- At present, there is no commonly agreed definition of 'climate finance' because developed countries have endeavoured to keep it vague.

- In general, money that is provided to improve the environmental situation or reduce the greenhouse gasses or climate change mitigation strategies are called climate finance.

Issues in the Climate finance:

- **Shortage of funding assistance:** Developed countries did not provide committed financial assistance of $100 bn per year to developing countries.

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- o This reduces the ability of developing countries in developing climate change mitigation and adaptation infrastructure.
- **High interest loans:** 69% of the total climate financial assistance was given by the developed countries as loans with high interest rates.
- **Double counting:** Developed countries reduce their overall development assistance in sectors like healthcare, education and use that money for climate finance to developing countries.
- **Poor return on investment:** Investment in this sector can't generate the sort of high returns that private investors seek and which the mitigation sector like a solar or wind farm could generate.
- **Funding on mitigation over adaptation:** Over 60% of the total fund has been allocated to the mitigation strategies rather only 27% allocated to the adaptation strategies.

Other Climate Finance mechanisms:

- **Global Environment Fund** was created to implement the following climate funding mechanisms such as,

  - o Green climate fund

  - o Adaptation fund

  - o Special climate change fund

  - o Least developed countries fund

- **Climate finance mechanisms in India:**

  - o **National clean energy fund:** It was created to fund research and development in innovation in clean energy.

  - o **National Adaptation fund:** It was created to provide funding support to states and centers to acquire climate mitigation and adaptation facilities.

  - o **Compensatory Afforestation Fund Management Authority:** It was set up in 2016 to promote afforestation activities in India.

5. SCIENCE AND TECHNOLOGY

5.1 Private players in space sector

Why in the news?

Recently, space startups said that funding shortages are the most serious issue in the Indian space industry.

Significance of private players in space sectors:

- **Investment**: Large scale investment can be infused by the private players.

- o **Eg. Elon Musk's SpaceX's reusable Falcon 9 rockets have become a popular choice for space missions around the world.**
- **Small space activities:** Private players can be used to provide small scale space activities, while the government can focus on other large-scale projects like moon, mars etc.
- **Employment creation:** Employment activities will be generated on a large scale.
  - o Eg. The **Confederation of Indian Industry** said that private players can generate **1 lakh jobs.**
- **Innovation**: Large scale innovation in the space sector will be started; Private investment in space research is a major advantage.
  - o **Eg. Agnikula cosmos develops small satellite launch vehicles.**
- **Economic growth:** Participation of private players will increase the GDP contribution of the space sector.
  - o Current contribution of the space sector to the GDP is $8 bn and it will be $44 bn in the next 10 years.
- **Proliferation of technologies:** Private sector participation will increase the proliferation of benefits of space technologies to large scale populations.
  - o **Eg. Oneweb and Airtel collaboration to provide high speed internet.**
- **Competitiveness**: Competition among the private players can increase the growth of the space sector.

Issues in achieving growth of Private sector in Space:

- **Funding shortage**: Negligible government support and high incubation period also a major concern for private players.
  - o **Only $67 million was invested into this sector.**
- **Import dependency:** Around 95% of the space components and equipment are imported.
- **High gestation period:** Due to the high gestation period, private players are hesitant to participate in the space sector.
- **Procedural delays:** Bureaucratic delays in opening new startups is a major hurdle for private players.
- **Anti national activities**: Private sector can be used for anti-national activities.

Government measures:

- **Indian Space Association:** It was launched in 2021 to undertake Policy Advocacy and engage with all stakeholders in the Indian Space domain, including the Government and its Agencies, to make India self-reliant, technologically advanced and a leading player in the space arena.
- **Indian National Space Promotion and Authorisation Centre (IN-SPACe)**: This center will act as a bridge between ISRO and private players to increase the coordination in the space sector.
- **Policy reform:** A major policy reform has been based on the initial validity of the industrial license granted under the industries (Development & Regulation) Act. One highlight of this reform is the **extension of the licensing term from three years to 15 years.**
- **India space policy 2023:** The Non-Government Entities (NGEs) (this includes the private sector) are allowed to undertake end-to-end activities in the space sector through establishment and operation

of space objects, ground-based assets and related services, such as communication, remote sensing, navigation, etc.

- **New space India limited:** It was launched to commercialize the space assets to the private players.
  - o **Eg. Manufacture, lease components, platforms to the private players.**

Way forward:

- **Funding support**: Incentives can be given to new startups like PLI scheme to encourage their participation.
- **Procedural reforms:** Industry friendly regulatory systems should be brought by the government .
  - o **Eg. Red tapism and bureaucratic delays can be avoided.**
- **New markets**: Government should play a major role in finding new market avenues for the private sectors.
  - o Tata Advanced System Limited announced plans to make local sub-meter resolution earth observation satellites in India.
  - o This satellite system will be used in national defense projects.
  - o Local MSME units will be integrated to produce components.

5.2 Space telescope

Why in the news?

Recently, European astronomers have released the first images from the newly launched Euclid space telescope, designed to unlock the secrets of dark matter and dark energy, hidden forces thought to make up 95% of the universe.
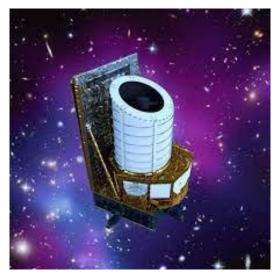
Key points from the news:

- The **European Space Agency (ESA)**, which **leads the six-year mission with NASA as a partner**, said the images were the sharpest of their kind, showcasing the telescope's ability to monitor billions of galaxies up to 10 billion light years away.

- The images **spanned four areas of the relatively nearby universe**, including **1,000 galaxies belonging to the massive Perseus cluster** just 240 million light-years away, and more than 100,000 galaxies spread out in the background.

  - o Scientists believe vast, seemingly organized structures such as Perseus could **only have formed if dark matter exists.**

- **Dark energy's hypothetical existence** was **established only in the 1990s** by studying **exploding stars called supernovas**, resulting in a **2011 Nobel Prize shared between three U.S.-born scientists.**

- The earlier **Hubble Space Telescope** concluded that the **universe was not only expanding but that the pace of expansion was accelerating** - a stunning discovery attributed to the **new concept of dark energy.**

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- Although the mission is designed to last six years, ESA hopes Euclid has another six months of propellant to keep it in **solar orbit some 1.5 million km away from the earth at Lagrange point 2**, or L2 - a position of gravitational stability that is **also home to NASA's James Webb Space Telescope.**

- Other images released by ESA included an irregular galaxy thought to resemble building blocks of the universe and a spiral formation known as the **"Hidden Galaxy"**: a lookalike of our home galaxy usually obscured by light and dust within the Milky Way.

About Euclid space telescope:

- Euclid is designed to **explore the evolution of the dark Universe.**

- In **October 2011** Euclid was selected by ESA's Science Programme Committee for implementation, and **it was formally adopted in June 2012.**

- Euclid is a **fully European mission, built and operated by ESA, with contributions from NASA.**

  - The **Euclid Consortium** – consisting of more than 2000 scientists from 300 institutes in **13 European countries, the US, Canada and Japan** – provided the scientific instruments and scientific data analysis.
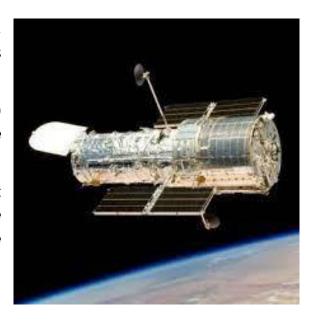
- It will **make a 3D-map of the Universe** (with time as the third dimension) by observing billions of galaxies out to 10 billion light-years, across more than a third of the sky.

- While **dark energy accelerates the expansion of the Universe and dark matter governs the growth of cosmic structures**, scientists remain unsure about what dark energy and dark matter actually are.

- By observing the Universe evolving over the past 10 billion years, Euclid will reveal how it has expanded and how structure has formed over cosmic history – and from this, astronomers can infer the properties of dark energy, dark matter and gravity, to reveal more about their precise nature.

  - This **addresses two core themes of ESA's Cosmic Vision programme:**

    - What are the fundamental physical laws of the Universe? and

    - How did the Universe originate and what is it made of?

- **Nominal mission lifetime is six years**, with the possibility of extension (limited by the amount of cold gas used for propulsion).

- Euclid will launch on a S**paceX Falcon 9 launch vehicle** from Cape Canaveral, Florida, USA.

- Its operational orbit will be **halo around a point known as the Sun-Earth Lagrange point 2 (L2), at an average distance of 1.5 million km beyond Earth's orbit.**

o   This special location **keeps pace with Earth as we orbit the Sun** (and also **hosts ESA's Gaia and Webb space telescopes**).

Hubble Space Telescope:

- The **solar-powered telescope** launched on **April 24, 1990** on board the space shuttle Discovery and was deployed one day later.

- Hubble **orbits about 340 miles (547 kilometers) above Earth**, on a **path inclined 28.5 degrees to the equator**.

- Its average speed is 17,000 mph (27,000 kph), and it **Named after the astronomer Edwin Hubble, the telescope is a joint project between NASA and the European Space Agency (ESA).**
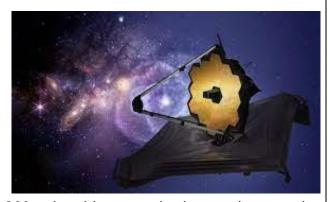
- **Hubble's observations:**

    o   Astronomers have **traced the evolution and formation of galaxies**,

    o   Discovered that **most galaxies contain supermassive black holes**.

    o   Mapped the **presence of the mysterious dark matter** that makes up most of the universe's mass and structure.

    o   Hubble has **viewed galaxies that spin backwards, unusually close galaxies dancing together before colliding to form a giant elliptical, and ring-shaped galaxy** that may have formed through gravitational interactions with nearby or passing galaxies.

James webb space telescope:

- The James Webb Space Telescope (JWST) is the **largest and most powerful space telescope to date.**

- The James Webb Telescope is the product of an impressive international collaboration between **NASA, the European Space Agency (ESA), and the Canadian Space Agency.**

    o   According to NASA, the JWST involved over 300 universities, organizations and companies across 29 U.S. states and 14 countries.

- NASA's **infrared space observatory, launched on Dec 25, 2021**, from ESA's launch site at Kourou in French Guiana, aboard an Arianespace Ariane 5 rocket.

- The $10 billion James Webb Telescope is **probing the cosmos to uncover the history of the universe from the Big Bang to exoplanet formation and beyond**.

- It is one of NASA's Great Observatories, huge space instruments that include the likes of the Hubble Space Telescope that peer deep into the universe.

- It is placed in **L2 point-** a spot in space near Earth at 1.5 million kilometers, that lies opposite the sun;

  o This orbit **allows the telescope to stay in line with Earth as it orbits the sun.**

  o It has been a popular spot for several other space telescopes, including the **Herschel Space Telescope and the Planck Space Observatory.**

- According to NASA the James Webb Space Telescope will focus on four main areas:

  o The first light in the universe,

  o The assembly of galaxies in the early universe,

  o The birth of stars and protoplanetary systems, and planets (including the origins of life.)

5.3 Genetically Engineered Insects

Why in the news?

Recently, the research related to the Genetically engineered insects have come into the lime light as the inadequate investment in the field.

- India's bioeconomy contributes 2.6% to the GDP. In April 2023, the Department of Biotechnology (DBT) released its **'Bioeconomy Report 2022' report**, envisioning this contribution to be closer to 5% by 2030. This ambitious leap – of $220 billion in eight years – will require aggressive investment and policy support.

- In April 2023, the Department of Biotechnology (DBT) issued the **'Guidelines for Genetically Engineered (GE) Insects'.** They provide procedural roadmaps for those interested in creating GE insects.

What is Genetically Engineered Insect?

- A genetically engineered insect is an insect that has been **genetically modified** through genetic engineering techniques.

- Such techniques help to achieve desired physiological traits or characteristics or desired products.

- **Derived Products of GE Insects:** Includes **silk, honey, or any other product used for pharmaceuticals, human and livestock health and nutrition.**

- **Guidelines for Research on GE Insects, 2023:**

  o **Nodal Agency:** The Department of Biotechnology (DBT) under the Ministry of Science and Technology (MoST) is the nodal agency and promoter of biotechnology in India.

  o **Objective:** They provide procedural roadmaps for those interested in creating GE insects.

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- o The guidelines have been **harmonized to guidance from the World Health Organisation on GE mosquitoes**

Advantages:

- **Versatility of Genetically Modified Insects:** Genetically modified insects can be **used in pest control, disease control, ecological impact, and even human impact.**

- **Elevating Quality of Life through GE Insects:** The emphasis of using GE insects appears to be on **uplifting the standard of living** by **reducing disease burden, enabling food security and conserving the environment.**

- **Controlling insect production:** Since insects have high reproduction rates, genetic engineering can **help control an otherwise uncontrolled rate of reproduction.**

- **Reducing Reliance on Harmful Insecticides:** Genetically engineered insects **reduce dependence on insecticides** that may be toxic to water supplies, plants, and other valuable insects and animals.

- **Breakthrough in Medicine:** Exploring how using genetically engineered insects for disease control eliminates socio-economic barriers associated with traditional medicine.

Criticisms on the guidelines of Genetically engineered insects.

- **Lack of Clarity on Approved Purposes:** The guidelines fail to specify the purposes for which Genetically Engineered (GE) insects may be approved in India. This lack of clarity raises concerns about the intended applications and potential consequences of releasing such insects.

- **Neglect of Economic Opportunities:** The guidelines seem to downplay the economic opportunities associated with GE insects. This oversight is notable, given the potential economic benefits that could arise from the use of these insects in various fields, such as agriculture and public health.

- **Misalignment with Bioeconomy Commitments:** Current biotechnology-based policies are not in sync with the broader commitment to contributing to the bioeconomy. This misalignment suggests a gap in the regulatory framework, hindering the effective integration of GE insects into broader economic and environmental goals.

- **Inadequate Consideration of Bioethical Concerns:** The guidelines primarily focus on regulatory procedures for research and development (R&D) on insects with beneficial applications. However, there is a lack of explicit consideration of bioethical concerns related to the creation, release, and potential consequences of GE insects.

- **Uncertain Approval Criteria for Deployment:** There is a notable absence of clarity regarding the criteria the Environment Ministry might use to approve the deployment of GE insects. The uncertainty raises questions about the decision-making process and the potential risks associated with releasing genetically engineered organisms into the environment.

- **Limited Accountability and Consumer Choice:** Once deployed, GE insects cannot be recalled, and unlike genetically modified foods, individuals have no choice regarding their exposure. This lack of accountability and absence of consumer choice raise ethical concerns about the potential unintended consequences and environmental impact of GE insect releases.

Way forward:

- **Community participation:** Wider community engagement and monitoring of the impact of GE will be required.

- **Changes in guidelines:** The guidelines define GE insects by their risk group and not by the end product.

  - The guidelines can sidestep this by adapting its rules for genetically modified crops for non-consumption purposes.

- **Increase funding:** To achieve the target set out in Bioeconomy report 2022, increased funding and private participation is to be focussed.

- **Clear policy guidelines:** Clear and supportive policies aligning with the development of the bioeconomy is to be ensured.

Applications:

The development and release of GE insects offers applications in various fields such as

- **Vector management** in human and livestock health;

- **Management of major crop insect pests**;

- **Maintenance and improvement of human health and the environment** through a reduction in the use of chemicals;

- **Production of proteins** for healthcare purposes;

- **Genetic improvement of beneficial insects** like predators, parasitoids, pollinators (e.g. honey bee) or productive insects (e.g. silkworm, lac insect).

- **Engineering honey bees** to make **better-quality and/or quantities of honey** will help **reduce imports and also maybe facilitate exports.**

- **GE silkworms** may be used to produce **finer and/or cheaper silk, affecting prices and boosting sales.**

5.4 Deepfake

Why in the news?

Recently, Electronics and Information Technology Ministry sent notices to "all social media intermediaries", reminding them that online impersonation is illegal under Section 66D of the Information Technology Act, 2000 with respect to the raising concerns of Deepfake technology.

What is Deep fake technology?

- Deep fake constitutes fake content, often in the form of videos but also other media formats such as pictures or audio, created using powerful artificial intelligence tools.

- Simply, it is an amalgamation of the words "deep learning" and "fake" and it means fabricated videos generated from existing face-swapping techniques and technology.

- They are called deep fakes because they use deep learning technology, a branch of machine learning that applies neural net simulation to massive data sets, to create fake content.

How does it work?

- The technology involves modifying or creating images and videos using a machine learning technique called generative adversarial network (GAN).

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- The AI-driven software detects and learns the subjects' movements and facial expressions from the source material and then duplicates these in another video or image.

- To ensure that the deepfake created is as close to real as possible, creators use a large database of source images.

  - This is why more deepfake videos are created of public figures, celebrities and politicians.

- The dataset is then used by one software to create a fake video, while a second software is used to detect signs of forgery in it.

- Through the collaborative work of the two software, the fake video is rendered until the second software package can no longer detect the forgery.

  - This is known as "unsupervised learning", when machine-language models teach themselves.

  - The method makes it difficult for other software to identify deepfakes.

Issues in the deep fake technology:

- **Pornography**: It can be used to create porn images by morphing faces. Around 96% of the deep fakes are happening in the pornography related domain.

- **Election manipulation:** It can also be used for election manipulation. For example, there were widespread concerns that deep fake videos would affect the 2020 U.S. election campaign.

- **Social engineering:** Deep fake technology has been used within social engineering scams, with audio deep fakes fooling people into believing trusted individuals have said something they did not.

- **Disinformation attacks:** Deep fake can also be used to spread automated disinformation attacks, such as conspiracy theories and incorrect theories about political and social issues.

- **Identity theft:** Deep fake technology can be used to create new identities and steal the identities of real people.

  - Attackers use the technology to create false documents or fake their victim's voice, which enables them to create accounts or purchase products by pretending to be that person.

Regulations on Deep fake technology:

- India does not have any regulations or laws to regulate deep fake technology.

- Section 66 and 67 of the Information Technology Act 2000, Copyright act and some provisions in the Indian Penal Code will help to get legal remedies.

- The Information Technology Rules, 2021, mandate the removal of content impersonating others and artificially morphed images within 24 hours.

- The Ministry of Electronics and IT (MeitY) has sent advisories to social media platforms, including Facebook, Instagram and YouTube, to take down misleading content generated through artificial intelligence deep fakes within 24 hours.

- Comprehensive plan to counter deep fake technology: Four pillars of the comprehensive action plan:
    - Detection of deep fakes and misinformation,
    - Prevention of the spread of identified deep fakes and misinformation,
    - Fortifying the grievance and reporting mechanism,
    - Raising awareness.

International measures:

- The EU has issued guidelines for the creation of an independent network of fact-checkers to help analyze the sources and processes of content creation.

- The U.S. has also introduced the bipartisan Deepfake Task Force Act to counter deep fake technology.

Way forward:

- **Special act:** India can enact a separate law like US's deep fake task force act, to counter deep fake technology and its misuse.

- **Awareness promotion**: Government should create awareness among the people about the misuse of deep fake technology.

- **Grievance redressal committee**: District level committee can be established with representatives from government and technical industries to hear grievances.

- **Code of Conduct:** A separate code of conduct can be created and promoted among the social media platforms and social media influencers, about how to use deep fake technology.

5.5 E- Cigarettes

Why in the news?

Recently, a health report states that despite advertising restrictions, 85% of young people, surveyed across four countries, reported being exposed to e-cigarette advertising from at least one type of media.

What are e Cigarettes?

- E-cigarettes, also known as electronic nicotine delivery systems (ENDS), operate using a battery-operated device. Instead of burning tobacco like traditional cigarettes, e-cigarettes produce aerosol by heating a solution containing nicotine and other substances.

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How do e-cigarettes work?

- The device contains nicotine and flavors in the form of liquid, primarily composed of solvents such as **glycerol and/or propylene glycol.** The aerosol, containing fine particles and gases, simulates cigarette smoke. After a puff, the aerosol is delivered to the user's mouth and lungs, and the rest is exhaled.

- E-cigarettes come in many shapes and sizes. Most have a battery, a heating element, and a place to hold a liquid.

- Some e-cigarettes are made to look like regular cigarettes, cigars, or pipes. Some resemble pens, USB sticks, and other everyday items.

- Using an e-cigarette is sometimes called "vaping."

- E-cigarettes can be **used to deliver marijuana and other drugs.**

Difference between normal and e cigarette:

- **Tobacco:** Traditional cigarettes contain tobacco, while e-cigarettes do not.

- **Chemicals:** E-cigarettes produce other toxic chemicals, including nicotine, flavorings, and other chemicals. Traditional cigarettes contain 7,000 chemicals, many of which are toxic.

- **Liquid:** E-cigarettes heat a liquid, usually from a refillable cartridge, to produce a vapor. The liquid burns at a lower temperature than a traditional cigarette.

- **Nicotine:** Average smokers trying to compare their nicotine intake to cigarette levels would prefer vape nicotine levels of 3 to 15 milligrams per ml. A 20mg/ml vape, with 40mg of nicotine, is the equivalent of smoking one or two packs of 20 cigarettes.

- **Flavors:** E-cigarettes come in flavors like bubble gum, fruit, and candy.

- **Safety:** Vaping is less harmful than smoking, but it's still not safe. According to the USA's Centers for Disease Control and Prevention (CDC), by early 2020, there had been around 2,800 hospitalizations or deaths total with 68 of those confirmed deaths from vaping.

Issues:

- **Addictive:** Most e-cigarettes contain nicotine, which is addictive and toxic to developing fetuses.

  - Nicotine exposure can also harm adolescent and young adult **brain development,** which continues into the early to mid-20s.

- **Harmful chemicals:** E-cigarette aerosols can contain chemicals that are **harmful to the lungs.**

- It can contain harmful and potentially harmful substances, including **nicotine, heavy metals like lead, volatile organic compounds, and cancer-causing agents.**

- **Might use other products too:** And youth e-cigarette use is associated with the **use of other tobacco products, including cigarettes.**

- **Health effects: Lung problems:** Vaping can make you more likely to get asthma and other lung conditions, such as lung scarring, organ damage, and EVALI.

  - **Cardiovascular disease:** E-cigarettes produce dangerous chemicals, including acetaldehyde, acrolein, and formaldehyde, which can cause lung and cardiovascular disease.

Do they help smokers to kick the habit?

- Manufacturers have promoted e-cigarettes as a harm-reducing product and a smoking cessation aid.

- However, evidence supporting the claim that e-cigarettes help people quit smoking is limited. The U.S. Food and Drug Administration (FDA) has not approved e-cigarettes as an alternative to reduce smoking.

Legal Provisions in India:

- The Prohibition of Electronic Cigarettes (Production, Manufacture, Import, Export, Transport, Sale, Distribution, Storage and Advertisement) Act, also known as PECA 2019, came into force in 2019.

- This law prohibits the production, manufacture, import, export, transport, sale, distribution, storage, and advertisement of e-cigarettes and similar devices.

- The law aims to protect public health and prevent harm from the use of these products. Violation of the provisions of PECA 2019 can lead to penalties and imprisonment.

- The Union Health Ministry in India has been taking steps to enforce the ban and raise awareness about the risks associated with e-cigarettes.
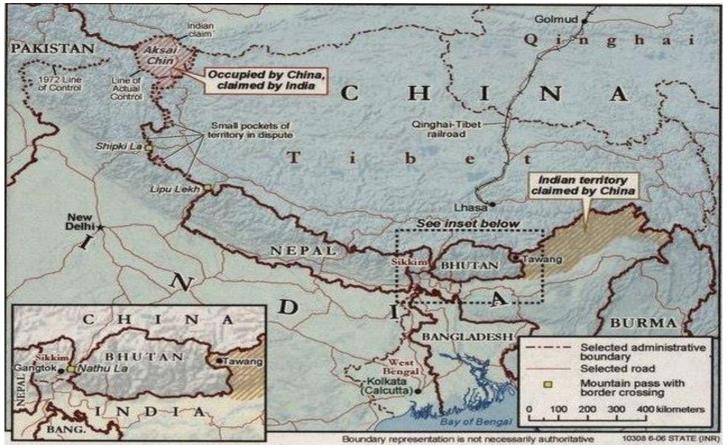
6. SECURITY

6.1 India - China Border Issue

Why in the news?

Recently, the tensions along the Indo China borders have made India to revisit the peace talks between India and China since **Border Peace and Tranquility Agreement** which was signed thirty years ago.

Reasons for India China border issue:

- **Territorial Dispute and Unresolved Border:** The primary reason for the India-China border issue is the existence of an ill-defined, 3,440km (2,100-mile)-long disputed border. The Line of Actual Control

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(LAC) is not clearly demarcated, leading to frequent tensions as both nations interpret the line differently.

- **Competing Claims in Aksai Chin:** The Aksai Chin region, part of the Western Sector, is a major point of contention. India claims the entire Aksai Chin territory, considering it part of Jammu and Kashmir. In contrast, China contests Indian control over Daulat Beg Oldi in Aksai Chin.

- **Infrastructure Development:** Both countries are engaged in building infrastructure along the border, adding to tensions. For example, India's construction of a road to a high-altitude air base triggered a deadly clash in 2020.

- **Historical Border Disagreements:** The historical roots of the dispute trace back to the 19th century, with conflicting interpretations of the Johnson Line and McMahon Line. While India accepts the Johnson Line, marking Aksai Chin as its territory, China follows the McDonald Line, claiming Aksai Chin as Chinese territory.

- **Military Standoffs and Conflicts:** The 1962 India-China War over Aksai Chin and Arunachal Pradesh significantly escalated tensions. Subsequent military incidents, including the 2017 Doklam standoff and clashes in 2022, contribute to the ongoing border issues.

- **Differing Views on the Line of Actual Control:** The LAC, an informal ceasefire line established after the 1962 war, is subject to different interpretations. India considers the McMahon Line as its version of the LAC, while China claims Aksai Chin and Arunachal Pradesh as its territory.

- **Geostrategic Concerns and Regional Dynamics:** Beyond the immediate border disputes, larger geopolitical concerns contribute to the tension. China's expansionist policies, coupled with its support for Pakistan and disregard for international opinions, add complexity to the India-China relationship.

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Impediments in arriving peace settlement of Border dispute:

- **Historical Baggage and Unresolved Legacy:** The unresolved historical legacy, including the 1962 war and the failure to agree on the McMahon Line, creates a significant impediment. The baggage from past conflicts hampers the trust-building necessary for a peace settlement.

- **Strategic Concerns and National Pride:** Both nations attach strategic importance to the disputed territories, and any compromise on borders may be perceived as a loss of strategic advantage. National pride is often intertwined with territorial integrity, making concessions challenging for political leaders.

- **Geopolitical Dynamics and Regional Alliances:** The broader geopolitical dynamics in the region, including China's alliance with Pakistan, impact negotiations. Regional alliances and power balances contribute to the complexity of the border dispute, making it challenging to arrive at a settlement without considering broader geopolitical considerations.

- **Infrastructure Development and Military Buildup:** Ongoing infrastructure development along the border by both countries, coupled with military buildups, adds another layer of complexity. The competition for strategic advantage through infrastructure and military presence hinders peaceful negotiations.

- **Lack of Trust and Confidence:** The historical conflicts, military standoffs, and border skirmishes have led to a lack of trust and confidence between the two nations. Building the necessary trust for successful negotiations becomes difficult in such an environment.

- **Global and Domestic Pressures:** Global and domestic pressures on both India and China, including domestic political considerations and global power dynamics, influence the negotiation process. Political leaders may face challenges in making concessions due to domestic public opinion and global geopolitical pressures.

- **Economic Interests and Trade Relationships:** The economic interests intertwined with the border regions further complicate the issue. Both nations have economic stakes in the disputed territories, and any resolution needs to address these economic concerns, making negotiations more intricate.

- **Security Concerns and Nuclear Deterrence:** The fact that both India and China are nuclear powers adds a layer of complexity to the security dynamics. Security concerns, including the potential for military escalation, make reaching a peaceful settlement more challenging.

Measures taken by Indian government to resolve the border issue:

- **Diplomatic Agreements and Talks:** India has engaged in multiple diplomatic talks with China to address the border issue. Agreements like the Shimla Agreement of 1914, Panchsheel Agreement of 1954, and others have aimed at finding diplomatic solutions.

- **Formation of Joint Working Group:** In 1989, India established a Joint Working Group for Confidence Building Measures (CBMs) to facilitate dialogue and build trust. This group works towards resolving issues related to the India-China border.

- **Bilateral Agreements on the Line of Actual Control (LAC):** India and China signed agreements specifically addressing the Line of Actual Control (LAC). For instance, the 1993 Agreement for Maintenance of Peace and Tranquillity along the LAC is aimed at preventing incidents along the border.

- **Framework for Border Settlement:** In 2003, a framework was established with the signing of the Declaration on Principles for Relations and Comprehensive Cooperation. Special Representatives were appointed to explore a framework for a boundary settlement from a political perspective.

- **Three-Step Resolution Proposal:** India proposed a three-step resolution to the border disputes in 2005. This included a bilateral agreement on principles, an exchange of maps, and the final demarcation of borders. The intention was to provide a structured process for resolving the longstanding issues.

- **Consultation and Coordination Mechanism:** In 2012, India and China agreed on the establishment of a working mechanism for Consultation and Coordination on India-China borders. This mechanism serves as a platform for regular communication and consultation between the two nations.

- **Confidence-Building Measures (CBMs):** India and China have agreed on various Confidence-Building Measures, including protocols on modalities for the implementation of CBMs in the military field along the LAC. These measures aim to reduce the risk of military confrontations.

- **Recognition of Sikkim's Sovereignty:** In 2003, China officially recognized Sikkim as part of India. This recognition contributed to the improvement of bilateral ties and marked progress in resolving territorial disputes.

- **Declaration on Guiding Principles:** The Declaration on Guiding Principles and Political Parameters for the Settlement of the India-China Boundary Question was signed in 2005, providing a foundation for addressing key aspects of the border dispute.

- **Economic Engagement and Bilateral Relations:** India has pursued economic engagement with China, recognizing the potential for economic cooperation as an incentive for positive diplomatic relations. While economic engagement is not a direct measure to resolve the border issue, it contributes to a broader framework of bilateral relations.

Way forward:

- **Enhanced Diplomatic Engagement:** Increase diplomatic efforts and engagements between India and China to foster open communication channels. Regular high-level talks, summit meetings, and dialogue sessions can contribute to better understanding and trust-building.

- **Strengthening Confidence-Building Measures (CBMs):** Reinforce and expand existing Confidence-Building Measures to reduce the risk of military confrontations along the border. This includes protocols for handling border incidents, regular communication between military authorities, and joint military exercises for trust-building.

- **Joint Border Management and Surveillance:** Collaborate on joint border management initiatives and enhance surveillance mechanisms. Utilize technology and joint patrolling to monitor the border regions, reducing the likelihood of misunderstandings and incursions.

- **Framework for Comprehensive Resolution:** Develop a comprehensive framework for resolving the border dispute, encompassing all sectors, including Western, Middle, and Eastern. This framework should consider historical agreements, differing interpretations, and the specific concerns of each sector.

- **Economic Cooperation and Interdependence:** Leverage economic interdependence as a means to strengthen bilateral relations. Encourage trade, investments, and joint infrastructure projects, creating mutual dependencies that can act as incentives for maintaining peace and stability.

- **International Mediation or Arbitration:** Explore the possibility of neutral international mediation or arbitration to facilitate the resolution process. A neutral third-party mediator or arbitration body could provide an unbiased perspective, helping both nations find common ground and reach a fair resolution.

- **Public Diplomacy and People-to-People Contacts:** Foster people-to-people contacts and public diplomacy initiatives to build understanding and goodwill between the citizens of India and China. Cultural exchanges, educational programs, and joint initiatives can contribute to long-term positive perceptions.

Major border disputes between India and China:

- **Aksai Chin (1962):** The Aksai Chin region, a part of the Western Sector, was a major point of conflict leading to the 1962 India-China War. China's annexation of Aksai Chin and India's claim over the territory resulted in a military confrontation.

- **Nathu La and Cho La (1967):** In 1967, there were two incidents of armed conflict between India and China. The first occurred at Nathu La, and the second at Cho La, both situated in the Sikkim region. These clashes added to the historical tensions along the border.

- **Sumdorong Chu Valley (1987):** In 1987, a military standoff occurred in the Sumdorong Chu Valley in Arunachal Pradesh. The dispute involved differing perceptions of the Line of Actual Control (LAC) in the eastern sector, contributing to heightened tensions.

- **Doklam Standoff (2017):** The Doklam standoff involved a military confrontation between India, China, and Bhutan in the Doklam plateau, near the tri-junction of the three countries. The dispute arose over Chinese road construction activities in the region.

- **Clashes in Galwan Valley (2020):** In 2020, deadly clashes erupted in the Galwan Valley, part of the disputed Ladakh region. The conflict resulted in casualties on both sides and marked a significant escalation in tensions, drawing international attention.

- **Tawang Clash (2022):** In December 2022, troops from India and China clashed near the Tawang sector of Arunachal Pradesh. While the clash resulted in minor injuries, it highlighted the ongoing tensions and sporadic incidents along the disputed border.

About Border Peace and Tranquillity Agreement:

- The Border Peace and Tranquillity Agreement is an agreement signed by China and India in September 1993, agreeing to maintain the status quo on their mutual border pending an eventual boundary settlement.

- The Agreement on Military Confidence Building Measures, 1996, pursuant to the 1993 agreement, incrementally details the military confidence building measures to be implemented that would ensure no-war.

- The Protocol for the Implementation of Military Confidence Building Measures, 2005 further discussed modalities to implement the confidence building measures.

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