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This Document was prepared under the supervision of Mr. Pramod Singh, Director, Edge IAS.

Current Affairs, February 2023

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1. Polity and Governance

1.1 Privilege Motion

Breach of privilege motion moved against senior BJP MLA and Deputy Leader of the Opposition led to an uproar in the Rajasthan Assembly recently, with Speaker announcing that a decision on the motion will be taken shortly.

About Privilege Motion:
- All Members of Parliament (MPs) enjoy rights and immunities, individually and collectively, so that they can discharge their duties and functions effectively.
- Any instance when these rights and immunities are disregarded by any member of Lok Sabha or Rajya Sabha is an offence, called 'breach of privilege', which is punishable under the Laws of Parliament.
- Article 105 of the Constitution expressly mentions two privileges, that is, freedom of speech in Parliament and right of publication of its proceedings.
- Apart from the privileges as specified in the Constitution, the Code of Civil Procedure, 1908, provides for freedom from arrest and detention of members under civil process during the continuance of the meeting of the House or of a committee thereof and forty days before its commencement and forty days after its conclusion.

Applicability:
- The Constitution also extends the parliamentary privileges to those persons who are entitled to speak and take part in the proceedings of a House of Parliament or any of its committee
- These also include the Attorney General of India.
- The parliamentary privileges do not extend to the President who is also an integral part of the Parliament.
- Article 361 of the Constitution provides for privileges for the President.

Role of the Lok Sabha Speaker and Rajya Sabha Chairperson:
- The speaker of Lok Sabha and the Chairperson of Rajya Sabha are the first levels of scrutiny of a privilege motion in the two Houses of Parliament.
- They can either take a decision on the privilege motion or can also refer it to the privileges committee of Parliament.
- Once the Speaker or the House Chairperson gives consent under Rule 222, the concerned member is allowed to explain himself or herself.

Rules Governing Privilege:
- Rule No 222 in Chapter 20 of the Lok Sabha Rule Book and correspondingly Rule 187 in Chapter 16 of the Rajya Sabha rulebook governs privilege.
- Rules say that a member may, with the consent of the Speaker or the Chairperson, raise a question involving a breach of privilege either of a member or of the House or a committee thereof.

Privilege Committee:
- The Speaker of Lok Sabha nominates a committee of privileges consisting of 15 members of parliament from each party.
- While the Rajya Sabha committee has 10 members.
- The Speaker may also allow a half-hour debate on the report by the committee before passing orders or directing that the report be tabled before the House.

1.2 Judicial Majoritarianism

The recent majority judgment of the Supreme Court on demonetisation comes under criticism, the minority

judgment by J. Nagarathna is being hailed for its challenge to the RBI's institutional acquiescence to the Central government.

About Judicial Majoritarianism:
- As opposed to standard matters heard by Division Benches consisting of two judges, numerical majorities are of particular importance to cases which involve a substantial interpretation of constitutional provisions.
- In such cases, Constitutional Benches, consisting of five or more judges, are set up in consonance with Article 145(3) of the Constitution.
- Such Benches usually consist of 5, 6, 9, 11 or even 13 judges.
- This is done to facilitate decision-making by ensuring numerical majorities in judicial outcomes.
- Article 145(5) of the Constitution: It states that no judgment in such cases can be delivered except with the concurrence of a majority of the judges but that judges are free to deliver dissenting judgments or opinions.

Differences among the judges and methodological fallacies:
- Any differences in judicial decisions can be attributed to a difference in either the methodology adopted and the logic applied by the judges.
- The differences can also be attributed to the judges' own 'judicial hunches' which may be an outcome of their subjective experiences, outlook, and biases.
- In such circumstances, it is entirely possible that the majority may fall into either methodological fallacies and errors or be limited by their 'judicial hunch' respectively.
- In such situations, a meritorious minority decision, irrespective of the impeccability of its reasoning receives little weightage in terms of its outcomes.

For example:
- The dissenting opinion of Justice H.R. Khanna in A.D.M. Jabalpur v. Shivkant Shukla (1976) upholding the right to life and personal liberty even during situations of constitutional exceptionalism.
- Dissenting opinion of Justice Subba Rao in the Kharak Singh v. State of U.P. (1962) case upholding the right to privacy which received the judicial stamp of approval in the K.S. Puttaswamy v. UOI (2017) case.

Dissenting opinions:
- The rate of judicial dissent at the height of the Emergency in 1976 was a mere 27% as opposed to 10.52% in 1980.
- The rate of dissent where the Chief Justice was a part of the Bench was lower than in those cases where the Chief Justice was not on the Bench.
- Such situations call into question the efficiency and desirability of head-counting procedures for a judicial determination on questions of national and constitutional importance.

1.3 Joint Parliamentary Committee

The Opposition joined hands to demand a probe either by a Joint Parliamentary Committee (JPC), headed by the Supreme Court or monitored by the Chief Justice of India, into the allegations of fraud and stock manipulation against the Adani Group.

About Joint Parliamentary Committee:
- A Joint Parliamentary Committee (JPC) is set up by the Parliament for a special purpose, like for the detailed scrutiny of a subject or Bill.
- It has members from both the Houses and from both the ruling parties and the opposition.
- Members of the JPC are decided by the Parliament.
- There is no fixed number of members in the committee.

- It is dissolved after its term ends or its task has been completed.
- The recommendations made by the committee are in recommendatory in nature not binding on the government.

Powers of the committee:
- A JPC can obtain evidence of experts, public bodies, associations, individuals or interested parties suo motu or on requests made by them.
- If a witness fails to appear before a JPC in response to summons, his conduct constitutes a contempt of the House.
- Ministers are not generally called by the committees to give evidence.
- However, with the permission of the Speaker, the JPC can seek information on certain points from ministers and call the ministers.
- The JPC can take oral and written evidence or call for documents in connection with a matter under its consideration.

The Joint Parliamentary Committees are formed till date include the following cases:
- Bofors scandal (1987)
- Harshad Mehta Stock market scam (1992)
- Ketan Parekh share market scam (2001)
- Soft drink pesticide issue (2003)
- 2G spectrum case (2011)
- VVIP Chopper scam (2013)
- Land Acquisition (2015)
- NRC (2016)
- Personal Data Protection Bill (2019)

1.4 Legal Aid Defense Counsel System (LADCS)

Recently the Chief Justice of Telangana High Court said that newly introduced system of Legal Aid Defense Counsel System (LADCS) should help under-trial prisoners belong to marginalised and weaker sections of the society.

About the Legal Aid Defence Counsel System:
- It will provide free legal assistance to the accused in custody and the defendants in criminal cases in line with the public defence system.
- It would come to the rescue of the needy, for and distressed persons in the State.
- A team of select lawyers will fight cases for the defendants for free, on the lines of the office of public prosecutors.
- The LADCS lawyers will receive monthly salary and would not handle other cases.
- The legal aid is being offered at pre-arrest, remand, trial and appellate stages in criminal matters to the accused or convicts coming under section 12 of the Legal Services Act-1987.

About National Legal Services Authority:
- Constituted under the Legal Services Authorities Act, 1987.
- While the Chief Justice of India is the Patron-in-Chief, the second senior most judge of the Supreme Court of India is the executive chairperson of the Authority.
- In every State, State Legal Services Authority has been constituted to give effect to the policies and directions of the NALSA and to give free legal services to the people and conduct Lok Adalats in the State.
- The State Legal Services Authority is headed by Hon'ble the Chief Justice of the respective High Court.

Constitutional Provisions:
- Article 39A of the Constitution of India provides that State shall secure that the operation of the legal

system promotes justice on a basis of equal opportunity, and shall in particular, provide free legal aid, by suitable legislation or schemes or in any other way, to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disability.
- Articles 14 and 22(1) also make it obligatory for the State to ensure equality before law and a legal system which promotes justice on a basis of equal opportunity to all.

Objectives of Legal Services Authorities:
- Provide free legal aid and advice.
- Spread legal awareness.
- Organize Lok Adalats.
- Promote settlements of disputes through Alternative Dispute Resolution (ADR) Mechanisms. Various kinds of ADR mechanisms are Arbitration, Conciliation, Judicial settlement including settlement through Lok Adalat, or Mediation.
- Provide compensation to victims of crime.

1.5 No bar on contesting two seats in one poll

The Supreme Court has refused to set aside a provision in the election law that allows candidates to contest polls from two constituencies simultaneously.

Why: SC feels that it is a policy matter and an issue concerning political democracy. Hence, it is for the Parliament to take a call.

Background: The petition filed by advocate Ashwini Upadhyay, represented by senior advocate Gopal Sankaranarayanan, had sought the court to declare Section 33(7) of the Representation of People Act invalid and ultra vires.
- Like one-person-one-vote, one-candidate-one-constituency is the dictum of democracy.
- Section 33(7) of the Act allows a person to contest a general election or a group of by-elections or biennial elections from two constituencies.
- But the court chose to leave the issue to the wisdom of the Parliament.
- In 2018, the government had objected to the petition in court.
- It had argued that law cannot curtail the right of a candidate to contest elections and curtail the polity's choice of candidates.
- The government had further told the Supreme Court that one-candidate-one-constituency restriction would require a legislative amendment. It had supported Section 33 (7).
- Before the amendment, candidates could contest from any number of constituencies. The government had said the restriction to two constituencies was reasonable enough, and there was no need to change the law now.
- The Election Commission had, in an affidavit in 2018, supported the petition. It had informed the Supreme Court that it had proposed an amendment to Section 33(7) in July 2004.
- There have been cases where a person contests election from two constituencies, and wins from both.
- In such a situation he vacates the seat in one of the two constituencies.
- The consequence is that a by-election would be required from one constituency involving avoidable expenditure on the conduct of that bye-election.

Conclusion:
- Law should be amended to provide that a person cannot contest from more than one constituency at a time.
- A candidate should deposit an amount of ₹5 lakh for contesting in two constituencies in an Assembly election or ₹10 lakh in a general election.
- The amount would be used to cover the expenses for a by-election in the eventuality that he or she was victorious in both constituencies and had to relinquish one.

1.6 National Commission for Scheduled Tribes (NCST)

According to the Ministry of Tribal Affairs, the NCST is functioning with less than 50% of its sanctioned strength.

About NCST:
- The National Commission for Scheduled Tribes (NCST) was established by amending Article 338 and inserting a new Article 338A in the Constitution through the Constitution (89th Amendment) Act, 2003.
- By this amendment, the erstwhile National Commission for Scheduled Castes and Scheduled Tribes was replaced by two separate Commissions namely- (i) the National Commission for Scheduled Castes (NCSC), and (ii) the National Commission for Scheduled Tribes (NCST) w.e.f. 19 February, 2004.
- The Chairperson has been given the rank of Union Cabinet Minister, and the Vice-Chairperson that of a Minister of State and other Members have the ranks of a Secretary to the Government of India.

Composition
- It consists of a Chairperson, a Vice-Chairperson and 3 other Members who are appointed by the President by warrant under his hand and seal.
- At least one member should be a woman.
- The Chairperson, the Vice-Chairperson and the other Members hold office for a term of 3 years.
- The members are not eligible for appointment for more than two terms.

Major functions of commission under 338A
- To investigate & Monitor matters relating to Safeguards provided for STs under the Constitution or under other laws
- To inquire into specific complaints relating to Rights & Safeguards of STs
- To participate and Advise in the Planning Process relating to Socio-economic development of STs
- To annually present report to the President
- To discharge such other functions in relation to STs as the President may, subject to the provisions of any law made by Parliament, by rule specify.

1.7 Article 105 of the Indian Constitution

Recently, the Congress President cited Article 105 of the Constitution that deals with the privileges and powers of parliamentarians, to protest against the expunction of parts of his speech.

About Article 105 of the Constitution:
- Article 105 pertains to the powers, privileges, etc, of Parliament, its members and committees.
- Article 194, protects the privileges and powers of the houses of legislature, their members and committees in the states.
- Simply put, Members of Parliament are exempted from any legal action for any statement made or act done in the course of their duties.
- For example, a defamation suit cannot be filed for a statement made in the House.
- This immunity extends to certain non-members as well, such as the Attorney General for India or a Minister who may not be a member but speaks in the House.
- In cases where a Member oversteps or exceeds the contours of admissible free speech, the Speaker or the House itself will deal with it, as opposed to the court.
- The speech of MPs is subject to the discipline of the Rules of Parliament, "good sense" of its Members, and the control of proceedings by the Speaker.
- These checks ensure that MPs cannot use "defamatory or indecent or undignified or unparliamentary words" inside the House.

1.8 Dawoodi Bohras

The long-pending challenge to the practice of excommunication in the Shia sect has been referred to the 9-judge Bench hearing the Sabarimala review petition on essential religious practice.

Who are the Dawoodi Bohras?
- Shia Muslims whose leader is known as the Al-Dai-Al-Mutlaq.
- There are around 1 million Dawoodi Bohras spread around the world.
- The main language of the community is Lisan al-Dawat, a dialect of Gujarati with inclusions from Arabic and Urdu.

Practice of excommunication in the Dawoodi Bohra community
- The leader of the community is recognised by the members as having the right to excommunicate its members.
- In practical terms, excommunication means not being allowed to access a mosque belonging to the community or a burial dedicated to the community.

Legal validity of excommunication?
- Article 25 – Freedom of conscience and free profession, practice and propagation of religion
- Article 26 – Freedom to manage religious affairs
- The practice was claimed to be essential to the Dawoodi Bohra faith.
- SC's view- The SC held in 1962 held that the Dai's position is an essential part of the community.

What is the plea now?
- The 2016 Act– The Maharashtra Protection of People from Social Boycott (Prevention, Prohibition and Redressal) Act, 2016 prohibits social boycott of a person or a group of persons describing it as "inhuman".
- The act defines 16 types of social boycott– including preventing members of a community from having access to facilities including community halls, and burial grounds, among others.
- It is termed as a violation of fundamental rights punishable with imprisonment for up to 3 years.
- Supreme Court's consideration– The Supreme Court has said that it would consider whether the practice protected by the 1962 constitutional bench order can continue.
- It is referred to the 9-judge Bench hearing the Sabarimala review petition on essential religious practice.

1.9 Custodial deaths

80 custodial deaths in 5 years, Gujarat tops list; Maharashtra second at 76

What is Custodial death?
- Custodial death means the death of a person in custody whether of the police or judicial.
- Custodial Death is widely referred to as death that happens to a person who is under trial or has already been convicted of a crime.

Constitutional and Legal Provisions:
- Protection from torture is a fundamental right enshrined under Article 21 (Right to Life) of the Indian constitution.
- The right to counsel is also a fundamental right under Article 22(1) of the India constitution.
- Section 41 of Criminal Procedure Code (CrPC) was amended in 2009 to include safeguards under 41A, 41B, 41C and 41D, so that arrests and detentions for interrogation have reasonable grounds and documented procedures, arrests are made transparent to family, friends and public, and there is protection through legal representation.

Court judgements on Custodial deaths/ Custodial violence:
- In Inderjeet v. State of Uttar Pradesh (2014), the Supreme Court held that punishment which has an element of torture is unconstitutional.
- In Francis Coralie Mullin vs. The Administrator, Union (1981) the Supreme Court held that Article 21 includes the right to protection against torture.
- D K. Basu v. State of West Bengal (1997) guidelines were passed to try and secure two rights in the context of any state action — a right to life and a right to know.

Some of the guidelines laid down in D K Basu judgement are:
- All officials must carry name tags and full identification
- Arrest memo must be prepared, containing all details regarding time and place of arrest, attested by one family member or respectable member of the locality.
- The location of arrest must be intimated to one family or next friend, details notified to the nearest legal aid organisation and arrestee must be made known of each right
- All such compliances must be recorded in the police register
- He must get periodical medical examination
- Inspection memo must be signed by the arrestee also and all such information must be centralised in a central police control room.

1.10 BIMARU Tag
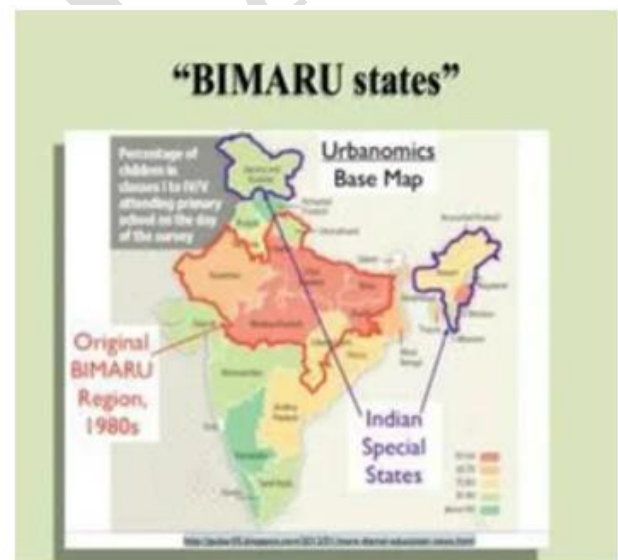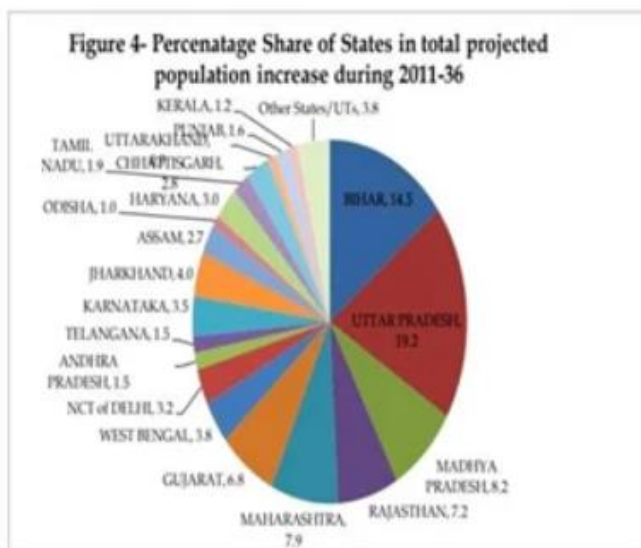
While addressing a summit in UP, PM recalled the tag of 'BIMARU', once used to describe the state.

What do BIMARU states mean, who coined the term?
- BIMARU refers to a group of states in India, namely Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh.
- The term was coined by the late demographer Ashish Bose in 1985 to highlight India's demographic malady.
- Grouping was primarily based on their high population growth rates and a lack of progress in family planning and population control efforts.
- The term BIMARU means "sickly" in Hindi.
- Was used to refer to the slow rate of growth in terms of the economy, healthcare, education and other socio-economic characteristics.
- A 2020 report of the National Commission on Population of the Union Ministry of Health & Family Welfare, titled Report of the Technical Group on Population Projection, said BIMARU states will contribute to 49.1% of the population increase in India between 2011 and 2036.

The literacy rates in these states according to the 2011 census against a National average of 74.04%., are:
- Bihar 63.8%,
- Rajasthan 67.1%,
- Jharkhand 67.6%,
- Madhya Pradesh 70.6% and
- Uttar Pradesh 71.7%

1.11 Allocation of Election Symbols by Election Commission of India (ECI)

Has recognised Eknath Shinde group as official "Shiv Sena", allowing them to use the official "Bow & Arrow" symbol and "Shiv Sena" name.

Sadiq Ali case
- The ECI has applied the tests mentioned in the 1971 Supreme Court judgment in Sadiq Ali v. Election Commission of India.
- In the Sadiq Ali case, it was held that in matters of disputes among groups of a political party, the test of majority support among the members of the 'organizational and legislature wings' of the party was the critical test to decide the dispute.
- It includes the Test of aims and objects of the Party Constitution, Test of Party Constitution and Test of Majority.

The 1968 Order
- On the question of a split in a political party outside the legislature, Para 15 of the Symbols Order, 1968, states that the decision of the Commission shall be binding on all such rival sections or groups.
- This applies to disputes in recognised national and state parties (like the Shiv Sena).
- For splits in registered but unrecognized parties, the ECI usually advises the warring factions to resolve their differences internally or to approach the court.
- The first case to be decided under the 1968 Order was the first split in the Indian National Congress in 1969.

Election Symbols:
- Political parties are allotted the symbols by the Election Commission of India under the Election Symbols (Reservation & Allotment) Order, 1968.
- A reserved symbol is one that is allocated to a registered political party while a free symbol is available to be allocated to non-recognized parties and independent candidates.
- Paragraph 4 of the order deals with the allotment of symbols.
- Paragraph 5 classifies the symbol into reserved and free symbols.
- Paragraph 8 of the Election Symbols Order deals with the choice and allotment of symbols to candidates of national and state parties.

Registration of Political Parties:
- According to the Election Commission, any party seeking registration has to apply to the Commission within a period of 30 days following the date of its formation as per guidelines prescribed by the Commission
- It is in exercise of the powers conferred by Article 324 of the Constitution of India and Section 29A of the Representation of the People Act, 1951.
- The registration of all political parties is governed by the provisions of Section 29A of the Representation of the People Act, 1951.

1.12 Role of a Whip

A five-judge Bench led by Chief Justice of India (CJI) D Y Chandrachud is hearing petitions filed in the wake of last year's political crisis in Maharashtra.

About the Role of a Whip:
- A whip is an official of a political party whose task is to ensure party discipline in the legislature.
- Whips are the party's "enforcers".
- The whip ensures that the members of the political party vote according to the party, rather than according to their own individual ideology or the will of their donors or constituents.
- Every political party, whether ruling or Opposition has its own whip in the Parliament.
- He is appointed by the political party and serves as an assistant floor leader.
- Under the Tenth Schedule (anti-defection law) a political party has a constitutional right to issue a whip to its legislators.

Kihoto Hollohan vs Zachillhu case, 1992
- The Supreme court held that the application of the Tenth Schedule is limited to a vote on a "motion of confidence" or "no-confidence" in the government or where the motion under consideration relates to a matter which was an integral policy and programme of the political party.
- Paragraph 2(1)(b) provides for a lawmaker's disqualification "if he votes or abstains from voting in such House contrary to any direction

Historical background :
- In India, the concept of the whip was inherited from colonial British rule.
- The office of 'whip', is mentioned neither in the Constitution of India nor in the Rules of the House nor in a Parliamentary Statute.
- It is based on the conventions of the parliamentary government.

Defiance of Whip
- A legislator may face disqualification proceedings if they disobey the whip of the party unless the number of lawmakers defying the whip is 2/3rds of the party's strength in the house.
- This disqualification is decided by the Speaker/Chairman of the house.

2. International Relations

2.1 Universal Periodic Review

Lanka has concluded its Review under the 4th Cycle of the Universal Periodic Review (UPR) in Geneva

Universal Periodic Review
- The Universal Periodic Review was established by the General Assembly of the United Nations (UNGA) in 2006
- It is a State-driven voluntary peer-review process which provides the opportunity for each State to declare the steps taken at the national level to improve the human rights situation at that State and to fulfil their human rights obligations.
- The goal of UPR is the improvement of the human rights situation in every country
- The UPR also aims to provide technical assistance to States and enhance their capacity to deal effectively with human rights challenges and to share best practices in the field of human rights among States and other stakeholders.
- The reviews are conducted by the UPR Working Group which consists of the 47 members of the Council
- Any UN Member State can take part in the discussion/dialogue with the reviewed States.
- Each State review is assisted by groups of three States, known as "troikas", who serve as rapporteurs.
- The selection of the troikas for each State is done through a drawing of lots following elections for the Council membership in the General Assembly.

2.2 Green Deal Industrial Plan

Recently, the European Union revealed the "Green Deal Industrial Plan" that aims to cut red tape and provide massive subsidies in a bid to support and expand its green industry.

Regulatory Framework:
- By regulatory framework, the Green Deal Industrial Plan seeks to formulate a strategy for the "Net-Zero Industry Act."
- This will not only simplify rules for traders to trade and operate freely but will expedite the process of trade permits and insurance for green projects, such as renewable energy generation arrays, carbon capture and renewable hydrogen production facilities.

Faster funds arrangement:
- The rules will be relaxed to facilitate easier investment and raising of funds for the EU's 27 governments to operate and work on clean energy projects.
- The proposal has been formulated to help European (Non-rich) by offering subsidies and allowing the usage of existing EU funds.

Enhancement of skills:
- The 'Green Deal Industrial Plan' aims to create a "Net-Zero Industry Academies" that will provide up-skilling and re-skilling programmes in strategic industries.

Trade improvement:
- The deal plan also emphasizes on the significance of free and open trade and aims to further 'develop EU's network of Free Trade Agreements and other forms of cooperation with partners to support the green transition."

USA's Inflation Reduction Act (IRA):
- It is a landmark United States federal law which aims to curb inflation by reducing the deficit, lowering prescription drug prices, and investing into domestic energy production while promoting clean energy.

2.3 India-USA relations

- The talks between India's National Security Advisor Ajit Doval and his American counterpart Jake Sullivan have concluded with the announcement of a new road map for deeper military and techno-economic cooperation between the two countries.
- The bilateral Initiative on Critical and Emerging Technologies (iCET) could lend a new strategic depth and breadth to the expanding engagement between India and the United States.
- The idea was first mooted in the meeting between Prime Minister Narendra Modi and President Joe Biden on the margins of the Tokyo summit of the Quadrilateral Security Dialogue (Quad) in 2022

Bilateral relations
- The U.S.-India strategic partnership is founded on shared values including a commitment to democracy and upholding the rules-based international system.
- The United States and India have shared interests in promoting global security, stability, and economic prosperity through trade, investment, and connectivity.
- India and the United States cooperate closely at multilateral organizations, including the United Nations, G-20, Association of Southeast Asian Nations (ASEAN) Regional Forum, International Monetary Fund, World Bank, and World Trade Organization.
- India is an ASEAN dialogue partner, an Organization for Economic Cooperation and Development partner, and an observer to the Organization of American States.
- Together with Australia and Japan, the United States and India convene as the Quad to promote a free and open Indo-Pacific and provide tangible benefits to the region.
- India is also one of twelve countries partnering with the United States on the Indo-Pacific Economic Framework for Prosperity (IPEF) to make our economies more connected, resilient, clean, and fair.
- India is a member of the Indian Ocean Rim Association (IORA), at which the United States is a dialogue partner.

Political relations
- President Biden and Prime Minister Modi have participated in multiple engagements of the Quad Leaders mechanism with Japan and Australia
- The 2+2 Ministerial Dialogue between the U.S. Secretaries of State and Defense and their Indian counterparts is the premier recurring dialogue mechanism between the United States and India.
- The United States hosted the fourth 2+2 Dialogue in 2022.
- The United States welcomed India joining the UN Security Council in 2021 for a two-year term and supports a reformed UN Security Council that includes India as a permanent member.
- Various working groups – Civil Space Working Group, the Education and Skills Development Working Group, Trade Policy Forum, Defense Policy Group, and Counternarcotics Working Group.

Economic relations
- In 2021, overall U.S.-India bilateral trade in goods and services reached a record $157 billion.
- The United States is India's largest trading partner and most important export market.
- Indian companies seek to increase their presence in U.S. markets and at the end of 2020, Indian investment in the United States totaled $12.7 billion, supporting over 70,000 American jobs.
- USA accounts for 16 percent in the exports of goods exports and 50 percent of IT and BPO services.
- Major items of exports to USA are apparels, diamonds, marine products and footwear – These industries are labour intensive and hence will pave the way for more employment opportunities in the sectors

Environment
- India and USA launched the "Climate Action and Finance Mobilization Dialogue (CAFMD)".
- Under the Climate and Clean Energy Agenda 2030 partnership
- It was launched at the Leaders' Summit on Climate in 2021
- In 2021, the United States joined the International Solar Alliance headquartered in India
- In 2022 the United States Agency for International Development (USAID) Administrator Samantha Power became Co-chair of the Governing Council of the Coalition for Disaster Resilient Infrastructure (CDRI) where India is a permanent co-chair.
- In 2021, The India-USA Strategic Clean Energy Partnership (SCEP) was launched in accordance with the US – India Climate and Clean Energy Agenda 2030 Partnership announced by both countries at the Leaders' Summit on Climate

Technological
- The Indo-US Science and Technology Forum (IUSSTF) – is a bi-national autonomous organization established to promote cooperation in Science, Technology and Innovation has continued to play an important role in strengthening cooperation in this field.
- The iCET involves collaboration in a range of areas including quantum computing, semiconductors, 5G and 6G wireless infrastructure, and civilian space projects such as lunar exploration.
- It will be monitored and driven from the PMO in Delhi and the White House in Washington
- GE Aerospace has applied for an export licence for jet engine production and phased transfer of technology to Indian entities.
- ISRO and NASA are working together to realize a joint microwave remote sensing satellite for Earth observation, named NASA-ISRO Synthetic Aperture Radar (NISAR).

Defence and Security
- The Defense Policy Group (DPG) provides a platform for a comprehensive review of defense dialogues/mechanisms.
- The last DPG was held in 2021.
- The defense procurement activities are monitored through the Defense Production and Procurement Group (DPPG)
- In August 2022, a U.S. Navy Ship (USNS) Charles Drew visited in Chennai for repairs and allied services. This was the first ever repair of a U.S. Navy ship in India.
- US designating India as "Major Defence Partner," a status unique to India, India is now at par with its closest allies.
- There is a new panorama for elevated Indo-US cooperation, like signing of Defence Technologies and Trade Initiative (DTTI), BECA, COMCASA, LEMOA etc
- The signing of Communication Compatibility and Security Agreement (COMCASA) – paved the way for supply of equipment with transfer of technology.
- The decision to start exchanges between US Naval Forces Central Command (NAVCENT) and Indian navy was another milestone for strengthening maritime cooperation in the Western Indian Ocean.
- Bilateral exercises include: Yudh Abhyas (Army); Vajra Prahar (Special Forces), a tri-services exercise– Tiger Triumph (inaugurated in 2019).
- India joined the multilateral Combined Maritime Force (CMF) based in Bahrain, as an Associate Partner in 2022.
- S. participated in India's multilateral Exercise Milan 2022.

Indian Diaspora
- The 3.5-million-plus strong Indian American community is an important ethnic group in the U.S., accounting for about 1% of the total population in the country
- Almost 21% of total international students in the U.S. are Indians. In 2022 close to 82000 student visas were issued in India, mostly for graduate (Masters) programs
- The nearly 200,000 Indian students in the United States contribute $7.7 billion annually to the U.S.

economy.
- With two Indian Americans occupying high level posts of Governor and several representatives of the people, the Indian Diaspora has assimilated into their adopted country and is acting as a catalyst to forge closer and stronger ties between India and the U.S.
- An MOU has been signed in June 2016 to facilitate India's joining of the Global Entry Programme for expedited immigration for eligible Indian citizens at U.S. airport

Suggestion for future
- Enhance cooperation in emerging technologies and artificial intelligence (AI) as data regulation, information sharing, and privacy protection become increasingly salient issues crucial to the preservation of national security.
- Strengthen coordination multilaterally and on international issues, including prioritising two multilateral strategic dialogues that have gained prominence in recent years—i.e., the Quad and the West Asian Quad or I2U2.
- Pursue greater cooperation on counterterrorism, including coordinating strategies for managing a Taliban-led Afghanistan and leading multilateral efforts to apply pressure on the Pakistani military-intelligence complex to abandon support for terrorist groups such as the Taliban and Haqqani Network, and Kashmir-focused groups like Jaish-e-Mohammed and Lashkar-e-Taiba.
- Strengthen and integrate Global Value Chains(GVCs), using FDI in each other's economies to strengthen bilateral trade and integrate GVCs as well as incentivise multinational corporations to participate in these initiatives.
- Seek greater coordination between line ministries working on cybersecurity, especially identifying relevant counterparts on specific issues.
- Embed security and defence issues into their emerging technology agenda, focusing for instance on identifying common principles for defence applications of artificial intelligence.

Way forward
- In recent years, exigencies such as the COVID-19 pandemic have redirected the relationship to a forward-looking assessment of regional and global geopolitics
- The sectors that will be key to shaping the arc of a strong Indo-US relationship in the years ahead are the following: emerging technologies; national security and defence cooperation; counterterrorism; and trade.

2.4 India-South Korea Relations

India and South Korea recently acknowledged the 50th anniversary of India-South Korea diplomatic ties.

About India – South Korea bilateral relations:
Political
- During the Korean War (1950- 53), India played a major role in a cease-fire agreement signed between both the warring sides (North Korea and South Korea) and the ceasefire was declared in July 1953.
- Comprehensive Economic Partnership Agreement (CEPA) was operationalized from in January 2010.
- In May 2015, the bilateral relationship was upgraded to 'special strategic partnership'.
- India has a major role to play in South Korea's Southern Policy under which Korea is looking at expanding relations beyond its immediate region.
- Similarly, South Korea is a major player in India's Act East Policy under which India aims to promote economic cooperation, cultural ties and develop strategic relationships with countries in the Asia-Pacific.

Regional Stability:
- The regional tensions in South Asia especially between India and China create a common interest for India and South Korea.
- This could be a collaborative approach for regional stability.

Nuclear:
- South Korea's key interest in managing their nuclear neighbour (North Korea) is similar to India's considerations toward Pakistan.
- The US alliance system, established with South Korea and Japan, puts pressure on North Korea to cap its nuclear programme.
- Containing North Korea is beneficial to India's economic and regional ambit in East Asia.
- It also adds to its approach to the nuclear non-proliferation regime as a responsible nuclear state.

Economic:
- The current bilateral trade between India and South Korea is at USD 21 billion and the target that has been set is USD 50 billion by the year 2030.
- India and South Korea have signed the Comprehensive Economic Partnership Agreement (CEPA), 2010 which has facilitated the growth of trade relations.
- To facilitate investment from Korea, India has launched a "Korea Plus" facilitation cell under 'Invest India' to guide, assist and handhold investors.

Diplomatic:
- There is a long-lasting regional security dilemma with the continued verbal provocations and a conventional arms race.
- Thus, despite the alliance system, Seoul appears to be searching for a stronger diplomatic stand on imminent regional issues beyond the alliance system.
- South Korea's approach to India comes with strategic optimism for expanding ties to ensure a convergence of interest in planning global and regional strategic frameworks.

Cultural:
- Korean Buddhist Monk Hyecho or Hong Jiao visited India from 723 to 729 AD and wrote the travelogue "Pilgrimage to the five kingdoms of India" which gives a vivid account of Indian culture, politics and society.
- Nobel Laureate Rabindranath Tagore had composed a short but evocative poem – 'Lamp of the East' – in 1929 about Korea's glorious past and its promising bright future.

Indian diaspora:
- Many Indian scholars are pursuing post-graduate and Ph. D programmes, mostly in pure sciences live in South Korea.
- During the past few years, many professionals, mainly in the areas of IT, shipping and automobile have immigrated to ROK.
- Coordination Committee by the Indian high commission works to bring all the Indian Associations in ROK onto a common platform.
- The Committee is an effective platform for dissemination of information and coordinating cultural events/activities.

Multilateral Platforms Shared by Both the Countries:
- United Nations
- World Trade Organisation
- ASEAN Plus
- East Asia Summit (EAS)
- G-20

Challenges
- Inadequate Trade: In the last few years, India and South Korea have faced serious blockades to their economic ties.
- Trade between the two countries was sluggish and there was no major inflow of South Korean investment

into India.

- Indian Diaspora: Within South Korea, the integration of Indians in the local population is far from complete, with some instances of racial prejudice or discrimination toward Indians
- Inadequate acknowledgment of Korean Culture: To a certain extent Indians are unable to distinguish between the cultural and social characteristics of South Koreans from that of Japanese/Chinese.
- Unfulfilled potential of Cultural Centres: Indian Culture Centre (ICC) was established in Seoul to promote people-to-people contacts.
- However, ICC has to reach an exponentially wider audience and its focus has to expand beyond the urban, English-speaking elite of Seoul.
- The same may be applicable to South Korean culture centres in India.
- Multi-dimensional challenges: The current emerging alignment between India and South Korea, which has the potential to bring the two countries closer together, may prove short-lived if proper attention is not paid to the multi-dimensional challenges it faces.

Way Forward:
- India's significance for South Korea is growing primarily because of the latter's deepening strategic dilemma with China – its largest economic partner. South Korea's shifting perception about its economic engagement with China has influenced Seoul's strategy towards other Asian powers. Against this background, policymakers in Seoul see India as a crucial partner and their government is taking various steps to upgrade ties under their new policy framework called the 'New Southern Policy.'
- India-Republic of Korea (RoK) relations has made great strides in recent years and has become truly multidimensional. The bilateral relations are spurred by a significant convergence of interests, mutual goodwill and high-level exchanges.

2.5 India-Canada Bilateral Relations

The Indo-Pacific strategy announced by Canada uses blunt language against China and sees closer engagement with India as critical to its success.

About India – Canada relations:
Historical Background:
- India established diplomatic relations with Canada in 1947.
- Prime Minister of India's visit to Canada in April 2015 elevated the bilateral relation to a strategic partnership.
- In recent years, both countries have been working to enhance bilateral cooperation in a number of areas of mutual importance.

Nuclear Cooperation:
- Indo-Canadian relations deteriorated in the wake of India's Smiling Buddha nuclear test of May 1974 when the Canadian government severed bilateral nuclear cooperation with both India and Pakistan.
- However, in June 2010, a Nuclear Cooperation Agreement (NCA) with Canada was signed and came into force in September 2013.
- The Appropriate Arrangement (AA) for the NCA was signed in March 2013, under which a Joint Committee on Civil Nuclear Cooperation was constituted.

Commercial relations:
- An annualised Trade Ministers dialogue has been institutionalised to review trade and economic relations.
- Both sides are engaged in technical negotiations for a Comprehensive Economic Partnership Agreement (CEPA) including trade in goods, services, investment, trade facilitation etc.

Science and Technology:
- Indo-Canadian Science and Technology cooperation has been primarily focussed on promoting Industrial R and D which has potential for application through the development of new IP, processes, prototypes or products.
- Canada was a partner country for the Technology Summit 2017.

Security and Defence:
- India and Canada collaborate closely in international fora, particularly through the UN, Commonwealth and G-20.
- Defence ties have been expanding with mutual ship visits.
- There is robust cooperation on counter-terrorism issues, particularly through the framework of the JWG on Counter-Terrorism.

Space:
- India and Canada have been pursuing successful cooperative and commercial relations in the field of Space since the 1990s mainly on space science, earth observation, satellite launch services and ground support for space missions.
- ISRO and Canadian Space Agency (CSA) signed two MOUs in the field of exploration and utilisation of outer space in October 1996 and March 2003.
- ANTRIX, the Commercial arm of ISRO, has launched several nanosatellites from Canada.
- ISRO in its 100th Satellite PSLV launched in 2018, also flew the Canadian first LEO satellite, from the Indian spaceport Sriharikota, Andhra Pradesh.

Agricultural cooperation:
- The bilateral MoU on agriculture cooperation was signed at the federal level in 2009.
- The first meeting of the JWG set under this MoU was held in New Delhi in 2010, which led to the creation of three sub-groups on knowledge exchange in emerging technologies; animal development and agricultural marketing.
- A Joint Working Group for Pulses has been set up separately.

Indian diaspora:
- Canada hosts one of the largest Indian diasporas in the world, numbering 1.6 million (PIOs and NRIs) which account for more than 4% of its total population.
- The diaspora has done commendably well in every sector in Canada.
- In the field of politics, in particular, the present House of Commons (total strength of 338) has 22 Members of Parliament of Indian origin.

Cultural Exchanges:
- Canada was the Country of Focus at the 48th International Film Festival of India held in Goa in November 2017.
- There is also an India – Canada Coproduction Agreement in films.
- Diwali has been celebrated on Parliament Hill for the last 18

Challenges in India-Canada ties:
- Khalistan separatism issue:
- There is resurgence of Khalistan separatism and calls for a "referendum" amid the Sikh community in Canada.
- There are also incidents of vandalism and violence targeting the Indian community in Canada.
- Canadian pronouncements on developments in India:
- Canadian pronouncements on developments in India, including on rights and freedoms can always set off diplomatic landmines.

India's structural impediments:
- India still has to overcome structural impediments such as complex labour laws, market protectionism, and bureaucratic regulations.

Inadequate trade:
- While India–Canada economic relations have made some progress, Canada remains an insignificant trading partner for India.

Way Forward:
- Canada's Indo-Pacific strategy, which says India's strategic importance can only increase as its economy grows and it becomes the world's most populous country, offers a wider staging ground for the two to come together to work for the mutual benefits.
- There could also be a defence and security component with Canada's resolve to participate more in maritime security and exercises in the Indo-Pacific, and deeper counter-terrorism cooperation than exists now.

2.6 Urban20 (U20)

The 2nd day of City Sherpa meeting of the sixth Urban20 (U20) cycle, which is being held in Ahmedabad, close to 40 delegates visited the World Heritage walled city of Ahmedabad, where a heritage walk was organised for them early in the morning.

About Urban-20:
- Urban 20 (U20) is an initiative developed in 2017 under the leadership of the Mayor of Buenos Aires and Mayor of Paris, and convened by the C40 Cities Climate Leadership Group (C40) in collaboration with United Cities and Local Governments (UCLG).
- It was launched on December 12, 2017 at the One Planet Summit in Paris.
- U20 seeks to develop a joint position and collective messages to inform and enrich the discussions of national leaders at the G20 Summit through unique urban perspectives.
- Urban 20 aims to tackle global challenges by leveraging the potential of cities as hubs of diversity and innovation.
- The U20 brings together mayors from G20 cities under a common framework and coordinates a joint position to inform the discussions of national leaders.
- Contributions from the U20 are shared with the G20 Presidency and Heads of State enhancing the role of cities as global economic and political leaders.

Priority areas for Urban 20 event are as follows:
- Encouraging environmentally responsive behaviour
- Ensuring water security
- Accelerating Climate Finance
- Leveraging 'local' potential and identity
- Reinventing urban governance and planning frameworks
- Catalysing digital urban futures

2.7 Millet International Initiative for Research and Awareness (MIIRA)

The sidelines of G20 presidency, India is planning to propose the launch of a global initiative to encourage the consumption and production of millets.

About Millet International Initiative for Research and Awareness (MIIRA):
- It aims to connect the millet research organisations across the world while also supporting research on

millet crops.
- Secretariat: Delhi, India
- It is in line with the UN declaring 2023 as the International Year of Millets and the Centre's plan to make India a global hub for millets.
- 5 G20 meetings on agriculture:
- 3 of Agriculture Deputies,
- 1 of chief scientists, and
- 1 where the Agriculture Ministers of all G-20 countries will gather.
- It will be launched keeping in mind the nutritional value and the climate resilient nature of millets.
- It will set up a web platform to connect researchers and holding international research conferences.
- India will contribute the "seed money" while each G20 member will later have to contribute to its budget in the form of a membership fee.

2.8 BBNJ Treaty

A new round of negotiations on the much-awaited United Nations High Seas Treaty for conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ) began in New York recently.

About BBNJ Treaty:
- The "BBNJ Treaty", also known as the "Treaty of the High Seas".
- It is an international agreement on the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction.
- It encompasses the high seas, beyond the exclusive economic zones or national waters of countries.
- This new instrument is being developedwithin the framework of the UNCLOS.

About UNCLOS (United Nations Convention for the Law of the Sea):
- UNCLOS is an international agreement that establishes the legal framework for marine and maritime activities.
- The Convention which concluded in the year 1982 replaced the quad-treaty of 1958.
- It came into effect in the year 1994.

It divides marine areas into 5 zones :
- Internal-waters
- Territorial seas
- Contiguous Zone
- Exclusive Economic Zone (EEZ)
- Continental shelf or High seas
- India has been a party to the convention since 1995.
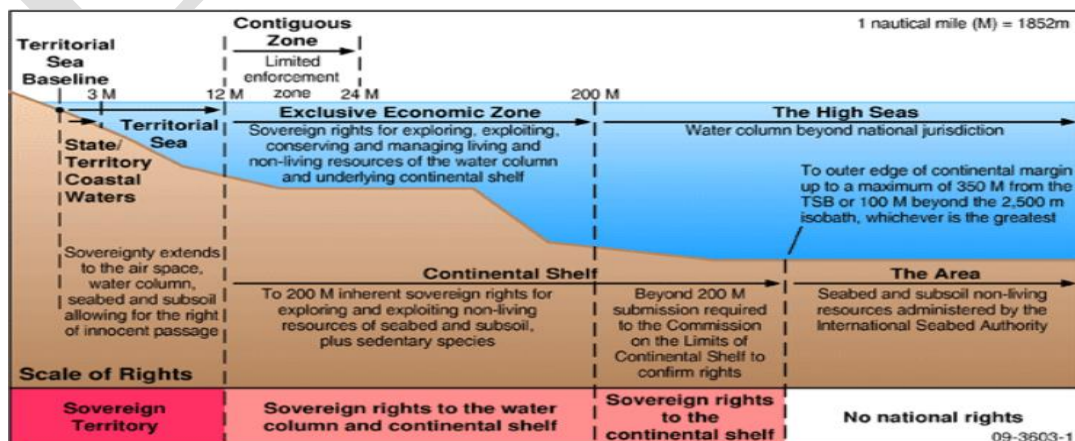
3. Economy

3.1 Agriculture Infrastructure Fund (AIF)

On the occasion of India's presidency of the G-20, through the theme 'One Earth, One Family, One Future', a one-day workshop on Agriculture Infrastructure Fund (AIF) and Madhya Pradesh Farm Gate App is being organized with the aim of encouraging the sense of global unity and increasing the participation of women in the field of agriculture.
Representatives of NABARD and APEDA will provide information about various schemes

Agriculture Infrastructure Fund (AIF)
- Agriculture Infra Fund (AIF) is a financing facility launched in 2020 for creation of post-harvest management infrastructure and community farm assets.
- Under this scheme, Rs 1 lakh crore is to be disbursed by financial year 2025-26 and the interest subvention and credit guarantee assistance will be given till the year 2032-33.
- It gives 3% interest subvention, credit guarantee support through CGTMSE for loan of up to Rs.2 crore and facility of convergence with other Central and State Govt. Scheme
- AIF is providing all around financial support to the farmers, Agri-entrepreneurs, farmer groups like Farmer Producer Organisations (FPOs), Self Help Groups (SHGs), Joint Liability Groups (JLGs) etc. and many others to create post-harvest management infrastructure and build community farming asset throughout the country.
- NABARD came into existence in 1982 by transferring the agricultural credit functions of RBI and refinance functions of the then Agricultural Refinance and Development Corporation (ARDC).
- Consequent to the revision in the composition of share capital between Government of India and RBI, NABARD today is fully owned by Government of India.
- It is an apex regulatory body for overall regulation of regional rural banks and apex cooperative banks in India.
- It is under the jurisdiction of Ministry of Finance, Government of India.
- The bank has been entrusted with "matters concerning policy, planning, and operations in the field of credit for agriculture and other economic activities in rural areas in India".
- NABARD is active in developing and implementing financial inclusion.

The Agricultural and Processed Food Products Export Development Authority (APEDA)
- It is a statutory body, established by the Government of India under the Agricultural and Processed Food Products Export Development Authority Act passed by the Parliament in 1985.
- The Authority replaced the Processed Food Export Promotion Council (PFEPC).

Functions
- Development of industries relating to the scheduled products for export by way of providing financial assistance or otherwise for undertaking surveys and feasibility studies, participation in enquiry capital through joint ventures and other reliefs and subsidy schemes;
- Registration of persons as exporters of the scheduled products on payment of such fees as may be prescribed;
- Fixing of standards and specifications for the scheduled products for the purpose of exports;
- Carrying out inspection of meat and meat products in slaughter houses, processing plants, storage premises, conveyances, or other places where such products are kept or handled for the purpose of ensuring the quality of such products;
- Improving of packaging of the Scheduled products;
- Improving of marketing of the Scheduled products outside India;
- Training in various aspects of the industries connected with the scheduled products;

3.2 Gujarat International Finance Tec-City – International Financial Services Centre (GIFT IFSC)

- The Union Budget has proposed several measures to enhance business activities at Gujarat International Finance Tec-City – International Financial Services Centre (GIFT IFSC).
- A subsidiary of EXIM Bank for trade re-financing would be established at GIFT IFSC and IFSCA Act would be amended for statutory provisions for arbitration, ancillary services, and avoiding dual regulation under SEZ Act.

About International Financial Services Centre Authority:
- IFSCA is a statutory body established in 2020 under the International Financial Services Centres Authority Act, 2019 to ensure inter-regulatory coordination within the financial sector.
- Headquarters: At GIFT City, Gandhinagar in Gujarat.
- Prior to the establishment of IFSCA, the domestic financial regulators, namely, RBI, SEBI, PFRDA and IRDAI regulated the business in IFSC.
- The IFSCA is a unified authority for the development and regulation of financial products, financial services and financial institutions in the International Financial Services Centre (IFSC) in India.
- The main objective of the IFSCA is to develop a strong global connect and focus on the needs of the Indian economy as well as to serve as an international financial platform for the entire region and the global economy as a whole.

3.3 Additional surveillance mechanism (ASM)

The National Stock Exchange (NSE) placed Adani Enterprises, Adani Ports, and Ambuja Cements under the additional surveillance mechanism (ASM) in the wake of accusations of stock manipulation and fraud levelled against the group by New York-based short seller Hindenburg Research.

Additional surveillance mechanism (ASM):
- The ASM was introduced in 2018 with the intention to protect investors from market volatility and unusual changes in share price.
- It is placed on securities with surveillance concerns based on objective parameters viz. Price / Volume variation, Volatility etc. in addition to other surveillance measures.
- The shortlisting of securities for placing in ASM is based on criteria that are jointly decided by the Securities and Exchange Board of India (SEBI) and exchanges, covering the parameters of "high low variation, client concentration, PE, close to close price variation, market capitalisation, volume variation, delivery percentage, and number of unique PANs".
- An ASM shortlisting signals to investors that the stocks have seen unusual activity.
- The shortlisting of securities under ASM is purely on account of market surveillance and it should not be construed as an adverse action against the concerned company / entity.

National Stock Exchange (NSE)
- NSE was incorporated in 1992.
- It was recognised as a stock exchange by SEBI in 1993 and commenced operations in 1994
- NSE was the first exchange in India to implement electronic or screen-based trading
- NSE is counted as one of the world's largest exchanges and a catalyst for driving India's economic growth.
- The products on the Exchange are organized into 3 asset classes for trading: Capital market for the listing and trading of equities, fixed income securities and the derivatives market.

3.4 Reverse-flipping

Economic Survey 2022-23 has suggested measures like simplifying ESOP taxation, and easier corporate laws like in the US and Singapore to accelerate reverse-flipping among startups, namely moving domicile back to India.

About Flipping and Reverse-flipping:
- Flipping is the process of transferring entire ownership of an Indian company to an overseas entity.
- It is generally accompanied by a transfer of all intellectual property and data owned by an Indian company.
- Reverse Flipping is the process of shifting the domicile of those companies back to India who flipped earlier.
- Companies reverse flip because of easy access to capital from private equity and venture capital, changes in rules regarding round-tripping, and the growing maturity of India's capital market.

Reasons for Flipping:
- Flipping happens at the early stage of the startups, driven by commercial, taxation and personal preferences of founders and investors.
- Some companies decide to 'flip' because the major market of their product is offshore.
- Sometimes, investor preferences like access to incubators drive the companies to 'flip' as they insist on a particular domicile.
- For easy access to capital from private equity and venture capital, changes in rules regarding round-tripping, and the growing maturity of India's capital market.

3.5 Angel Tax

Recently, the Finance Bill, 2023, has proposed to amend Section 56(2) VII B of the Income Tax Act, related to Angel tax.

About Angel Tax:
- A term used to refer to the income tax payable on the capital raised by unlisted companies.
- It is levied on the capital raised via the issue of shares from an Indian investor.
- This tax predominantly affects start-ups and the angel investments they attract.
- It derives its genesis from section 56(2) (viib) of the Income Tax Act, 1961.

Section 56(2) (viib) in the IT act:
- Introduced by the finance act, 2012
- It taxes any investment, received by any unlisted Indian company, valued above the fair market value by treating it as income.
- The investment in excess of fair value is characterized as 'Income from other sources.
- If the fair market value of a start-up share is Rs 50 apiece, and in a subsequent funding round they offer it to an investor for Rs 60, then the difference of Rs 10 would be taxed as income.

Proposed changes
For Angel Tax exemptions:
- The government has exempted investments made by the domestic investors in companies approved by an inter-ministerial panel from Angel Tax.

Criteria for exemption:
- The paid-up capital and share premium of the startup should not exceed Rs. 10 crores after issuing shares.
- The startup should procure the fair market value certified by a merchant banker.
- The investor should have a minimum net worth of Rs. 2 crores and the average income in the last 3 financial years should not be less than Rs. 50 lakhs.

For foreign Investors:
- New changes include foreign investors, meaning that when a start-up raises funding from a foeign investor, that too will now be counted as income and be taxable.

- Foreign investors are a key source of funding for the start-ups and have played a big role in increasing the valuation.

Significance of provision:
- The provision aims to deter the generation and use of unaccounted money through the subscription of shares of a closely held company at a value that is higher than the fair market value of the firm's shares.

3.6 Primary Agricultural Credit Societies (PACS)

The Union Budget has announced for computerization of Primary Agricultural Credit Societies (PACS) over the next five years.

About PACS:
- PACS are village level cooperative credit societies that serve as the last link in a three-tier cooperative credit structure headed by the State Cooperative Banks (SCB) at the state level.

Financial Structure:
- The primary credit societies' working capital is derived from their own funds, deposits, borrowings, and other sources.
- Deposits are made by both members and non-members.
- Borrowings are primarily made from central cooperative banks.
- Credit from the Scheduled Commercial Banks is transferred to the district central cooperative banks, or DCCBs, that operate at the district level.
- The DCCBs work with PACS, which deal directly with farmers.
- PACS are involved in short term lending — or what is known as crop loan.
- At the start of the cropping cycle, farmers avail credit to finance their requirement of seeds, fertilizers etc.
- Banks extend this credit at 7 percent interest, of which 3 per cent is subsidized by the Centre, and 2 per cent by the state government.
- Effectively, farmers avail the crop loans at 2 percent interest only.

Organizational Structure:
- Since these are cooperative bodies, individual farmers are members of the PACS, and office-bearers are elected from within them.
- The membership fee is low enough that even the poorest agriculturist can join.
- A village can have multiple PACS.

3.7 Market Access Initiative (MAI)

- Apparel Export Promotion Council (AEPC) inaugurated the first edition of up next India 2023 in presence of international buyers and exhibitors.
- This initiative is in the form of a series of Reverse Buyer Seller meet under the name of "UPNEXT INDIA".
- Reverse Buyer Seller Meet is to provide an opportunity for prospective importers (Buyers) to interact with their Indian counterparts (sellers) about the requirements, instead of sellers going to buyers to sell their products.
- Up next India is organised by AEPC and supported by the Ministry of Commerce and Industry under the Market Access Initiative (MAI) Scheme.

Market Access Initiative (MAI):
- It is an Export Promotion Scheme. The scheme aims to act as a catalyst to promote India's exports on a sustained basis.
- The scheme is formulated on the basis of the product and country focus approach. It will evolve specific

markets and specific products through market studies/surveys.

Apparel Export Promotion Council (AEPC):
- Incorporated in 1978, AEPC is the official body of apparel exporters in India
- It provides invaluable assistance to Indian exporters as well as importers/international buyers who choose India as their preferred sourcing destination for garments.

3.8 Sugarcane

According to the Indian Sugar Mills' Association (ISMA), sugar production in the current season (October 2022 to September 2023) is slightly lower than the last year's production.

About Sugarcane crop:
- India is the second largest producer of sugarcane after Brazil.
- It is the main source of sugar, Gur (jaggery), khandsari and molasses.
- It is a tropical and perennial grass which attains a length of 10 to 20 feet.
- A single plant of sugarcane has 'many stems' in a tuft.
- Modern Sugar making was introduced in India probably by Dutch.
- The first Sugar Mill was started in Bihar in 1903; followed by another unit in 1904 in Uttar Pradesh.

Suitable Conditions:
- Temperature: Between 21-27°C with hot and humid climate.
- Rainfall: Around 75-100 cm.
- Soil Type: Deep rich loamy soil.
- Top Sugarcane Producing States: Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu, Bihar.
- It can be grown on all varieties of soils ranging from sandy loam to clay loam given these soils should be well drained.
- It needs manual labour from sowing to harvesting.

About Indian Sugar Mills Association (ISMA):
- Indian Sugar Mills Association (ISMA) is a premier sugar organization in India.
- It is the interface between Government and sugar industry (both private and public sugar mills) in the country.
- The prime objective is to ensure that the functioning and interest of both the private and public sugar mills in the country are safeguarded through conducive and growth-oriented policies of the Government.
- ISMA is the oldest industrial Association in the country which was established in 1932.
- ISMA is recognized by both the Central Government and State Governments as the apex sugar body in the country, to voice the concerns of the private sugar mills and the sugar industry as a whole.

3.9 Accelerating the Green Revolution

India is on the fast track to promoting eco-friendly modes of transportation with a growing emphasis on hybrid and electric vehicles.

About Green Resolution:
- The production of food within India was insufficient in the years from 1947 to 1960 as there was a growing population, during which famine was also anticipated.
- Many farmers were in debt, and they had become landless laborers.
- There was a severe shortage of food crops as well as commercial crops.

The Green Revolution:
- In India, the green revolution was launched under the guidance of geneticist Dr. M. S. Swaminathan.
- The Green Revolution was a period that began in the 1960s during which agriculture in India was converted into a modern industrial system by the adoption of technology, such as the use of high-yielding variety (HYV) seeds, mechanised farm tools, irrigation facilities, pesticides and fertilizers.

Primary aim:
- The green revolution's primary aim was to introduce high-yielding varieties (HYVs) of cereals to alleviate poverty and malnutrition.

Benefits of Green Revolution
- There are undoubtedly positive effects on the overall food security in India.
- The Green Revolution within India led to an increase in agricultural production, especially in Haryana, Punjab, and Uttar Pradesh.
- Increased food production: The Green Revolution led to a considerable increase in food production, which helped in improving food security in India.
- Boosted economy: The movement helped to boost the Indian economy, with increased agricultural production contributing to economic growth.
- Reduced poverty: The Green Revolution in India contributed to a reduction in poverty, particularly in rural areas. Hence, it helped improve the standard of living for farmers.
- Increased employment opportunities: The revolution created new employment opportunities in agriculture and related industries, which helped tackle unemployment.
- Self-sufficiency: The Green Revolution helped India to become more self-sufficient in food production, reducing the country's dependence on other countries for food.
- The green revolution led to the high productivity of crops through adapted measures, such as:
- Increased area under farming,
- Double-cropping, which includes planting two crops rather than one, annually,
- Adoption of HYV of seeds,
- Highly increased use of inorganic fertilizers and pesticides,
- Improved irrigation facilities, and
- Improved farm implements and crop protection measures.

Criticisms of Green Revolution:
Water-intensive crops:
- The crops introduced during the green revolution were water-intensive crops.
- About 3,500 litres of water is needed to produce one kg of rice, compared to 1,350 litres for wheat and 900 litres for maize.
- To take Punjab's example, the state extracts 28 billion cubic metres (bcm) of groundwater annually, while its annual recharge is 19 bcm, which is unsustainable.
- Tube wells have to dive deeper and deeper to find water.

Imbalanced and unsuitable production:
- Punjab, Haryana and west Uttar Pradesh were chosen or led to produce wheat and rice for the nation.
- These states were relatively suitable for wheat, but not rice.
- The best states for rice were West Bengal, Odisha, Bihar and Assam.
- The three northern states were incentivized for growing rice along with wheat because they had good irrigation, unlike the eastern states which were largely rainfed.

Soil pollution:
- Chemicals have swallowed the soil's innate nutrients.
- There has been a significant increase in the usage of pesticides, and India became one of the largest producers of pesticides in the whole of Asia.

Air pollution:
- Air pollution introduced due to the burning of agricultural waste is a big issue these days.
- In the heartland of the green revolution, Punjab, farmers are burning their land for sowing the crops for the next cycle instead of the traditionally practiced natural cycle.

Extinction of Indigenous Varieties of Crops:
- Since the time of the green revolution, there was reduced cultivation of indigenous varieties of rice, millets, lentils, etc.
- In turn, there was increased harvest of hybrid crops, which would grow faster.
- Due to the green revolution, India lost almost 1 lakh varieties of indigenous rice.

Health Impacts:
- Indiscriminate pesticide usage has led to several health effects in human beings in the nervous, endocrine, reproductive, and immune systems.

Way Forward:
Crop Diversification:
- Agriculture in green revolution states cannot be saved unless a substantial part of rice cultivation is moved from there to eastern states.
- States want to diversify to other crops, but they do not want their income to fall in the process.
- It can be done only when the State builds robust ecosystems for alternative crops as it had done for rice and wheat.

Climate-resistant crops:
- Addressing the challenges like water and air pollution would require agricultural production focussed on the water-energy nexus, making agriculture more climate resistant and environmentally sustainable.

Technological interventions:
- Wider use of digital technology and extension services will be helpful in information sharing and generating awareness among the farmers.

Need of Green Revolution 2.0:
- India needs a second green revolution along with the next generation of reforms with a view to make agriculture more climate-resistant and environmentally sustainable.

Supply-side interventions:
- The need is supply-side interventions such as higher public investment, storage infrastructure and promotion of food processing.

3.10 Windsor Framework

Recently, the UK government reached a landmark deal with the European Union (EU) on post-Brexit trade rules that will govern Northern Ireland.

About Windsor Framework:

THE UNITED KINGDOM

- The 'Windsor Framework' will replace the Northern Ireland Protocol, which had proved to be among the thorniest of Brexit fall-outs, creating problems both economic and political.

The Northern Ireland Protocol:
- The Northern Ireland Protocol is a trading agreement that was negotiated in 2020 between the U.K. and the E.U.
- Under the protocol, both the U.K. and E.U. agreed that the inspection of goods would be conducted between Great Britain and Northern Ireland.
- Northern Ireland remained in the EU single market, and trade-and-customs inspections of goods coming from Great Britain took place at its ports along the Irish Sea.

Issues related to the Northern Ireland Protocol :
- The protocol has led to political division in Northern Ireland.
- The checks made trade between Great Britain and Northern Ireland cumbersome, with food products, especially, losing out on shelf life while they waited for clearance. Some taxation and spending policies of the UK government could not be implemented in Northern Ireland because of EU rules.
- The sale of medicines, too, was caught between different British and EU rules.

Salient features of the Windsor Framework:
The framework has two crucial aspects:
- Introduction of a green lane and red lane system – For goods that will stay in Northern Ireland and those that will go to the EU respectively.
- The Stormont Brake – it allows Northern Ireland lawmakers and London to veto any EU regulation they believe affects the region adversely.
- The two-lane system– British goods meant for Northern Ireland will use the green lane at the ports and will be allowed to pass with minimal paperwork and checks.
- Physical checks will be conducted if the goods are deemed suspicious, in place of the routine checks now.
- Goods destined for Ireland or the rest of the EU will have to take the red lane, with the attendant customs and other checks.

3.11 India's sticky Inflation

- Last week, CSO released the inflation data, it showed that in January, India's retail inflation surged by 6.5%.

- In other words, the general price level facing the consumers in January 2023 turned out to be 6.5% higher than the price level in January 2022; this is called a year-on-year (or y-o-y) growth rate.

About Inflation:
- Inflation refers to a sustained increase in the general price level of goods and services in an economy over a period of time.
- It is the rise in the prices of most goods and services of daily or common use, such as food, clothing, housing, recreation, transport, consumer staples, etc.
- Inflation measures the average price change in a basket of commodities and services over time.
- The opposite and rare fall in the price index of this basket of items is called 'deflation'.
- Inflation is indicative of the decrease in the purchasing power of a unit of a country's currency.
- This is measured in percentage.

Measures of Inflation in India:
- In India, the Ministry of Statistics and Programme Implementation measures inflation.
- There are two main set of inflation indices for measuring price level changes in India
- the Wholesale Price Index (WPI) and the Consumer Price Index (CPI).
- GDP deflator is also used to measure inflation.

Significance of Inflation spike in recent times:
- The headline retail inflation rate was 7.4% in September 2022 but since then it was fast losing steam every month and fell to 5.7% in December.
- This moderation had convinced many to demand that the RBI should avoid raising interest rates — something the RBI did not do when it met on February 8.
- In fact, the RBI raised the repo rate the interest rate at which it lends money to the banking system by 25 basis points (100 basis points make up a full percentage point).
- RBI raises the repo rate when it believes that inflation is not in control.
- Higher interest rates drag down overall demand for goods and services by making loans costlier.
- Lower demand is expected to cool down inflation.
- The recent surge was also an unexpected event — most economists and observers expected inflation to rise by just 6% and it has renewed the apprehensions of the RBI raising the interest when it meets again in April.
- RBI's Monetary Policy Committee (MPC) meets every two months to reconsider its monetary policy stance.
- As increase in interest rate, while doing its bit towards containing inflation, impacts on India's economic growth.
- To be sure, there is a constant trade-off between maintaining price stability (read containing inflation) and boosting growth (which hopefully creates jobs and reduces unemployment)
- Therefore, if inflation stays persistently high ('sticky'), it would necessitate the RBI to keep raising interest rates or, at the very least, keep them at a high level for a longer period and, in doing so, hurt India's economic recovery out of the twin shocks of the Covid pandemic and the Russia-Ukraine war.

Reasons for recent Inflation trends:
- Inflation being sticky essentially means that inflation is taking longer than expected to fall.
- Essentially, higher food and fuel prices have seeped into the broader economy and made other things costlier.
- "A deeper dive into the core inflation basket suggests that firms continued to pass on higher input costs to consumers, while inflation is moderating in the services sector.
- Core goods inflation continued to inch up to 6% y-o-y in January from 7.5% in December and 7.1% six months back.
- Core services inflation, by contrast, has progressively been moderating from 5.5% in September to 5.0% in January

- Rise in food and fuel prices got increasingly generalised over ensuing months. This was reflected in highly elevated and sticky core inflation.
- Unprecedented input cost pressures got translated to output prices, particularly goods prices, in spite of muted demand conditions and pricing power.
- As the direct effects of the conflict waned and international commodity prices softened, the strengthening domestic recovery and rising demand enabled pass-through of pent-up input costs, especially in services, adding persistence to elevated inflationary pressures.
- However, for what it is worth, India is not the only country facing sticky inflation; many others such as the US and countries in the euro zone — are also struggling to extricate themselves from sticky inflation.

Way Forward:
- Both the government and Reserve Bank of India try to tackle inflation with their policies which are known as Fiscal and Monetary Policies respectively. Fiscal policies correspond to tax related measures taken by government to control inflation (money supply). RBI through its various monetary policies limit the money supply by altering rates like CRR, Repo, Reverse Repo etc. Administrative measures taken by government like strengthening of Public Distribution System also plays a crucial role in curbing inflation.

3.12 Agricultural and Process Food Export Development Authority (APEDA) and Gulfood 2023

Recently, the Agricultural and Process Food Export Development Authority (APEDA) participated in the 28th edition of Gulfood 2023 held in UAE.

About the Agricultural and Process Food Export Development Authority (APEDA):
- It is a statutory body established by the Government of India under the Agricultural and Processed Food Products Export Development Authority Act passed by the Parliament in 1985.
- The Authority replaced the Processed Food Export Promotion Council (PFEPC).
- Head Office: New Delhi
- It functions under the Ministry of Commerce and Industry.
- APEDA also functions as the Secretariat to the National Accreditation Board (NAB) for the implementation of accreditation of the Certification Bodies under the National Programme for Organic Production (NPOP) for organic exports.
- Chairman – appointed by the Central Government.

Functions :
- Development of industries relating to the scheduled products for export by way of providing financial assistance.
- Registration of persons as exporters of the scheduled products on payment of such fees as may be prescribed.
- Fixing standards and specifications for the scheduled products for the purpose of exports;
- Carrying out inspection of meat and meat products in slaughterhouses, processing plants, storage premises, conveyances, or other places
- Improving packaging of the Scheduled products;
- Improving marketing of the Scheduled products outside India.
- Promotion of export-oriented production and development of the Scheduled products.

APEDA is mandated with the responsibility of export promotion and development of the following scheduled products:
- Fruits, Vegetables and their Products.
- Meat and Meat Products.
- Poultry and Poultry Products.
- Dairy Products.

- Confectionery, Biscuits, and Bakery Products.
- Honey, Jaggery, and Sugar Products.
- Cocoa and its products, chocolates of all kinds.
- Alcoholic and Non-Alcoholic Beverages.
- Cereal and Cereal Products.
- Groundnuts, Peanuts, and Walnuts.
- Pickles, Papads, and Chutneys.
- Guar Gum.
- Floriculture and Floriculture Products.
- Herbal and Medicinal Plants.
- De–oiled rice bran.
- Green pepper in brine.
- Cashew Nuts and Its Products.
- Basmati Rice has been included in the Second Schedule of the APEDA Act.

APEDA has been entrusted with the responsibility of monitoring the import of sugar as well.
About Gulfood 2023:
- The 28th edition of Gulfood 2023 which was held in the UAE.
- GULFOOD which is a platform that connects food and beverage sectors around the globe.
- The Indian pavilion at Gulfood 2023 is one of the largest pavilions at the show to cater food product exports to more than 125 countries participating in the event.
- More than 50 Indian exporters from different categories like women entrepreneurs, Start-ups, merchants, and manufacturers showcasing agricultural, dairy, pulses, and meat-based produce with a focus on Millet and its products through the APEDA pavilion, are being showcased.
- Over the years APEDA has participated in Gulfood and brought a strong contingent of suppliers from the Indian diaspora.

3.13 Deep-Sea Mining
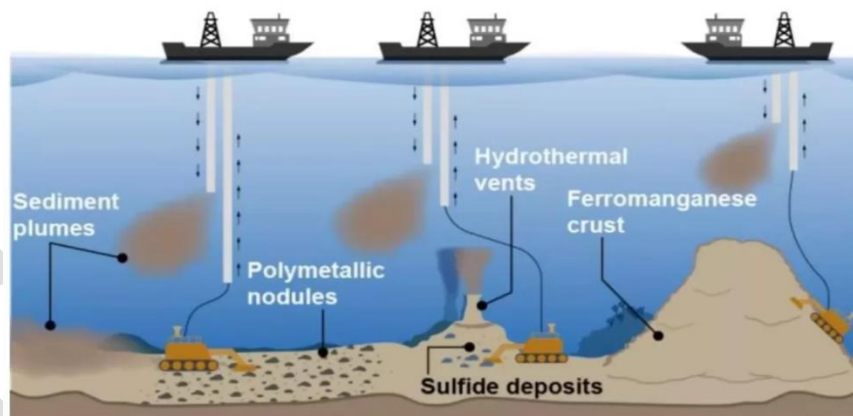
Source: GAO analysis of peer reviewed journal articles. | GAO-22-105507

Recently, a study published in the journal Frontiers in Marine Science has warned that commercial deep-sea mining could pose a serious risk to ocean ecosystems.

About Deep-Sea Mining:
- It refers to the extraction of minerals and other resources from the seabed, which can be found in large quantities in the deep ocean.
- These minerals include metals such as copper, nickel, cobalt, and rare earth elements, as well as valuable resources such as oil and gas.
- Despite the risks to ocean ecosystems, the Pacific Island nation of Nauru plans to start deep-sea mining,

invoking a two-year rule inserted as a part of the UN Convention on Law of the Seas (UNCLOS).
- The "two-year rule" clause of the UNCLOS requires the ISA to put in place the governance infrastructure – the rules, regulations, and procedures governing the contours of deep-sea mining within two years of approval.
- India has been allotted a site of 75,000 square kilometers in the Central Indian Ocean Basin (CIOB) by the UN International Sea Bed Authority for exploitation of polymetallic nodules.
- A fraction of that reserve can meet the energy requirement of India for the next 100 years,
- India's Exclusive Economic Zone spreads over 2.2 million square kilometres.
- A manned submersible will be developed to carry three people to a depth of 6,000 meters in the ocean with a suite of scientific sensors and tools.

Major types of deep-sea mining:
- Manganese nodule mining: This involves collecting nodules of manganese, iron, and other metals that are scattered on the ocean floor.
- Seafloor massive sulphide (SMS) mining: This involves extracting mineral deposits formed near hydrothermal vents, which can contain high concentrations of copper, zinc, and other metals.
- Cobalt crust mining: This involves collecting crusts of cobalt, nickel, and other metals that form on the surface of seamounts.

Significance of Deep-Sea mining:
- Growing demand for minerals: It has the potential to provide a reliable and abundant supply of minerals the demand for which is rapidly increasing, driven by the growth of industries such as renewable energy, electric vehicles, and consumer electronics.
- Depletion of land-based resources: Deep-sea mining presents an opportunity to access new sources of valuable resources such as cobalt and rare earth metals which are essential to modern technology and industry but are becoming increasingly scarce on land.
- Strategic importance: Developing a domestic supply of these resources is seen as strategically important for India as many of the minerals and metals that are found in deep sea mining, such as cobalt and rare earth metals, are essential to national security and defence.
- Economic benefits: It has the potential to create jobs, stimulate economic growth, and generate revenue for governments and companies.

Major Issues associated with the deep-sea mining:
- Environmental impacts: Mining operations can disturb and damage fragile deep-sea ecosystems, including coral reefs, hydrothermal vents, and other important habitats.
- Thermal pollution: The mining vehicles also generate sediment plumes that could smother the benthic species at the bottom of the ocean.
- Noise pollution: The process generates noise pollution that can overlap with the frequencies at which cetaceans communicate, causing auditory masking and behavioral changes in marine mammals.
- Regulatory gaps: There is currently a lack of international regulations governing deep-sea mining, which could lead to environmental harm and other negative impacts.
- Social and economic impacts: The potential benefits of deep-sea mining may not be evenly distributed, and could lead to social and economic disparities between different communities.
- Technological challenges: Deep-sea mining requires advanced technologies and equipment that are currently under development, and may not be cost-effective or efficient enough to make the practice commercially viable.

Govt of Initiatives to promote deep sea mining:
- National Centre for Polar and Ocean Research (NCPOR): It was established in 2020 by the Ministry of Earth Sciences in Goa, which is tasked with exploring the country's deep-sea mineral wealth.
- Draft Deep Seabed Mining Regulations, 2021: It has been formulated by the Indian government to provide a legal framework for the exploration and exploitation of mineral resources in the country's exclusive

economic zone (EEZ).
- International collaborations: The government is also considering setting up a nodal agency to regulate deep sea mining activities in the country, in line with the International Seabed Authority (ISA) and the United Nations Convention on the Law of the Sea (UNCLOS).

Way Forward:
- Studies for understanding deep sea: To understand what species live in the deep sea, how they live, and how they could be affected by mining activities baseline studies are needed with more funds for training and educational programmes focused on improving our understanding of the deep sea.
- Environmental impact assessments: These assessments are also needed to ensure that the loss of biodiversity as a result of mining operations is properly accounted for in mining regulations set by authorities, well before any decision to mine is approved.
- The costs to the marine environment should be included in the financial and economic assessments conducted by mining companies.
- Enhanced regulation: The ISA is operating with the dual mandate of promoting the development of deep-sea minerals whilst ensuring that this development is not harmful to the environment.
- This challenging and conflicting mandate will require improved oversight by the international community – including government representatives and the general public – to ensure that marine life is adequately protected.
- To avoid possible conflicts of interest due to the dual mandate of ISA, the organization should consider divesting itself of some of its responsibilities, and placing them on independent entities.
- Mitigation: Current technologies may not be sufficient to avoid serious and lasting harm to the environment, including the loss of biodiversity.
- Mining operations strategies should be based on the avoidance of environmental impacts.
- This requires stringent and precautionary controls on the permissible extent and duration of mining operations to keep large parts of the seabed undisturbed.
- Minimising impacts should involve, among other things, improving mining equipment to reduce seafloor disturbance.
- Circular economy: The repair, recycling and reuse of products should be encouraged to help reduce the demand for raw materials from the deep sea.
- Enhancing product design to make use of less or alternative materials can also reduce the demand.

3.14 Open Market Sale Scheme (OMSS)

The third e-auction to offload wheat under Open Market Sale Scheme (Domestic) took place recently.

About OMSS:
- The government sells the excess stock of food grains in the open market through e-auctions through this scheme.
- The Food Corporation of India (FCI) on instructions from the Government, sells wheat and rice in the open market from time to time.
- The purpose of OMSS is to dispose of surplus stocks of wheat and rice held by FCI(Food Corporation of India)and to regulate the prices of wheat in the open market.
- FCI conducts weekly auctions for the OMSS for wheat on the platform of the National Commodity and Derivatives Exchange Limited (NCDEX).
- NCDEX – a commodity exchange platform in India that provides a platform for trading in various agricultural and other commodities.

3.15 Shipping Industry in India

Recently, Union Minister for Ports, Shipping and Waterways stressed upon reducing pollution intensity and evolve

strategies to introduce renewable energy and green hydrogen in the shipping sector.

About Shipping Industry in India:

- According to the Ministry of Shipping, around 95% of India's trading by volume and 70% by value is done through maritime transport.
- India has 12 major and 205 notified minor and intermediate ports.
- Mumbai Port is India's largest port by size.
- Tamil Nadu has the highest number of major ports in India.
- Krishnapatnam Port, is the deepest port in India .
- India is the sixteenth-largest maritime country in the world with a coastline of about 7,517 kms.
- The Indian Government plays an important role in supporting the ports sector.
- It has allowed Foreign Direct Investment (FDI) of up to 100% under the automatic route for port and harbour construction and maintenance project
- India's merchandise exports in FY22 were at US$ 417.8 billion, up 40% from the previous year.
- Indian ports received cumulative FDI inflow worth US$ 1.63 billion between April 2000-June 2021.
- Jawaharlal Nehru Port Trust (JNPT) Special Economic Zone (SEZ) became the first of its kind operational port-based multi-product SEZ in India.
- APSEZ (Adani Ports and Special Economic Zone) plans to become the world's largest private port company by 2030 and carbon neutral by 2025.
- India was ranked 44th in the Logistics Performance Index, a measure through which the World Bank ranks countries based on their logistics performance.
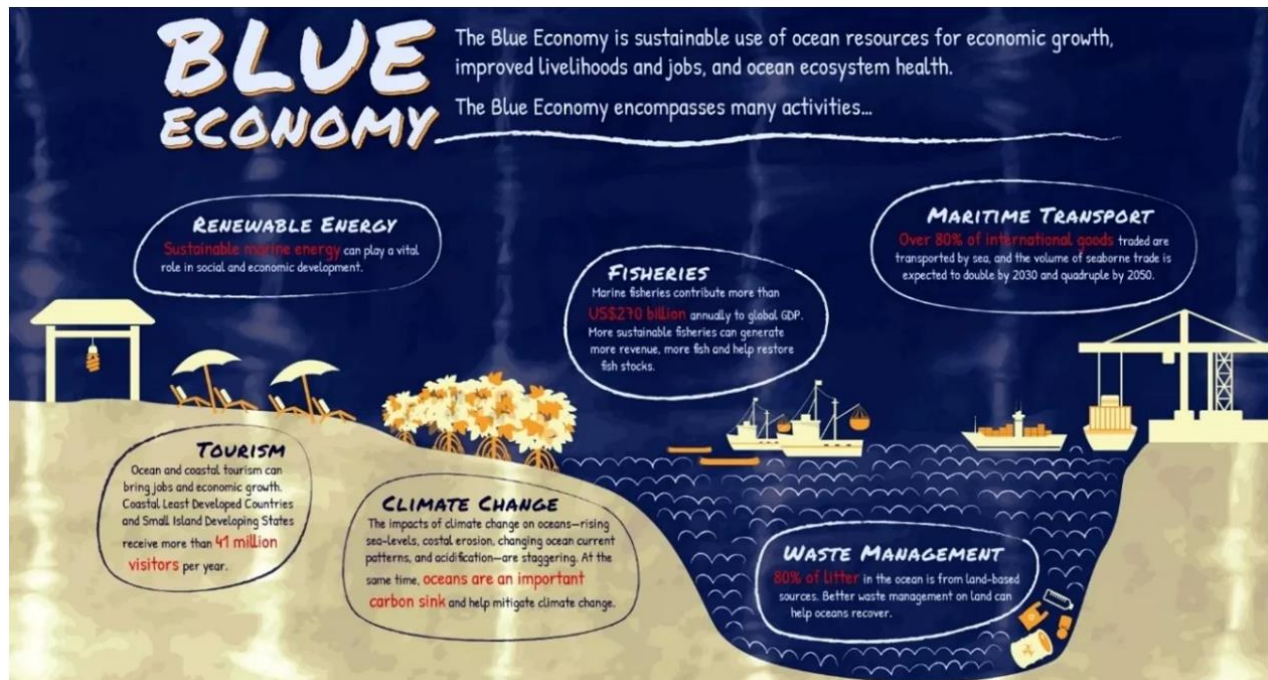
Logistics Performance Index (LPI):
- It is released by World Bank
- India ranked 44th on the LPI in 2018
- Government Initiative to boost Shipping Industry:

The Sagarmala Programme –
- It is the flagship program of the Ministry of Shipping to promote port-led developmentin the country.
- It aims to modernize India's Ports

3.16 India's Potential of Blue Economy

Recently, G20 Environmental and Climate Sustainability Working Group discussed issues of land degradation, blue economy and the circular economy.

About Blue Economy:
- According to the World Bank, It is defined as the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of the ecosystem."
- The blue economy offers coastal nations like India a huge socioeconomic opportunity to responsibly use ocean resources for societal benefit.
- The rise in demand of ocean-linked products such as seafood, energy generation, etc. has led to the growth of the blue economy globally, with estimated global turnover ranging between US$ 3-6 trillion annually.
- The concept began seeping into the consciousness of academics and policymakers after the United Nations Conference on Sustainable Development in 2012.

Significance of India's Blue Economy:
- Below image shows Indian Marine Exports (in US$ Billions).
- India's blue economy: It is a subset of the national economy comprising the entire ocean resources system and human-made economic infrastructure in marine, maritime, and onshore coastal zones within the country's legal jurisdiction.
- India is strategically located between two important plug points called Strait of Hormuz and Strait of Malacca, through which most of trade in commercial shipping moves in the Indian Ocean.
- Coastal states and islands: With some 7,500 kilometres, India has a unique maritime position.
- Nine of its 29 states are coastal, and it's geography includes 1,382 islands.
- Ports and Exclusive Economic Zone: There are nearly 199 ports, including 12 major ports that handle approximately 1,400 million tons of cargo each year.
- Besides, India's Exclusive Economic Zone of over 2 million square kilometres has a bounty of living and non-living resources with significant recoverable resources such as crude oil and natural gas.
- Coastal settlements: The coastal economy sustains over 4 million fisherfolk and coastal communities.

Govt of India Initiatives to promote sustainable blue economy:
- Sagarmala Project: Vision of the Sagarmala Programme is to reduce logistics cost for export-import and

- domestic trade with minimal infrastructure investment.
- Coastal Economic Zones: The government identifies CEZs in the National Perspective Plan for Sagarmala Programme.
- CEZs aims to promote exports by providing infrastructure and facilities to entrepreneurs to set up businesses and industries near Ports.
- Indian Ocean Rim Association: India has been taking active participation in the IORA for promotion of blue economy in Indian Ocean littoral states.
- Matsya Sampada Yojana: It is a flagship scheme for focused and sustainable development of the fisheries sector in the country.
- It will bring about the Blue Revolution by harnessing fisheries' potential in a sustainable, responsible, inclusive and equitable manner.
- Polymetallic Nodules: India has received the sanction from International Seabed Authority for deep-sea mining in the Central Indian Ocean.
- Deep Ocean Mission: It was launched with an intention to develop technologies to harness the living and non-living resources from the deep-oceans.
- India-Norway Task Force on Blue Economy for Sustainable Development: It was inaugurated jointly by both the countries in 2020 to develop and follow up joint initiatives between the two countries.

Way Forward:
- With its vast maritime interests, the blue economy occupies a vital potential position in India's economic growth. It could well be the next multiplier of GDP and well-being, provided sustainability and socio-economic welfare are kept centre-stage.
- India should look to adopt the Gandhian approach of balancing economic benefits with sustainability for meeting the broader goals of growth, employment generation, equity and protection of environment.

3.17 Special Rupee Vostro Accounts

Recently, government of India informed that Russian banks have opened Special Rupee Vostro Accounts (SRVA) with partner banks in India.

About Special Rupee Vostro Accounts (SRVA):
- The SRVA is an additional arrangement to the existing system that uses freely convertible currencies.
- It works as a complimentary system to facilitate transactions that cannot be executed through the existing banking setup.

About Vostro Accounts:
- A Vostro account is an account that domestic banks hold for foreign banks in the former's domestic currency.
- In this, a foreign bank acts as an agent providing financial services on behalf of a domestic bank.
- It enables domestic banks to provide international banking services to their clients who have global banking needs.
- Domestic banks use Vostro accounts to facilitate transfers, conduct business transactions, accept deposits, and gather documents on behalf of the foreign bank.

Significance:
- The system could reduce the "net demand for foreign exchange, the U.S. dollar in particular, for the settlement of trade flows"
- It will reduce the dependence on foreign currencies.
- It can make the country less vulnerable to external shocks.
- Ensure timely payments.
- This helps domestic banks to gain wider access to foreign financial markets and serve international clients

without having to be physically present abroad.
- Vostro accounts are not restricted to banks, they can be used by other entities such as insurance companies and business entities to keep funds with another entity.
- When Vostro accounts are used by corresponding banks, the domestic bank can execute transfers, deposits, and withdrawals on behalf of the corresponding bank.

Functioning :
- The framework entails three important components, namely, invoicing, exchange rate and settlement.
- Invoicing entails that all exports and imports must be denominated and invoiced in INR.
- The exchange rate between the currencies of the trading partner countries would be market-determined.
- The final settlement also takes place in Indian National Rupee (INR).
- Domestic importers are required to make payment in INR into the SRVA account of the correspondent bank against the invoices.
- Domestic exporters are to be paid the export proceeds in INR from the balances in the designated account of the correspondent bank of the partner country.

Legal framework:
- All reporting of cross-border transactions are to be done in accordance with the extant guidelines under the Foreign Exchange Management Act (FEMA), 1999.

Eligibility criteria of banks:
- Banks from partner countries are required to approach an authorised domestic dealer bank for opening the SRVA.
- The domestic bank would then seek approval from the apex banking regulator providing details of the arrangement.
- Domestic banks should ensure that the correspondent bank is not from a country mentioned in the updated Financial Action Task Force (FATF) Public Statement on High Risk & Non-Co-operative jurisdictions.
- Authorised banks can open multiple SRV accounts for different banks from the same country.
- Balances in the account can be repatriated in freely convertible currency and/or currency of the beneficiary partner country depending on the underlying transaction, that is, for which the account was credited.

There are 3 types of accounts: Vostro, Nostro and Loro Accounts
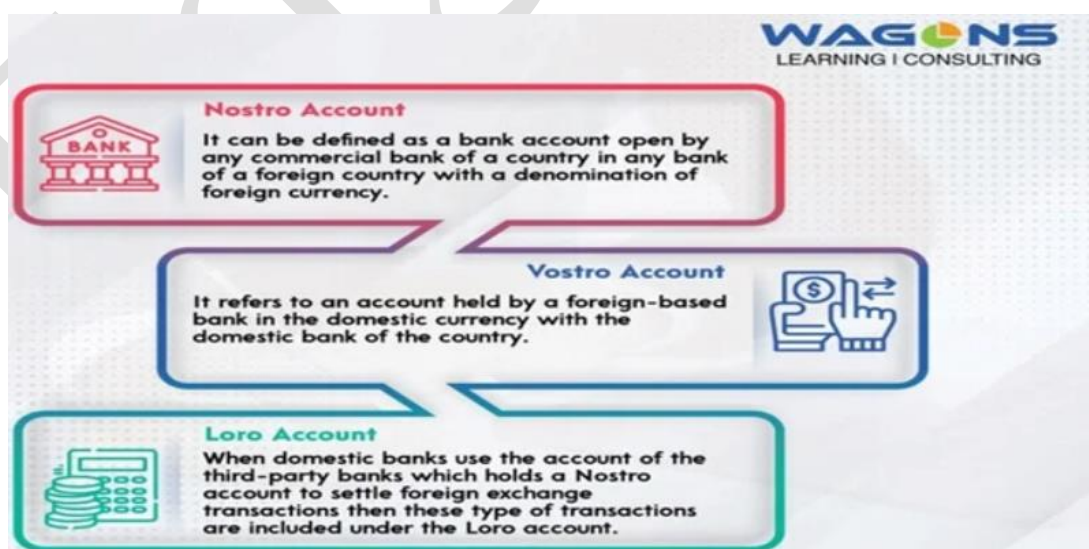
- Vostro accounts -are maintained in the domestic currency.
- Nostro accounts- are maintained in foreign currency.

- A Loro account -is a current account that is maintained by one domestic bank for another domestic bank in the form of a third-party account, unlike nostro and vostro which is bilateral correspondence.

The Foreign Exchange Management Act, 1999 (FEMA):
- It is a civil law dealing with foreign exchange market in India.
- Under it the Central Government can regulate the flow of payments to and from a person situated outside the country.
- Financial transactions concerning foreign securities or exchange cannot be carried out without the approval of FEMA.
- The Act empowers RBI to place restrictions on transactions from capital Account even if it is carried out via an authorized individual.

4. Science & Technology

4.1 Lab Grown Diamonds

During her Budget speech, Finance Minister Nirmala Sitharaman announced the government's move to focus on lab-grown diamonds.

About Lab Grown Diamonds (LDG):
- Lab grown diamonds are diamonds that are produced using specific technology which mimics the geological processes that grow natural diamonds.
- They are not the same as diamond simulants.
- LDGs are chemically, physically and optically diamond and thus are difficult to identify as lab grown.
- While materials such as Moissanite, Cubic Zirconia (CZ), White Sapphire, YAG, are diamond simulants that simply attempt to look like a diamond, they lack the sparkle and durability of a diamond and are thus easily identifiable.
- However, differentiating between an LDG and an Earth Mined Diamond is hard, with advanced equipment required for the purpose.

Uses of LGDs:
- LDGs are most often used for industrial purposes, in machines and tools.
- Their hardness and extra strength make them ideal for use as cutters.
- Pure synthetic diamonds have high thermal conductivity, but negligible electrical conductivity.
- This combination is invaluable for electronics where such diamonds can be used as a heat spreader for high-power laser diodes, laser arrays and high-power transistors.
- As the Earth's reserves of natural diamonds are depleted, LDGs are slowly replacing the prized gemstone in the jewellery industry.

4.2 Project ELLORA

The Microsoft Research (MSR) lab in India have been working towards creating Project ELLORA.

About Project ELLORA:
- The project aims to bring 'rare' Indian languages online.
- It is also known as Enabling Low Resource Languages that was launched in 2015.
- It is a digital resource for Indian languages that do not have enough presence online.
- Some of the languages that's its researching includes: Gondi, Mundari, and Idu Mishmi.

Gondi:
- It is a South-Central Dravidian language spoken by Gond tribes.
- It is spoken in Madhya Pradesh, Maharashtra, Chhattisgarh, Andhra Pradesh and Telangana.
- It is written in Devanagari and Telugu scripts.

Mundari:
- It belongs to Austroasiatic language family spoken by the Munda tribes.
- It is spoken in Jharkhand, Odisha and West Bengal.
- Scripts: Mundari bani.
- It is written in the Devanagari, Odia, Bengali, and Latin writing systems.

Idu Mishmi:
- It is spoken in Arunachal Pradesh and in Tibet Autonomous Region, China.

- It uses the Tibetan script and Idu Azobra script.
- It is also known as Sulikata, Midu, Mindri and Mithu.

4.3 NASA-ISRO Synthetic Aperture Radar (NISAR) satellite

An earth-observation satellite jointly developed by NASA and ISRO that will help study Earth's land and ice surfaces in greater detail is all set to be shipped to India as per the sources.

About NASA-ISRO Synthetic Aperture Radar (NISAR) satellite
- NISAR is a joint Earth-observing mission between NASA and the Indian Space Research Organization (ISRO) with the goal to make global measurements of the causes and consequences of land surface changes using advanced radar imaging.
- The mission is targeted to launch in 2024. NASA is providing the mission's L-band synthetic aperture radar, a high-rate communication subsystem for science data, GPS receivers, a solid-state recorder and payload data subsystem.
- ISRO is providing the spacecraft bus, the S-band radar, the launch vehicle and associated launch services.
- The NASA-ISRO SAR (NISAR) Mission will measure Earth's changing ecosystems, dynamic surfaces, and ice masses providing information about biomass, natural hazards, sea level rise, and groundwater, and will support a host of other applications.
- NISAR will observe Earth's land and ice-covered surfaces globally with 12-day regularity on ascending and descending passes, sampling Earth on average every 6 days for a baseline 3-year mission.

Synthetic aperture radar (SAR)
- It refers to a technique for producing fine-resolution images from a resolution-limited radar system.
- It requires that the radar be moving in a straight line, either on an airplane or, as in the case of NISAR, orbiting in space.

4.4 Asia's largest helicopter manufacturing facility

Asia's largest helicopter manufacturing facility in Karnataka's Tumkur.

About
- It is also a new greenfield helicopter factory.
- This helicopter factory is Asia's largest helicopter manufacturing facility and will initially produce Light Utility Helicopters (LUHs).
- LUH is an indigenously designed and developed 3-ton class, single-engine multipurpose utility helicopter with the unique feature of high maneuverability.
- This facility will enable India to meet its entire requirement of helicopters indigenously and will attain the distinction of enabling self-reliance in helicopter design, development and manufacture in the country.

4.5 Sickle cell disease (SCD)

- Finance Minister recently announced government's plan to launch a mission to eliminate sickle cell anaemia by 2047.
- It is a group of inherited red blood cell disorders.
- In someone who has SCD, the hemoglobin is abnormal, which causes the red blood cells to become hard and sticky and look like a C-shaped farm tool called a "sickle."
- The sickle cells die early, which causes a constant shortage of red blood cells.
- Also, when they travel through small blood vessels, they get stuck and clog the blood flow.
- This can cause pain and other serious complications (health problems) such as infection, acute chest

syndrome and stroke.

- SCD is a genetic condition that is present at birth.
- It is inherited when a child receives two genes—one from each parent—that code for abnormal hemoglobin.
- A blood test can determine whether you have SCD or sickle cell trait.
- SCD can also be diagnosed before a baby is born.
- SCD can only be cured by bone marrow or stem cell transplantation.

4.6 Muons

- Recently researchers are examining the fortress wall of Xi'an, an ancient city in China, by using tiny outer space particles called Muons that can penetrate hundreds of meters of stone surfaces.
- These particles have helped them find small density anomalies, which are potential safety hazards, inside the wall.

- Muons are subatomic particles raining from space.
- They are created when the particles in Earth's atmosphere collide with cosmic rays.
- These particles resemble electrons but are 207 times as massive.
- Therefore, they are sometimes called "fat electrons".
- Because muons are so heavy, they can travel through hundreds of meters of rock or other matter before getting absorbed or decaying into electrons and neutrinos.
- In comparison, electrons can penetrate through only a few centimeters.
- Muons are highly unstable and exist for just 2.2 microseconds.
- Muography – Applications
- It is conceptually similar to X-ray but capable of scanning much larger and wider structures, owing to the penetration power of muons.
- Apart from archaeology, Muography has found use in customs security, internal imaging of volcanoes and others.
- Around 2015, scientists used the technique to look inside the Fukushima nuclear reactors after the 2011 earthquake and tsunami in Japan.

4.7 Amorphous Ice

Recently Scientists have created a new type of ice that matches the density and structure of water, perhaps

opening a door to studying water's mysterious properties. The ice is called medium-density amorphous ice.

About Amorphous Ice:
- The ice is called medium-density amorphous ice.
- Amorphous ice consists of water molecules arranged in a disordered state, with no large-scale regularity to their orientations or positions.
- This kind of ice is most often found in space.
- Almost all ice in the universe is amorphous and, in a form, called low-density amorphous ice.
- This forms when water condenses onto dust grains in space.
- Comets are amorphous ice as well.
- Amorphous ice's water molecules are in a disorganized form resembling a liquid.
- This kind of ice is most often found in space.

4.8 Asbestos

Recently Brazil sinks age old aircraft carrier carrying asbestos, other toxins.

About Asbestos:
- It is a naturally occurring fibrous silicate mineral.
- Asbestos is a group of six naturally occurring minerals made up of heat-resistant fibers.
- It consists of flexible fibers resistant to heat, electricity and corrosion.
- Asbestos is an excellent electrical insulator and is highly fire-resistant, so for much of the 20th century it was very commonly used across the world as a building material.
- Construction materials contained asbestos because it is an effective insulator.
- Asbestos in cloth, paper, cement, plastic and other materials makes them stronger.
- Asbestos mainly comes from Russia, Kazakhstan and China.
- The toxic mineral was once mined throughout North America.
- Asbestos has been used on ships as both a fire retardant and an insulator to protect sailors from the constant and jarring vibrations of ships' engines.

Health Effects
- It is known to be a highly toxic material and a carcinogen.
- Inhaled or swallowed asbestos fibers can become trapped in the respiratory or digestive systems of the body, accumulating over time.
- Repeated exposure can cause inflammation and damage the DNA.
- The following illnesses have been associated with asbestos exposure: lung cancer, COPD, mesothelioma and asbestosis.

4.9 Google's Bard

Google showcased its latest work artificial intelligence (AI) as part of an event that was livestreamed on YouTube.

About Google's Bard:
- Bard is Google's own conversational AI chatbot and is based on LaMDA.
- It draws on information from the web to provide fresh, high-quality responses.
- In short, it will give in-depth, conversational and essay-style answers just like ChatGPT does right now.
- A user will be able to ask Bard to explain new discoveries from NASA's James Webb Space Telescope to a 9-year-old, or learn more about the best strikers in football right now, and then get drills to build your skills.
- Bard is built on Transformer technology – which is also the backbone of ChatGPT and other AI bots.
- Transformer technology, pioneered by Google and made open-source in 2017, is a neural network

architecture, which is capable of making predictions based on inputs.
- Currently, Bard looks like a limited rollout and it is hard to say whether it can answer more questions than ChatGPT.
- Google has also not made clear the amount of knowledge that Bard possesses.
- For instance, with ChatGPT, we know its knowledge is limited to events till 2021.

4.10 Exercise TARKASH

Sixth edition of joint exercise TARKASH recently concluded by The National Security Guard (NSG) and US Special Operations Forces (SOF).

About Exercise TARKASH:
- The exercise for the first time included "Chemical, Biological, Radiological and Nuclear (CBRN) terror response" in its drill.
- The objective was to rapidly neutralise the terrorists, rescue the hostages safely and deactivate the chemical weapons being carried by the terrorists.

Chemical, Biological, Radiological and Nuclear (CBRN) Weapons:
- CBRN weapons are also classified as weapons of mass destruction.
- They have been used by States and terror elements in the past.
- The most recent use of CBRN in the form of a sarin gas attack was witnessed in Syria in 2017 when more than 100 people died.

International Treaties related to WMD:
- The use of chemical, biological, and nuclear weapons is regulated by a number of international treaties and agreements.

Among them are the:

- Geneva Protocol, 1925, that banned the use of chemical and biological weapons
- Biological Weapons Convention, 1972, and Chemical Weapons Convention, 1992, which put comprehensive bans on the biological and chemical weapons respectively.
- India has signed and ratified both the 1972 and 1992 treaties.
- There are very few non-signatory countries to these treaties, even though several countries have been accused of non-compliance.
- The use and proliferation of nuclear weapons is regulated by treaties such as Nuclear Non-Proliferation Treaty (NPT) and the Comprehensive Test Ban Treaty (CTBT).

4.11 Skye UTM

Recently, Union Minister for Road Transport and Highways unveiled Skye UTM, confirmed as the most cutting-edge unmanned traffic management system in the world.

About Skye UTM:
- It is a Cloud-based aerial traffic management system.
- It integrates unmanned air traffic with manned aviation airspace.
- It is capable of handling 4,000 flights per hour.
- In a day, it can handle 96,000 flights.
- It will help drone operators with situational awareness, autonomous navigation, traffic management and risk assessment.
- It will aid in real-time monitoring and speed up highway construction while keeping a check on fatal road

accidents.
- It will display real-time UAV movements and provide verified paths.
- It captures over 255 parameters of UAV movements and stored them in its 'Blackbox'.
- Blackbox: small machine on an aircraft that records the details of each flight and is useful for finding out the cause of a plane crash
- It will offer the first 3D view of drone airspace.

4.12 Diyodar meteorite

Diyodar meteorite that hit India in 2022 was India's first aubrite in 170 years

About Diyodar Meteorite:
- A meteorite is a celestial object (made of rocks and metals) that enters the atmosphere of the earth and reaches the surface.
- The meteorite is a "rare, unique specimen" of aubrite.
- India has been the site of hundreds of meteorite crashes, but this is only the second recorded crash of an aubrite.

What are aubrites?
- Aubrites "are coarse-grained igneous rocks that formed" in oxygen-poor conditions, and thus "contain a variety of exotic minerals that are not found on Earth".
- For example, the mineral heideite was first described in the Basti meteorite.
- Source of Aubrites : not yet sure of their origin, but some signs indicate that they could be from the asteroid 3103 Eger or from the planet Mercury.
- Composition: Around 90% of the meteorite was composed of orthopyroxene. Pyroxenes are silicates consisting of single chains of silica tetrahedra (SiO_4); orthopyroxenes are pyroxenes with a certain structure.

4.13 QUASICRYSTALS

US Scientists discover new 'quasicrystal' in Nebraska, US.

About Quasicrystal:
- Quasicrystal is essentially a crystal-like substance.
- However, unlike a crystal, in which atoms are arranged in a repeating pattern, a quasicrystal consists of atoms that are arranged in a pattern that doesn't repeat itself regularly
- It's also the first time that researchers have found a quasicrystal somewhere other than meteorites or the debris from nuclear blasts.
- Notably, scientists have been producing them in laboratories for years now, but it's quite rare to discover naturally occurring quasicrystals.
- For the longest time, physicists believed every crystalline arrangement of atoms must have a pattern that repeats itself perfectly over and over again.
- However, this changed in 1982, when material scientist Dan Shechtman discovered crystal structures that are mathematically regular, but that do not repeat themselves.
- For his discovery, he was awarded a Nobel Prize in Chemistry in 2011.
- Quasicrystals known to "possess novel electrical, photonic, and mechanical properties that aren't found in other materials, making them an attractive prospect for materials scientists".

4.14 H5N1 virus/Bird Flue

Monitoring the evolution of the shapeshifting H5N1 virus can add to the preparedness against another potential pandemic.

About H5N1 virus/Bird Flue:
- Bird flu or avian influenza is a disease caused by avian influenza Type A viruses found naturally in wild birds worldwide.
- Avian influenza, or bird flu, is a highly contagious viral infection that primarily affects birds.
- Infrequently, the virus can infect mammals from birds, a phenomenon called spillover, and rarely can spread between mammals.
- This subtype has caused a number of human infections through close contact with infected birds or contaminated environments, and is often fatal.
- Recent reports of H5N1 spread between mammals raise concerns about its potential to cause a human pandemic if it were to spill over and become transmissible among humans.
- It can infect domestic poultry including chickens, ducks, turkeys, pigs, cats, and tigers.

Types of avian influenza:
- Avian Influenza type A viruses are classified based on two proteins on their surfaces – Hemagglutinin(HA) and Neuraminidase(NA).
- There are about 18 HA subtypes and 11 NA subtypes.
- Several combinations of these two proteins are possible e.g., H5N1, H7N2, H9N6, H17N10, etc.

Symptoms:
- A virus infections in humans have ranged from mild to severe influenza-like illness.
- Fever, cough, sore throat, muscle aches, nausea, abdominal pain, diarrhea, vomiting etc.
- Severe respiratory illness (e.g., shortness of breath, difficulty breathing, pneumonia, acute respiratory distress, viral pneumonia, respiratory failure).
- Neurologic changes (altered mental status, seizures).

Prevention of spillovers:
- Preventing H5N1 spillovers and outbreaks requires a combination of measures including:
- vaccination of poultry,
- safe disposal of dead birds,
- wearing personal protective equipment when handling birds,
- quarantine and culling of affected animals, and
- improved surveillance and monitoring of H5N1 in birds and other animals.
- molecular surveillance of H5N1
- Genome sequencing can be employed to monitor the emergence of new subtypes, and keep a close watch on mutations and virulence factors that may increase the ability to infect humans.

4.15 Genetic Information and Right to Privacy

Context: Recently, the Supreme Court (SC) has held in a judgment that children cannot be subjected to DNA tests in each and every case to establish proof of infidelity.

About Genetic Privacy:
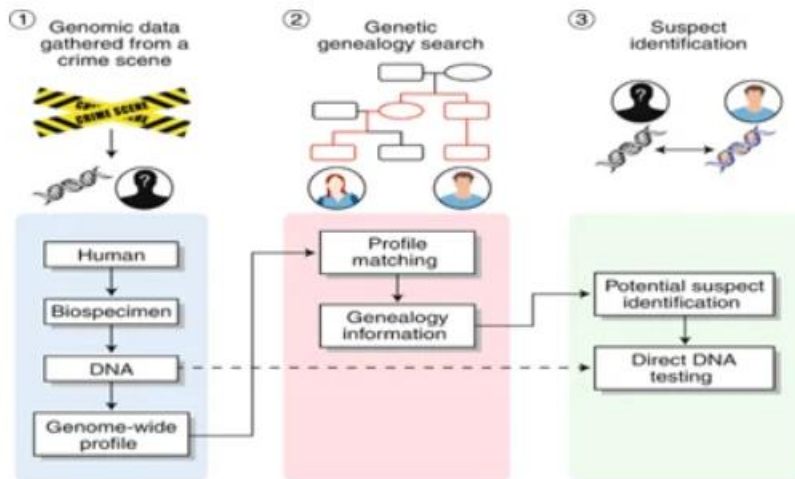
- It is a term that seeks to prevent a third party from using a person's genetic data without his permission.
- A person's genes are the blueprint of his or her physical or biological being, personal life and information about the future, present and history.
- Other information that can be abstracted: alcoholism, depression, aggressiveness, sexual orientation, mental productivity etc.
- When a person's genetic data is used for testing, medical purposes, or other purposes, his privacy should be protected.
- Genetic data is made up of a person's deoxyribonucleic acid (DNA) and chromosomes.
- DNA sample sources: hair, teeth, blood etc.

SC rulings on genetic information:
- Genetic information is personal and intimate.
- Thus, a child's genetic information is part of his fundamental right to privacy.
- Children have the right to not have their legitimacy questioned before a court of law.
- DNA tests would harm the reputation and dignity of the mother.
- The children should not to be subjected to forensic/DNA testing during the divorce proceedings.
- Family courts should direct for a DNA test only in the situations where it is a last resort and in the interest of justice.

Status of Genetic Privacy in India:
- In 2018, The Delhi High Court stated that discrimination in health insurance against people based on their genetic origin, in the absence of genetic test is unconstitutional.
- Genetic discrimination breaches Article 14, which guarantees equality before the law.
- In Justice KS Puttaswamy (Retd.) & Anr. v. Union of India, SC stated that the Right to Privacy is a fundamental Right under Article 21.

Genetic discrimination in other countries:
- In 2008, the United States had passed the Genetic Information Non-discrimination Act (GINA), to protects people from genetic discrimination in health care and jobs.
- Council of Europe has adopted the Guidelines on the use of genetic knowledge for insurance purposes.
- Under Canada's Genetic Non-discrimination Act, it is illegal for insurers or employers to request DNA testing or findings.

Advantages of genetic information:
- Genetic information may disclose information about a disease, illness, or a person's health status.
- It can make a person more aware of his or her health.
- A person can learn about his ancestors and distant relatives.

- One's data can be used in medical research.
- If a person learns about his illness early on, he would be able to take more preventative steps to treat it.

Disadvantages of genetic Information:
- Based on the profile available in the domain, genetic evidence can be fabricated in any crime scene through engineered DNA samples not taken from a real individual.
- Data such as person's personal life, health, family members, and other private information when assessed by a third party can be misused.
- If such information is revealed, it can negatively impact individuals lives, such as discrimination from employers, insurance providers, the government, and others.

UN Convention on the Rights of the Child:
- It is a treaty adopted by the United Nations General Assembly in 1989.
- It recognises a child as every human being under 18 years old.
- It is an international agreement that is legally binding on the members.
- It sets out the civil, political, economic, social and cultural rights of every child, regardless of their race, religion or abilities.
- It includes rights such as Right to Education, Right to Rest and Leisure, Right to Protection from Mental or Physical Abuse including Rape and Sexual Exploitation.
- It has been ratified by all members of the UN except for the United States.
- It is the most widely ratified human rights treaty in the history of the world.

Way Forward:
- Thus with improvements in encryption, safe storage, and data transfer protocols, there may be potential to improve privacy protections technologically. From an ethical standpoint, it will be crucial to keep educating the public about the benefits and dangers of genetic testing and data sharing. It may entail activities to provide fair access to genetic testing and benefits as well as efforts to support transparency, openness, and accountability around the collection, use, and sharing of genetic data.

4.16 REAIM 2023

Recently, World's first global summit on Responsible AI in the Military was organized in Netherlands.

About REAIM:
- It brings together governments, corporations, academia, startups, and civil societies to raise awareness, discuss issues, and possibly, agree on common principles for deploying and using AI in armed conflicts.
- India wasn't part of this summit.
- It was co-hosted by the Republic of Korea.
- Themes of REAIM: "Myth busting AI: breaking down the characteristics of AI".

Aim:
- To put the topic of responsible AI in the military domain higher on the political agenda.
- To mobilise and activate a wide group of stakeholders to contribute to concrete next steps.
- To foster and increase knowledge by sharing experiences, best practices and solutions.

4.17 Survey of India

Recently, the Centre officially released the National Geospatial Policy of India which allows any private agency to make high-resolution maps.

About Survey of India:
- Survey of India, The National Survey and Mapping Organization of the country under the Department of Science & Technology.
- It is the oldest scientific department of the Indian government.
- It was established in 1767 to help consolidate the Indian territories of the British East India Company.
- Its assigned role as the nation's Principal Mapping Agency.
- It is headquartered in Dehradun, Uttarakhand.
- It is India's principal mapping agency and functions under the Department of Science and Technology (DST), Ministry of Science and Technology, Government of India.
- It provides base maps for expeditious and integrated development of the country by ensuring that all resources contribute to the progress, security, and prosperity of the nation for the present and the future.
- It is headed by the Surveyor-General of India.

5. Environment & Ecology

5.1 Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP)

Recently, the Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP) organised a 'National workshop on LiFE' in association with National Museum of Natural History, a subordinate office of Ministry of Environment, Forest and Climate Change.

About Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP):
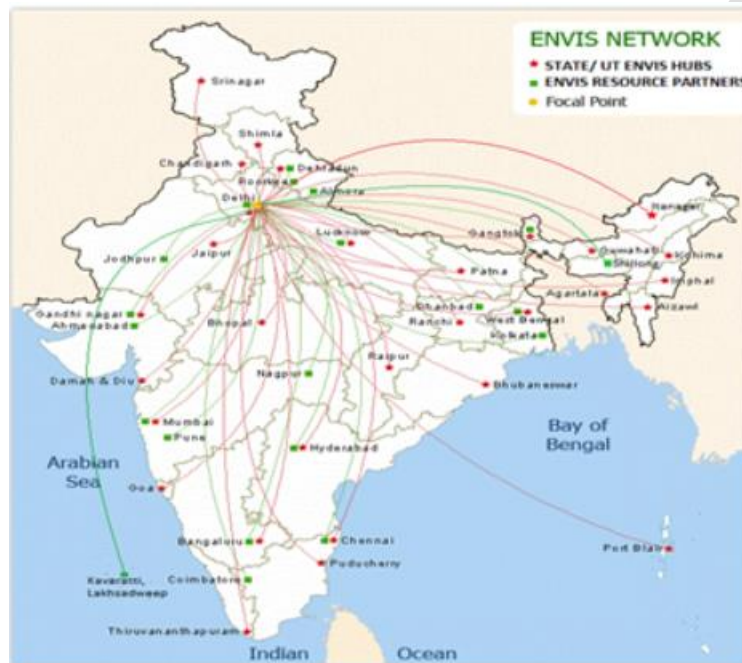
- Environmental Information System (ENVIS) was renamed as EIACP (Environmental Information, Awareness, Capacity Building and Livelihood Programme).
- ENVIS came into existence as a plan programme in 1983.
- It serves as a single-stop web-enabled repository of comprehensive environmental information with collection, collation, storage, retrieval and dissemination of the same through a nationwide network of ENVIS Hubs and ENVIS Resource Partners (RPs).

About National Museum of Natural History:
- The National Museum of Natural History (NMNH), New Delhi was established in 1972.
- The museum functions under the Ministry of Environment, Forests and Climate Change, Government of India.
- It is an institution devoted to environmental education, derives its strength principally from theme-based exhibition galleries, experiential resource centers and Out-Reach Activities, with the intention to depict the country's rich natural heritage and natural history (Geology, Botany and Zoology).

Objectives of NMNH:
- To develop the NMNH in the country's capital to achieve the highest level of quality to promote environmental education on a national level
- To develop Regional Offices (Regional Museum of Natural History) in various regions of the country in order to extend its activities at the regional/local levels
- To develop museum-based educational projects at the level so as to help school curriculum on environmental education
- To develop environmental education resource materials (such as audio-visual aids, low-cost teaching aids,

school loan kits, etc.) to promote environmental education
- To undertake research (musicological and collection based) consonant with the scope and resources of the museum
- To extend professional help to other agencies/organizations regarding natural history collections/museums
- To develop national and international cooperation/collaboration with other organizations/professional bodies/museums related to natural history/environmental education.

5.2 The Cape Buffalo/ Southern Savanna Buffalo

According to recent studies the Cape Buffalo populations were less genetically variable or diverse in the extreme southern part of their range. This means that there had been more interbreeding among them.

About the Cape Buffalo/ Southern Savanna Buffalo:
- African buffalo occur in Sub-Saharan Africa.
- They prefer a habitat with dense cover, such as reeds and thickets, but can also be found in open woodland, montane grasslands and forest, savannas, and moist lowland rainforests.
- During the dry season, males leave the herd and form, bachelor groups. Two types of bachelor herds occur: ones made of males aged 4 to 7 years and those of males 12 years or older.
- During the wet season, the younger bulls rejoin a herd to mate with the females. They stay with them throughout the season to protect the calves.
- African buffalo have a strictly herbivorous (graminivorous, florivorous) diet.
- They feed on a wide variety of grasses, sedges, leaves, and other plants.
- African buffalo are polygynandries (promiscuous) meaning that both males and females' mate with multiple partners.
- They mate and give birth only during the rainy seasons.
- Cows usually reproduce every two years.
- They give birth to a single calf after a gestation period of 11.5 months.
- Males become reproductively mature when they are 4 to 6 years old.
- IUCN Red list: Near Threatened (NT)

5.3 Asiatic Black Bear

The Kashmir Valley has bucked the trend of Asiatic black bear attacks on humans rarely reported throughout the animal's global range.

Asiatic Black Bear
- Scientific name – Ursus thibetanus
- It is also called Himalayan bear, Tibetan bear, or moon bear
- It has a glossy black (sometimes brownish) coat with a whitish mark shaped like a crescent moon on the chest.
- Its long, coarse neck and shoulder hair forms a modified mane.
- It is omnivorous, eating insects, fruit, nuts, bees and honey, small mammals, and birds as well as carrion.
- It occasionally attacks domestic animals.
- They are generally nocturnal, sleeping in caves or tree hollows during the day
- During the summer the Asiatic black bear lives mainly in forested hills and mountains at elevations up to 3,600 metres (11,800 feet).
- Becoming fat by fall, it spends the winter at elevations of 1,500 metres (5,000 feet) or less and may sleep for much of the time.
- An adult male weighs 100–200 kg (220–440 pounds), a female about half as much; its length averages about 130–190 cm (51–75 inches), in addition to a 7–10-cm (3–4-inch) tail.

- Asiatic black bears may live as long as 25 years in the wild and up to 39 years in captivity.
- IUCN status – Vulnerable
- All Indian Bear species are listed under Appendix I in CITES and Schedule I of the Wildlife (Protection) Act, 1972.
- This provides complete protection to the species from hunting and trade.

Distribution
- Afghanistan; Bangladesh; Bhutan; Cambodia; China; India; Iran, Islamic Republic of; Japan; Korea, Democratic People's Republic of; Korea, Republic of; Lao People's Democratic Republic; Myanmar; Nepal; Pakistan; Russian Federation; Taiwan, Province of China; Thailand; Viet Nam

Reproduction
- Males and females become sexually mature between ages three and four.
- Mating occurs between June and October, and pregnancies typically produce two cubs some seven to eight months later.

5.4 Wildlife Institute of India (WII)

The Wildlife Institute of India (WII) is working to develop immuno-contraceptive measures for population management of species that have become problematic for humans in many parts of the country.

About WII:
- It is an autonomous institution under the Ministry of Environment, Forest and Climate Change.
- It was established in 1982.
- It is based in Dehradun, Uttarakhand.
- It offers training programs, academic courses, and advisory in wildlife research and management.

About Nilgai antelope:
- It is the largest Asian antelope (family Bovidae).
- The nilgai is indigenous to the Indian subcontinent, and Hindus accord it the same sacred status as cattle (both belong to the subfamily Bovine).
- Description: Nilgai is the Hindustani word for "blue cow," which describes the blue-grey of adult bulls.
- It has a long neck with a short upright mane, a bony narrow head, a barrel-like chest, strong legs, and high withers sloping back to the croup.
- Habitat: It lives in a lightly wooded forest, wooded grassland, scrub areas and agricultural areas and human settlements. Blue Bull usually avoids dense Forests.
- Threats: It is seldom killed or injured in retaliation in response to crop-raiding.
- The major threat to this species is habitat loss and degradation due to human encroachment, clearing of forest for agriculture and over-grazing of livestock in their habitats.

Conservation Status:
- The IUCN Red List of Threatened Species listed it as Least Concern.
- It enjoys legal protection by virtue of the species having been included in Schedule-III of the Wildlife (Protection) Act, 1972.

5.5 Inclusive Forum on Carbon Mitigation Approaches

Organisation for Economic Co-operation and Development (OEDC) launched Inclusive Forum on Carbon Mitigation Approaches.

About Inclusive Forum on Carbon Mitigation Approaches:
- It aims to help improve the global impact of emissions reduction efforts around the world through better data and information sharing, evidence-based mutual learning and inclusive multilateral dialogue.

Objectives of the Forum:
- To take stock of mitigation policy instruments that countries use to reduce greenhouse gas emissions and estimate the emissions.
- To develop and apply a consistent methodology to assess the effects of mitigation policies and policy packages on emission reductions at the country level.
- First meeting: Paris, France
- It will help policymakers to showcase and discern good practices and adopt and adapt mitigation policies.
- It will complement other international efforts on climate policy data, including in the context of the United Nations Framework Convention on Climate Change Enhanced Transparency Framework.
- 133 countries around the world, representing around 91% of global GDP and covering around 83% of global emissions, have adopted net-zero carbon emissions targets.

5.6 Kambalakonda Wildlife Sanctuary

Andhra Pradesh Forest Department is initiating a series of measures to develop the place and document the flora and fauna of the region.

About Kambalakonda Wildlife Sanctuary:
- The Kambalakonda Wildlife Sanctuary is a forest located near Visakhapatnam, near Andhra Pradesh.
- The sanctuary is a tropical deciduous forest with a canopy of tree cover of mixed composition along with scrubland and meadows.
- It is bordered by Simhachalam hill range on the West and Gambheeram reservoir on the North-east.
- Important species:
- Fauna: The indicator species is the Indian leopard. Other species found here are Indian clouded gecko, bulbuls, barbets, cuckoos, flycatchers, hornbills and leafbirds, starlings
- Flora: Jamun tree, Red cutch tree, Teak, Indigo tree, Rosewood, Neem.

5.7 Blackbuck

The blackbuck population has increased threefold in Odisha's Ganjam district.

About Blackbuck:
- The Blackbuck (Antilope cervicapra), or the Indian Antelope, is a species of antelope native to India and Nepal.
- The blackbuck is a diurnal antelope (active mainly during the day).

Protection Status:
- Wildlife Protection Act 1972: Schedule I
- IUCN Status: Least Concern
- CITES: Appendix III
- It has been declared as the State Animal of Punjab, Haryana, and Andhra Pradesh.

Habitat of Blackbuck
- They inhabit grassy plains and thin forest areas with easily available water resources.
- It inhabits several protected areas of India, including:
- Gir National Park, Gujarat
- Kaimur Wildlife Sanctuary, Bihar

- Kanha National Park, Madhya Pradesh
- Ranthambore National Park, Rajasthan
- Ranebennur Blackbuck Sanctuary, Karnataka
- Vallanadu Wildlife Sanctuary, Tamil Nadu

Threats:
- Habitat Fragmentation, Deforestation, Natural Calamities, Illegal Hunting.
- Blackbucks were sighted in the Balukhand-Konark wildlife sanctuary in the Puri district through 2012-13

Balukhand Wildlife Sanctuary:
- The Balukhand-Konark Wildlife Sanctuary is located in Odisha, along the Bay of Bengal coast, between the towns of Puri and Konark.
- Important Species found: Blackbuck and Spotted Deer.

5.8 Aerosols and their effect on Global Climate

Role of Industrial Aerosols in contributing to Global Cooling. A new study reveals that inactive volcanoes contributed 66 percent of sulphate emissions, known to cool the planet, in the preindustrial era.

About Aerosols:
- Aerosols are defined as a combination of liquid or solid particles suspended in a gaseous or liquid environment.
- In the atmosphere, these particles are mainly situated in the low layers of the atmosphere (< 1.5 km) since aerosol sources are located on the terrestrial surface.
- However, certain aerosols can still be found in the stratosphere, especially volcanic aerosols ejected into the high altitude layers.

Source of aerosols
- Natural sources – sea salt generated from breaking waves, mineral dust blown from the surface by wind, and volcanoes.
- Anthropogenic aerosols – sulphate, nitrate, and carbonaceous aerosols, and are mainly from fossil fuel combustion sources.

Effects of aerosols:
- They affect the atmospheric chemical composition.
- They can reduce visibility.
- They have important impacts on air quality and human health (e.g. aerosols can cause damage to heart and lungs).
- They serve as nuclei for cloud droplets or ice crystals in ice clouds.

5.9 Corporate Climate Responsibility Monitor 2023

Corporate climate efforts fall short; 24 major companies will be able to reduce only 36% emissions. Only five of 24 companies hit the 90% emission reduction projection by their respective target years.

About the Corporate Climate Responsibility Monitor 2023:
- Published by Germany-based think-tank New Climate Institute (NCI),
- Objective: To assess the climate strategies of these industry-leading companies, critically analyzing the extent to which they are meeting their climate goals.
- Findings: The combined Net Zero pledges of 24 major global companies will reduce their total greenhouse-gas emissions by 36 per cent by their respective target years, typically 2040 or 2050, compared with the

reduction of at least 90 per cent that is needed.
- Climate pledges for 2030 fall well short of the economy-wide emission reductions required to stay below the 1.5°C temperature limit.

5.10 Global Sea-level Rise and Implications

Recently, the report "Global Sea-level Rise and Implications" was released by the World Meteorological Organisation (WMO).

Key highlights of the report:

(Source: World Meteorological Organization)
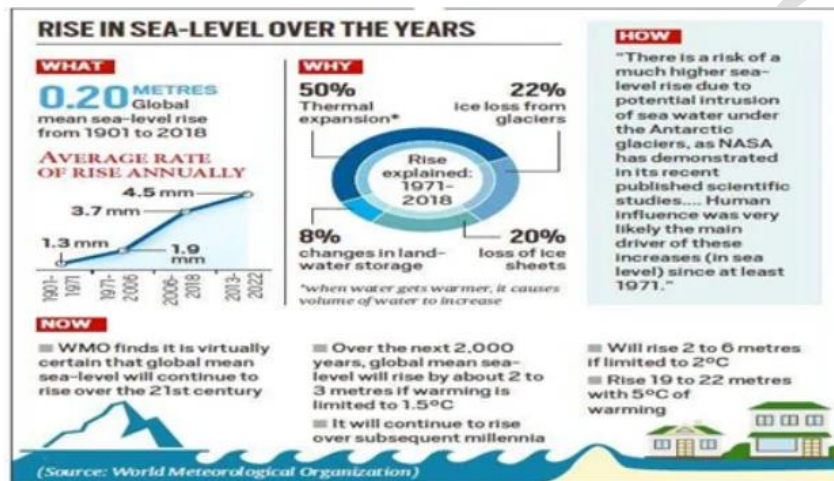
- Threats of Sea level rise: India, China, Bangladesh and the Netherlands face the highest threat of sea-level rise globally.
- The report stated that several big cities in all continents are threatened by the rise in sea level.
- These include Shanghai, Dhaka, Bangkok, Jakarta, Mumbai, Maputo, Lagos, Cairo, London, Copenhagen, New York, Los Angeles, Buenos Aires and Santiago.
- Stimulating factors: If trends in urbanisation in exposed areas continue, this will exacerbate the impacts, with more challenges where energy, water and other services are constrained," it reported.
- The impacts of average sea-level rise are boosted by storm surges and tidal variations, as was the situation during the landfall of hurricane Sandy in New York and Cyclone Idai in Mozambique.
- Melting of ice mass in Antarctica: According to future estimates based on climate models and ocean-atmosphere physics, the WMO reported that the speed of melting of the largest global ice mass in Antarctica is uncertain.

Impact of Sea level rise:
- Submergence: According to the report, while sea-level rise is not globally uniform and varies regionally, continued and accelerating sea-level rise will encroach on coastal settlements and infrastructure and commit low-lying coastal ecosystems to submergence and loss.
- All round impact: Sea level rise is a major economic, social and humanitarian challenge.
- It threatens coastal farmlands and water reserves and resilience of infrastructures as well as human lives and livelihoods, the report noted.
- Food insecurity: Climate change will increasingly put pressure on food production and access, especially in vulnerable regions, undermining food security and nutrition and increases in frequency, intensity and severity of droughts, floods and heatwaves, and continued sea level rise will increase risks to food security in vulnerable regions.
- Primary reasons for the Sea Level Rise: The change in sea levels is linked to three primary factors, all induced by ongoing global climate change:

Melting glaciers:
- Large ice formations such as mountain glaciers naturally melt a bit each summer.
- In the winter, snows, primarily from evaporated sea water, are generally sufficient to balance out the melting.
- Recently, though, persistently higher temperatures caused by global warming have led to greater than average summer melting as well as diminished snowfall due to later winters and earlier springs.

Thermal expansion:
- When water heats up, it expands.
- About half of the sea-level rise over the past 25 years is attributable to warmer oceans simply occupying more space.

Loss of Greenland and Antarctica's ice sheets:
- As with mountain glaciers, increased heat is causing the massive ice sheets that cover Greenland and Antarctica to melt more quickly.
- Scientists also believe that meltwater from above and seawater from below is seeping beneath Greenland's ice sheets, effectively lubricating ice streams and causing them to move more quickly into the sea.
- While melting in West Antarctica has drawn considerable focus from scientists, especially with the 2017 break in the Larsen C ice shelf, glaciers in East Antarctica are also showing signs of destabilizing.

Way Forward:
- Coastal cities and settlements play a key role in moving toward higher climate resilient development given firstly, almost 11% of the global population of 896 million people lived within the Low Elevation Coastal Zone in 2020, potentially increasing to beyond 1 billion people by 2050.
- These people, and associated development and coastal ecosystems, face escalating climate compounded risks, including sea level rise.
- The Coastal cities can implement the following measures to address sea level rise
- Using Beaches As Barriers
- Building Seawalls
- Raising Roads
- Building Stormwater Pumps
- Upgrading Sewage Systems
- Creating Natural Infrastructure
- Slowing Land Sinkage
- Global Plans to reduce the impacts of Sea Level rise:
- In Jakarta, a $40 billion project will aim to protect the city with an 80-foot-high seawall.
- Rotterdam, home to the global Centre on Adaptation, has offered a model to other cities seeking to combat flooding and land loss.
- The Dutch city has built barriers, drainage, and innovative architectural features such as Water Square with temporary ponds.

5.11 Pangolins

According to the analysis by TRAFFIC, a global wildlife conservation non-profit, and World-Wide Fund for Nature-India, over 1200 Pangolins were poached for illegal wildlife trade in India from 2018-2022.

About Pangolins:
- Pangolins are nocturnal, toothless mammals that dig burrows and feed on ants and termites.
- Pangolins are scaly anteater mammals and they have large, protective keratin scales covering their skin.
- Pangolin is the only scaly mammal on the planet.

- It uses these scales as armor to defend itself against predators by rolling into a ball when threatened.
- Out of the eight species of pangolin, the Indian Pangolin (Manis crassicaudata) and the Chinese Pangolin (Manis pentadactyla) are found in India.

About Ecosystem Services:
- They play a vital role in the ecosystem management, mostly in aerating and adding moisture to the soil as well as succession of plant communities through burrowing.
- They also keep in check the population of certain insects they prey on.
- The burrows made by pangolins also get utilized as shelters by other species within their ecosystem.

Indian Pangolin
- Range – Bangladesh, India, Nepal, Pakistan and Sri Lanka
- IUCN – Endangered
- The Indian pangolin, which dons a thick scaly skin, is hunted for meat and used in traditional Chinese medicine.
- Both these species are listed under Schedule I Part I of the Wildlife (Protection) Act, 1972.

Chinese Pangolin
- Range – Bangladesh; Bhutan; China; Hong Kong; India; Lao People's Democratic Republic; Myanmar; Nepal; Taiwan, Province of China; Thailand; Viet Nam
- IUCN – Critically Endangered

5.12 Marine Spatial Planning Framework

- Puducherry has launched the country's first Marine Spatial Planning (MSP) framework as part of a pact under the Indo-Norway Integrated Ocean Initiative.
- Aim: to balance growth alongside sustainable management of ocean resources and coastal environment preservation.

About Marine Spatial Planning:
- MSP is an ecosystem-based spatial planning process for analyzing current and anticipated ocean and coastal uses and identifying areas most suitable for various activities.
- It provides a public policy process for society to better determine how the ocean and coasts are sustainably used and protected – now and for future generations.
- The initiative, known as Marine Spatial Planning (MSP), will be implemented by the Ministry of Earth Sciences (MoES) through the National Centre for Coastal Research (NCCR) for India.

The IOC-UNESCO Marine Spatial Planning Programme:
- It helps countries implement ecosystem-based management by finding space for biodiversity, conservation and sustainable economic development in marine areas.
- IOC-UNESCO has developed several guides, including a 10-step guide on how to get a marine spatial plan started: "Step-by-step Approach for Marine Spatial Planning toward Ecosystem-based Management".

5.13 Rhododendrons

Rhododendrons carpet Darjeeling, Sikkim Himalayas.

About Rhododendrons:
- Rhododendron is a large genus of flowering plants that are found mainly in the Eastern Himalayas, Western Himalayas, and Nilgiris.
- They are native to many regions of the world, including Asia, Europe, North America, and Australia.

- The species is found in varied habitats from subtropical forests to alpine shrubs, rhododendrons range from dwarf shrubs to large trees.
- Some plants of Rhododendron are evergreen while others are deciduous in nature.
- The species has been designated as the State tree of Uttarakhand.
- Darjeeling and Sikkim Himalayas are home to one-third (34%) of all Rhododendron types and comprise only 0.3% of India's geographical area.
- Rhododendrons are indicator species.
- They are facing a high threat due to anthropological pressures and climate change.

5.14 Apple of Sodom

IIT-Madras recently uncovered a low-cost, eco-friendly emulsifier in the latex sap of a commonly found plant called the Apple of Sodom.

About Apple of Sodom :
- Calotropis procera is commonly known as the Apple of Sodom.
- It is a species of flowering plant in the Milkweed family, Asclepiadaceae.
- It is native to West Africa as far south as Angola, North and East Africa, Madagascar, the Arabian Peninsula, Southern Asia, Indo-China region and Malaysia.
- The green fruits contain a toxic milky sap that is extremely bitter and hardens into a soap-resistant gluey coating.

Ayurvedic Health benefits of Apple of Sodom:-
- Ascites: Apply the latex of Sodom locally on the affected areas.
- Leprosy: Use the latex of Sodom plant on the affected skin.
- Ringworms: Apply the milky fluid of Sodom plant over infected skin.
- Stings: Locally apply the milk fluid of Sodom plant on the damaged skin.
- Deafness: Take a ripe yellow leaf of Sodom. Warm it. Squeeze the leaf juice drops in ears.
- Use it for 2 weeks.
- Caries: Apply the latex of Sodom on the affected teeth.
- Gastroenteritis: Roast the leaves of Sodom and apply locally.

Health Benefits of Apple:
- Juice of the plant is poisonous it has been used as an infanticide in Africa.
- Both the bark and the latex are widely used as arrow and spear poisons.
- Latex is cardio toxic with the active ingredient being calotropin.
- All parts of plant are poisonous if ingested.
- Handling plant may cause skin irritation or allergic reaction

5.15 Solar Energy in India

The Union budget increased allocation for the Production-linked incentive (PLI) scheme for high-efficiency solar modules.

About Solar Panel and its working:
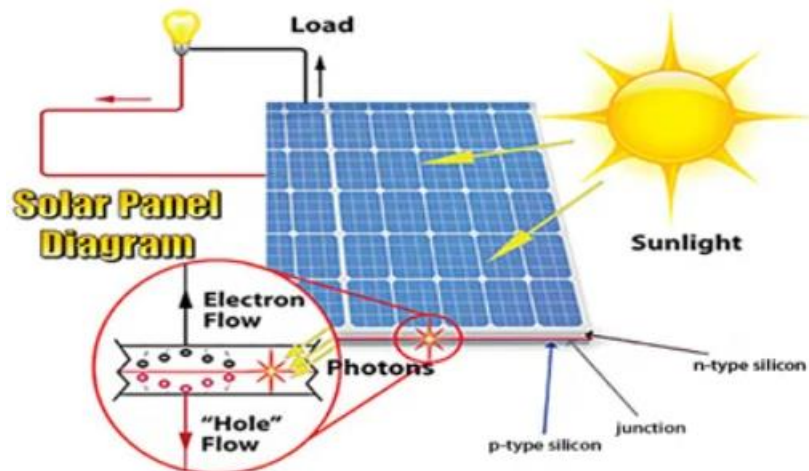
- A solar panel is a collection of photovoltaic (PV) cells that collect sunlight and convert it into electric current.
- When sunlight hits the semiconductor in the solar PV cell the energy from the light in the form of photons is absorbed.
- This energy absorption results in exciting a number of electrons, which then drift freely in the cell.
- The solar cell is specifically designed to create an electric field.
- This electric field forces the electrons to flow in a certain direction- towards the electrical terminals that line the cell.
- This flow is known as an energy current, and the strength of the current is determined by how much electricity each cell can produce.
- Once the electrons reach terminals the current is then directed into wires making the panel a source of electrical energy.

Solar Energy potential in India:
- From less than 10 MW in 2010, India has added significant PV capacity over the past decade, achieving over 50 GW by 2022.
- By 2030, India is targeting about 500 GW of renewable energy deployment, out of which ~280 GW is expected from solar PV.
- This calls for 30 GW of solar capacity every year until 2030.
- India's current solar module manufacturing capacity is limited to around 15 GW per year rest is met through imports.
- An estimated 85 per cent of this import need is met by three countries China, alongside Vietnam and Malaysia.
- The value of solar imported since 2014 adds up to $12.93 billion, or Rs 90,000 crore.

Advantages of Solar Energy in India:
- This is an inexhaustible source of energy and the best replacement to other non-renewable energies in India.
- Solar energy is environment friendly, hence it is very suitable for India as it is being one of the most polluted countries of the world.
- Solar energy can be used for variety of purposes like as heating, drying, cooking or electricity, which is suitable for the rural areas in India replacing other energy resources.
- It can also be used in cars, planes, large power boats, satellites, calculators and many more such items, just apt for the urban population.
- In an energy deficient country like India, where power generation is costly, solar energy is the best alternate means of power generation.
- Solar panels can be easily installed; hence it is quite inexpensive compared to other sources of energy.

- By 2012, a total of 4,600,000 solar lanterns and 861,654 solar-powered home lights were installed.
- Typically replacing kerosene lamps, they can be purchased for the cost of a few months' worth of kerosene with a small loan.
- The Ministry of New and Renewable Energy is offering a 30- to 40-percent subsidy of the cost of lanterns, home lights and small systems.
- Solar photovoltaic water-pumping systems are used for irrigation and drinking water.

Challenges of solar energy manufacturing in India:
- Solar cell manufacturing needs a huge amount of capital.
- The cost of debt in India (11%) is highest in the Asia-Pacific region, while in China it is about 5%.
- Solar cell manufacturing is a complicated process that is technology intensive.
- Establishing state-of-the-art manufacturing facilities needs access to technology.
- It is unlikely that companies that have spent millions of dollars on R&D would make it easy for India to access the latest technologies easily or at a lower cost.
- Lack of an integrated set-up and the economies of scale (despite 100 per cent FDI in the renewable energy sector) translates into higher cost of domestic production
- Solar panel Manufacturing suffers from a huge raw material supply crunch.
- Silicon wafer, the most expensive raw material in the panel, is not manufactured in India.
- Solar cell technology sees upgrades every 8-10 months making manufacturing inefficient for new entrants.

Govt. of India Initiatives:
- The govt. of India established a 19,500-crore production linked incentive (PLI) scheme on 'national programme on high efficiency solar PV modules', seeking to attract Rs 94,000-crore investment in the sector.
- Modified Special Incentive Package Scheme (M-SIPS) of Ministry of Electronics & Information Technology offers a 20-25 per cent subsidy for investments in capital expenditure for setting up a manufacturing facility.
- Atal Jyoti Yojana (AJAY): The AJAY scheme was launched in September 2016 for the installation of solar street lighting (SSL) systems in states with less than 50% of households covered with grid power (as per Census 2011).
- PM KUSUM: The scheme aims to add solar and other renewable capacity of 30,800 MW by 2022 with total central financial support of Rs. 34,422 Crores.
- Solar Park Scheme: The Solar Park Scheme plans to build a number of solar parks, each with a capacity of nearly 500 MW, across several states.
- SRISTI Scheme: Sustainable rooftop implementation of Solar transfiguration of India (SRISTI) scheme to promote rooftop solar power projects in India.
- National Solar Mission: It is a major initiative of the Government of India and State Governments to promote ecologically sustainable growth while addressing India's energy security challenge.

5.16 Extended Producer Responsibility

India's Extended Producer Responsibility (EPR) framework for used tyres, batteries, and revised rules for e-waste and plastics kindled interest among the G20 countries.

About Extended Producer Responsibility:
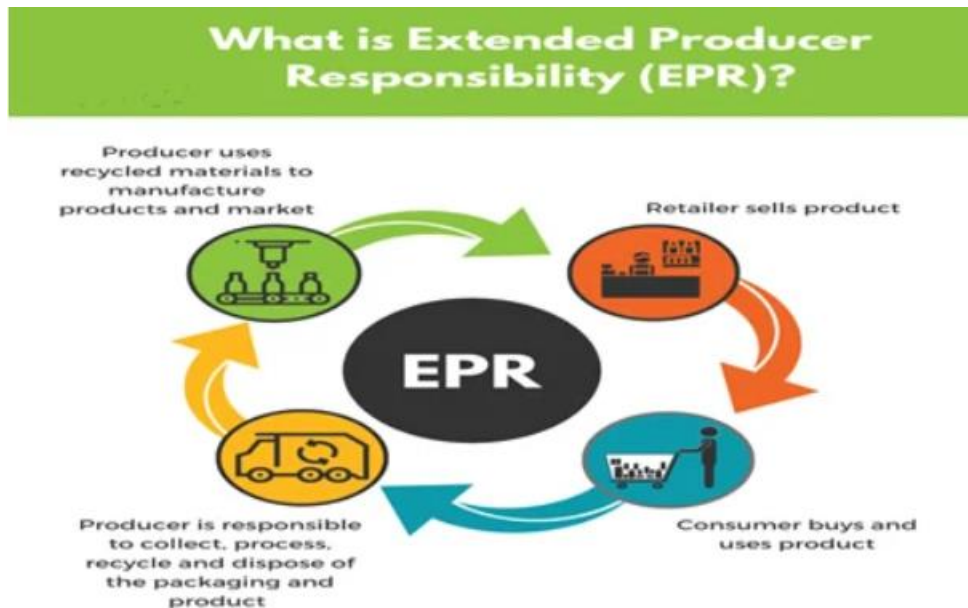
- Extended producers' Responsibilities is a globally recognized policy used as an effective tool to put the onus on the producers for efficient end of life waste management of the plastic, electronic and electrical equipment.

The concept of EPR responsibility is based on three foundation principles:
- Pollution prevention approach
- Life cycle thinking,
- Polluter pay principle
- EPR responsibility makes it the responsibility of the producers not only to take back products for recycling but also to design better and longer life products to minimize the amount of waste generated.

EPR in India:
EPR responsibility Certificate:
- EPR responsibility Certificate is authorized by Central Pollution Control Board which is mandatory for Producers/Importers of the Electronic products.
- Under these rules, the producers have a responsibility to delegate this responsibility to the third party or specialized organizations which manufacturers can financially aid for proper waste management.

EPR Responsibility Policies under E-Waste Management Rules:
- E-Waste (management and handling) Rules, 2016 adopted Extended Producers Responsibility for the first time in India.
- EPR responsibility under E-Waste (management) Rules, 2016 stipulates collection targets of E–Waste for producers.
- The producers are responsible for setting up collection centres for e-waste and financing and organizing a system for environmentally sound management of e-waste.
- The producers are required to have an arrangement with dismantlers and recyclers through either the Producers responsibility organization or the E-Waste exchange system.
- Marketing or selling any electronic equipment without EPR responsibility Authorization is considered a violation of the rules.

EPR responsibility Policy under Plastic Waste Management Rules:
- The Plastic Waste Management (Amendment) Rules, 2022 provide guidelines for strengthening the circular economy of plastic packaging waste as well as promoting alternatives to plastic.

- Producers of waste are mandated to ensure that generation of plastic waste is minimized, and plastic waste is not littered and stored at the source, which is then handed over to local bodies or authorized agencies.

5.17 Kunming-Montreal Global Biodiversity Framework

The Kunming-Montreal Global Biodiversity Framework adopted recently, respects the rights of indigenous people regarding biodiversity.

About Kunming-Montreal Global Biodiversity Framework:
- The "Kunming-Montreal Global Biodiversity Framework" (GBF) was adopted by the 15th Conference of Parties (COP15) to the UN Convention on Biological Diversity.
- It includes four goals and 23 targets to be achieved by 2030.
- COP 15 took place in Montreal, Canada.
- Through Kunming-Montreal Global Biodiversity Framework (GBF), countries agreed to protect 30 percent of the planet by 2030.
- The countries pledged to achieve 23 targets to reverse ecosystem degradation under four overarching goals for the survival of the natural world.
- Under the Global Biodiversity Framework (GBF), countries also agreed to reduce harmful government subsidies worth 500 billion dollars annually, while vowing to identify subsidies that are harmful to biodiversity by 2025.
- Its other targets include reducing the use of pesticides by half and raising annual international financial flows from developed to developing countries to at least 20 billion dollars by 2025, and to at least 30 billion dollars by 2030.

Impact on India:
- The Global Biodiversity Plan gives India legroom on farm subsidies.
- The GBF gives elbow space to India both in terms of continuing farm subsidies and pesticide use.

About Nagoya Protocol:
- This protocol was established at the Convention on Biological Diversity.
- The Nagoya Protocol is an international agreement that aims to fairly and equitably distribute the advantages that result from the use of genetic resources.
- The procedure was approved in Nagoya, Japan, in 2010 and came into effect in 2014.
- The Nagoya Protocol has been ratified by 137 parties as of April 2022, including the European Union and 136 UN member states.
- India signed the Nagoya Protocol in 2011 and ratified it in October 2012.
- The ratification by India was done at the 11th Conference of Parties (COP) to the CBD, which was conducted in Hyderabad.
- Members are required under the protocol to implement procedures pertaining to compliance, benefit sharing, and access to genetic resources.

6. Security issues

6.1 Challenges to secure India's Land Borders

India's significant border challenge is that it has contested borders with Pakistan and China and both of them have a strategic nexus directed against India.

About India's borders:
- India's borders are unique due to the variety of terrains through which these borders pass, namely deserts, mountains, glaciers and forests.
- It is obvious that managing such large borders in diverse terrain conditions poses myriad challenges.

India shares borders with the countries as follows:
- Bangladesh: 70 kms running along West Bengal, Assam, Meghalaya, Tripura and Mizoram.
- Pakistan: 3323 kms running along Gujarat, Rajasthan, Punjab, Union Territory of Jammu & Kashmir and Union Territory of Ladakh.
- China: 3488 kms running along Arunachal Pradesh, Sikkim, Uttarakhand, Himachal Pradesh and Union Territory of Ladakh.
- Nepal: 1751 kms running along Uttarakhand, Uttar Pradesh, Bihar, West Bengal and Sikkim.
- Bhutan: 699 kms running along Sikkim, West Bengal, Assam and Arunachal Pradesh.
- Myanmar: 1643 kms running along Arunachal Pradesh, Nagaland, Manipur and Mizoram.
- Afghanistan: 106 kms running along Union Territory of Ladakh

India's Border disputes
With Pakistan:
On the borders:
- Barely two months after Independence, Pakistani fighters invaded Jammu and Kashmir, leading to the first of four wars the two countries have since fought.
- The Kashmir region is often dubbed as one of the most militarized places in the world.
- POK is Pakistan Occupied Kashmir which refers to the region in Kashmir which is under control of Pakistan.

Issue of Drugs:
- Drugs smuggling from Pakistan is another major challenge for our paramilitary forces and state police.
- Punjab, a strategic border state, has been the target of drug smuggling for many years now.

Terrorism:
- Terrorism emanating from territories under Pakistan's control remains a core concern in bilateral relations.

With China:
- It is along the LAC with China that India faces the toughest border challenge.
- India has disputed borders with China in Ladakh, Middle Sector, and in Arunachal Pradesh.
- Despite many levels of talks, very little progress has been made to resolve the dispute.
- China is using the dispute against India, whom it sees as its competitor in Asia, to moderate its strategic behaviour and advance its national goals and aspirations.

China-Pakistan Economic Corridor (CPEC):
- The CPEC is a collection of infrastructure projects that have been under construction throughout Pakistan beginning 2013.
- The CPEC is part of China's larger Belt and Road Initiative.
- India has protested the project from its inception since it passes through large chunks of Pakistan-occupied Kashmir.

India-Nepal and India- Bhutan Border Management Challenges
- The region is comparatively peaceful and the matters of security in the region are handled by the SSB (Sashastra Seema Bal).
- However, peaceful and open borders come with several challenges.
- Both Nepal and Bhutan are landlocked. The border posts with India serve as their entry point for essential supplies.
- Any use of force can seriously hamper bilateral relations.
- The disputed areas with Nepal involve the Kalapani and the Susta regions.

India-Bangladesh Border Management Challenges
- The 1971 war separated the east Pakistan region and resulted in the creation of Bangladesh.
- The region is manned by the Border Security Force.
- This border faces a severe refugee crisis.
- The influx of Rohingya minorities from West Bengal is a cause of concern.
- Malaria is another concern that the on-ground troops face.
- The marshy swamps are nearly inhospitable and infested with anopheles' mosquitoes.
- Further, the rugged topography and the constantly shifting course of the river Brahmaputra create security concerns.
- Cattle smuggling has also been rampant along the border, there were instances when security forces had to use legitimate force to cool off the situation and apprehend the culprits.
- India's chicken neck corridor at Siliguri in west Bengal acts as the only source of connectivity between mainland India and the Northeastern region through the land.
- This narrow strip of land is thus strategically important and hence security forces have to deploy a considerable amount of force to ensure the security of the region.

India's strategy to tackle its border disputes
Deployment of troops & surveillance:
- The Indian Army and the BSF are deployed in multiple layers to form an anti-infiltration grid.
- The border fence and deployment of other surveillance devices has helped in reducing infiltrations.
- The surgical strikes launched by our armed forces in the wake of terrorist attacks supported by Pakistan's

ISI have succeeded in sending the message of firm resolve to deal with the menace of terrorism and proxy wars.
- Construction activities: As part of the strategy to secure the borders as also to create infrastructure in the border areas of the country, several initiatives have been undertaken by the Border Management Division. These include:
- Construction of fence, floodlighting, roads, Border Out Posts (BOPs), Company Operating Bases (COBs) and
- Deployment of technological solutions along the India-Pakistan, India-Bangladesh, India-China, India-Nepal, India-Bhutan and India-Myanmar borders.

Other:
- Projects like Trans-Arunachal Highway will help in mounting an effective and speedy response against an aggression by the China.
- The Border Roads Organisation (BRO) completed more than 100 projects in border areas, the majority of which were close to the border with China.
- India is speeding up work on the Nimu-Padam-Darcha axis which is going to help troops move to Ladakh from other parts of the country.
- However, this will take time; until then we have to be prepared to deal with its aggression along LAC in an 'Armed Coexistence' scenario.

Need for northeast settle disputes:
- The maximum area of the Northeast is surrounded by countries like China, Myanmar, Bangladesh, from which India has a dispute.
- India is connected to the northeast by the Siliguri corridor, a very narrow area.
- Thus, North East including Siliguri is a very strategic region for India. Therefore maintaining peace is very important aspect in the region.
- The people of the Northeast are extremely isolated and backward from pre- independence.
- After independence, disputes need to be resolved to reduce the trust deficit of the people there, to develop and establish peace there.
- It is essential to achieve the true essence of fraternity described in the Constitution of India.
- Peace in the North-East will save India's resources which can be used for international border management and welfare projects.

Recommendations For better border management:
- The principle of 'Single Point Control' Or "One-Force-One-Border" principle must be followed if the borders are to be effectively managed. Divided responsibilities never result in effective control
- The advances in surveillance technology, can help to maintain a constant vigil along the LAC and make it possible to reduce physical deployment as and when modern surveillance assets can be provided on a regular basis to the formations deployed forward.
- Similarly, the availability of a larger number of helicopter units will enhance the quality of aerial surveillance and the ability to move troops to quickly occupy defensive positions when it becomes necessary.
- The recent nomination of the Central Reserve Police Force (CRPF) as the national-level counterinsurgency force should enable the other central para-military forces (CPMFs) like BSF and ITBP to return to their primary role of better border management.
- It is also recommended that all Para-military forces managing unsettled borders should operate directly under the control of the army.
- There should be lateral induction from the army to the para-military forces so as to enhance their operational effectiveness.
- External threats to India's security are not the only border management issue dealt with at present by the national security apparatus.
- In recent past, India's rate of growth has far outpaced that of most of its neighbors and this has generated problems like mass migrations into India.

Way Forward:
- Government should resolve pending border disputes with the neighboring countries, as they later become matters of national-security threat. The border-guarding force should not be distracted from its principal task and deployed for other internal security duties. For example ITBP, a force specifically trained for India- China border should not be used in the Naxalite-infested areas.
- It is felt that the responsibility for unsettled and disputed borders, such as the LoC in J&K and the LAC on the Indo-Tibetan border, should be that of the Indian Army while the BSF should be responsible for all settled borders. Developing Infrastructure-accelerated development of infrastructure along the border, especially to wean the border population from illegal activities.

6.2 Left Wing Extremism

Recently, the Union Home Minister stated that the ministry is determined to destroy the entire ecosystem of Left-Wing Extremism (LWE) by "financial choking".

According to the Union Home Minister, for the first time in four decades, the number of deaths of civilians and security forces in Left Wing Extremism (LWE) came down to under 100 in 2022.
Left Wing Extremism had come down by 76% in 2022 as compared to 2010.

About Left-wing Extremism (LWE) in India:
- Left-wing extremists, popularly known as Maoists worldwide and as Naxalites/Naxalism in India, has been a major threat to India since the 1960s.
- The term Naxalism derives from the name of the Naxalbari village in West Bengal where a peasant revolt took place against local landlords over a land dispute in 1967.
- The origins of Left Wing Extremism (LWE) in India goes back to the Telangana peasant rebellion (1946-51), the movement was at its peak in 1967, when the peasants, landless labourers, and Adivasis raided the granaries of a landlord in the Naxalbari village in West Bengal.

Red Corridor:
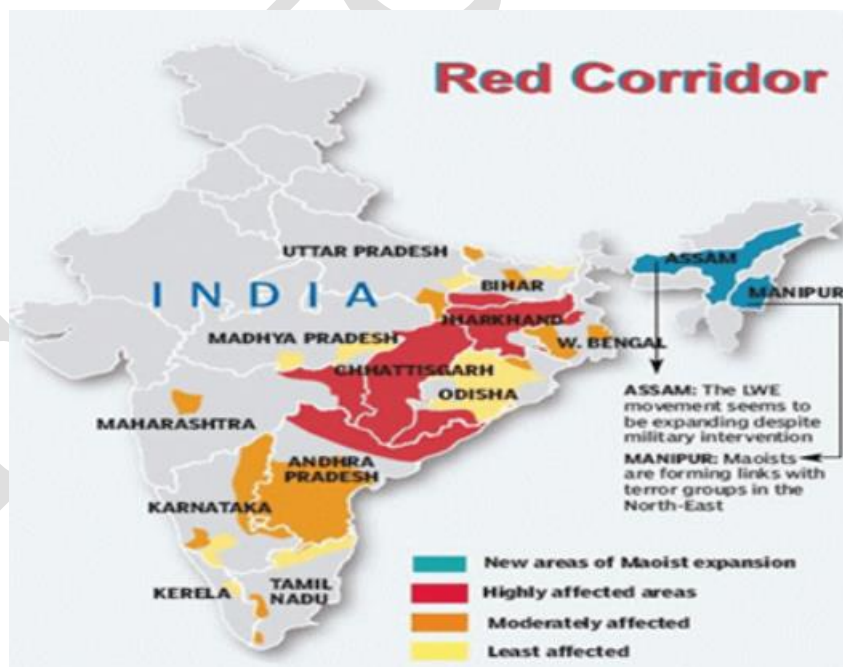
- The influence zone of LWE in India is called the Red corridor, which has been steadily declining in terms of geographical coverage and number of violent incidents.

States data:
- In 2021, Chhattisgarh accounted for 90 percent (45 out of 50) of all security personnel deaths in the country.
- Jharkhand is the only state that recorded security personnel deaths (5) besides Chhattisgarh in 2021.
- In 2019, when 52 security force personnel deaths were recorded in the country, Chhattisgarh accounted for just 42 percent (22) of those with Maharashtra accounting for 16 deaths and Jharkhand for 12 deaths.
- Other states for which data has been provided by the government are Bihar, Odisha and Telangana.
- All recorded zero deaths in 2021.
- In 2022, Odisha recorded three deaths while Jharkhand recorded two.

Reasons for Left Wing Extremism:
Tribal discontent:
- The Forest (Conservation) Act, 1980 deprives tribals, who depend on forest produce for their living, from even cutting a bark.
- Massive displacement of tribal population in the naxalism-affected states due to development projects, mining operations and other reasons.

No Follow-Up from administration:
- It is seen that even after police takes hold of a region, administration fails to provide essential services to the people of that region.
- Confusion over tackling naxalism as a social issue or as a security threat.
- State governments considering naxalism as the central government's issue and thus are not taking any initiatives to fight it.

Lack of Livelihood:
- People who do not have any source of living are taken into Naxalism by Maoists.
- Maoists provide arms and ammunition and money to such people.

Governance related issues:
- Government measures its success on the basis of the number of violent attacks rather than the development done in the Naxal-affected areas.
- Absence of strong technical intelligence to fight with Naxalites.
- Infrastructural problems, for instance, some villages are not yet connected properly with any communication network.

Reasons for decline in violence:
- Greater presence of security forces across the LWE affected States.
- Loss of leaders on account of arrests, surrender and desertions.
- Rehabilitation programs by the governments.
- Better monitoring and shortage of funds and arms.
- Intelligence sharing and raising of a separate 66 Indian Reserve Battalion (IRBs), CRPF battalions like COBRA battalion, Bastariya battalion etc were done by the government to curb the menace of LWE organisations.

Government Initiatives to Fight LWE:
- Operation Green Hunt: It was started in 2009-10 and massive deployment of security forces was done in the Naxal-affected areas
- Aspirational Districts Programme: Launched in 2018, it aims to rapidly transform the districts that have shown relatively lesser progress in key social areas.
- SAMADHAN doctrine is the one-stop solution for the LWE problem. It encompasses the entire strategy of government from short-term policy to long-term policy formulated at different levels. SAMADHAN stands for-

- S- Smart Leadership,
- Aggressive Strategy,
- M- Motivation and Training,
- Actionable Intelligence,
- D- Dashboard Based KPIs (Key Performance Indicators) and KRAs (Key Result Areas),
- H- Harnessing Technology,
- Action plan for each Theatre,
- N- No access to Financing.
- ROSHNI is a special initiative under, Pandit Deen Dayal Upadhyaya Grameen Kaushalya Yojana (Formerly Ajeevika Skills), launched in June 2013 for training and placement of rural poor youth from 27 LWE affected districts in 09 States.
- Road Connectivity: Construction of 17,462 km of roadways had been sanctioned to improve road connectivity, of which work on about 11,811 km had been completed.
- Mobile connectivity: For better mobile connectivity, 2,343 mobile towers had been installed in the first phase during the last eight years, and approval given to upgrade them to 4G. This apart, 2,542 new mobile towers were being installed in the second phase.
- Eklavya Residential Model School: More than 100 Eklavya Residential Model Schools were sanctioned in 21 years prior to 2019, while in the past three years, 103 have been sanctioned.
- So far, 245 Eklavya schools had been sanctioned in 90 LWE-affected districts and 121 of them were now functional.
- Banks, ATMs and Post offices for financial inclusion:
- The government also facilitated the opening of 1,258 bank branches and 1,348 ATMs in the worst hit districts, besides 4,903 post offices.

Way Forward:
- Innovative measures are required to be employed in preventing IED(Improvised Explosive Device) related incidents which have caused significant casualties in recent years.
- Emphasis should be laid on the capacity-building and modernization of the local police forces.
- States should rationalize their surrender policy in order to bring innocent individuals caught in the trap of LWE in the mainstream.
- States also need to adopt a focused time-bound approach to completely eliminate LWE groups and ensure all-round development of the affected regions.
- What makes the LWE particularly disturbing is its correlation with the demographic youth bulge in the general Indian population.
- If the Indian state fails, the widespread unemployment could lead to a serious internal security situation.
- The Centre and the States should make efforts in synchronise that are crucial in eliminating such radicalization amongst groups.

6.3 DUSTLIK

The 4th INDO-UZBEKISTAN joint military exercise 'DUSTLIK' commenced in Pithoragarh (Uttarakhand) recently.

About DUSTLIK :
- It is a biennial training exercise held between the armies of India and Uzbekistan.
- The first edition of the joint military exercise took place in Tashkent, Uzbekistan in 2019.
- The exercise focuses on Counter Terrorism operations in semi-urban terrain under a United Nations Mandate.

About Uzbekistan:
- Uzbekistan is a landlocked country in Central Asia.
- The capital of Uzbekistan is Tashkent.

- Uzbekistan lies mainly between two major rivers, the Syr Darya to the northeast and the Amu Darya to the southwest.
- Uzbekistan is bordered by 5 Asian nations namely: Kazakhstan, Kyrgyzstanand Tajikistan, Afghanistan, and Turkmenistan.

7. Social Issues

7.1 Child Marriage in India

Activists working on ground suggest that the COVID-19 pandemic combined with poverty may have worsened the phenomenon of child marriage in India.

About Child marriage:
- Child marriage can be described as a formal marriage or an informal union entered into by an individual before attaining the prescribed eligible age.
- The legally prescribed marriageable age in some jurisdictions is below 18 years, including India.

Child marriage in India:
- Child marriage prevalence is generally defined as the percentage of women 20-24 years old who were married or in union before age 18.
- India is estimated to have over 24 million child brides.
- According to the National Family Health Survey, 40% of the world's 60 million child marriages take place in India.
- According to the International Centre for Research on Women, India has the 14th highest rate of child marriage in the world,
- Eight States have a higher prevalence of child marriage than the national average —
- West Bengal, Bihar and Tripura top the list with more than 40% of women aged 20-24 years married below 18, according to NFHS data.
- In Kerala, women who got married before the age of 18 stood at 6.3% in 2019-20, from 7.6% in 2015-16.

Reasons for child marriage in India:
- Customs and Traditions: Traditions like dowry put a lot of stress on the family because the parents have to give a lot of money, jewellery, land etc. for their daughter to get married.
- Generally the amount of dowry rises with age of the girl, so families prefer to marry their girls young.
- Poverty: Poor Families 'sell' their children through marriage to pay off debts or to get out of the cycle of poverty.
- Child marriage makes families poorer because young girls who get married won't be educated or skilled enough to do well in the workforce.
- "Protecting" the Girl's Sexuality: In some cultures, marrying a girl young is thought to "protect" the girl's sexuality and the family's honour.
- Security: Parents often marry their daughters off young to "secure" a good future for them.
- Abuse, rape, and other crimes against girls, as well as extreme poverty, can make parents turn to child marriage as a way to protect their daughters.
- Laxity in Implementation of Laws: Laws are not implemented stringently. In many cases the ages of the bride and groom aren't checked at the time of registration of marriage.
- Many child marriages aren't even registered.
- Discrimination based on gender: Child marriage is a manifestation of discrimination against girls and women.
- According to a UNICEF report on 'Child Marriage and the Law', "The discrimination often manifests itself in the form of domestic violence, marital rape, and deprivation of food, lack of access to information, education, healthcare, and general impediments to mobility".

Harmful impacts of Child Marriage:
Child Rights Issues:
- Children who are forced to get married young lose their rights including the right to an education, the right to be safe from physical and mental violence, injury, or abuse, among others.

Health Issues:
- According to NFHS-5, prevalence of child stunting is 35.5% in 2019-21.
- Premature Pregnancy: Most young brides don't know much about contraception and don't have easy access to reproductive health services.
- They get pregnant at a younger age and have more than one child before their mind and bodies are ready.
- Maternal Mortality: Girls under 15 are five times more likely to die during childbirth or pregnancy. The leading cause of death for girls ages 15 to 19 around the world is pregnancy-related deaths.
- Infant Mortality: Babies born to mothers younger than 20 have almost 75% higher death rates than babies born to mothers older than 20 years. The children who do make it are more likely to be born pre-mature and with a low birth weight.

Illiteracy:
- Child brides are often taken out of school and not allowed to get further education.
- Research shows that child marriage and pregnancy are the biggest factors that keep girls from going to school.

Intergenerational Cycle of Poverty:
- Child marriage negatively affects the economy and can lead to an intergenerational cycle of poverty.
- Girls and boys married as children more likely lack the skills, knowledge and job prospects needed to lift their families out of poverty.
- Early marriage leads girls to have children earlier and more children over their lifetime, increasing economic burden on the household.

Teen Widows:
- In a society that allows child marriages, it is not unusual to find widows and divorcees under the age of 18.

Laws and Policies to prevent child marriages:
- The Child Marriage Restraint Act of 1929: It is also known as the Sarda Act. It was a law enacted to restrain the practices of Child Marriage.
- Its main goal was to eliminate the evils placed on young girls who could not handle the stress of married life and to avoid early deaths.
- This act defined a male child as 21 years or younger and a female child as 18 years or younger.
- The Prohibition of Child Marriage Act of 2006: Under this act, the marriageable age for a male is prescribed as 21 years and that of a female is 18 years.
- Child Marriage is prohibited in India as per the Prohibition of Child Marriage Act, 2006.
- Hindu Marriage Act, 1956: Under Hindu Marriage Act, there are no certain provisions for punishing the parents or people who solemnized the marriage.
- A girl can get the marriage annulled only if she wants to get married before attaining the age of fifteen years and she challenges the marriage before turning eighteen.
- Muslim Personal Law: Under the Muslim Laws, there is no bar to child marriage. The couple after marriage has an "option of puberty" known as Khayar-ul-bulugh in which they can repudiate the marriage after attaining the age of puberty.
- The Protection of Children from Sexual Offences Act, 2012: which aim at protecting children from violation of human and other rights.
- A parliamentary standing committee is weighing the pros and cons of raising the age of marriage for women to 21, which has been cleared by the Union Cabinet.

Way forward:
- The solution lies in empowering girls, creating proper public infrastructure and addressing societal norms.
- It should be ensured that Child Protection Committees and Child Marriage Prohibition officers are doing the job and community support groups should be activated.
- Such efforts can lead to Child Marriage Free Villages like in Odisha which now has over 12,000 such villages.
- Local gram panchayat members should be oriented to spread awareness on child marriage, not only that it is illegal to get a child married off before 18, but also the dangers to the child's health and her offspring.
- There has been a rise in child marriages during the pandemic, but many have been prevented as well.

7.2 OBC Subcategorization

The Justice G. Rohini-led commission for the sub-categorisation of other backward classes (OBCs) has now been given yet another extension in its tenure by the President
This is the 14th extension in tenure that the commission has been given.

About the commission
- The commission was formed in October 2017
- It was initially given 12 weeks to finish the task of sub-categorising the nearly 3,000 castes within the OBC umbrella and recommend division of the 27% OBC quota among them equitably
- As part of its work, the commission had identified dominant caste groups among all OBC communities in the Central list, finding that a small group of dominant OBC communities were crowding out a large number of communities from the 27% OBC quota.
- Consequently, the commission decided to divide all OBC communities into four broad categories, with the largest share of the quota pie going to the group that has historically been deprived of OBC quota as a result of being pushed out by dominant OBC groups.

Commission's terms of reference:
- To examine the extent of inequitable distribution of benefits of reservation among the castes or communities included in the broad category of OBCs with reference to such classes included in the Central List.
- To work out the mechanism, criteria, norms and parameters in a scientific approach for sub-categorisation within such OBCs.
- To take up the exercise of identifying the respective castes or communities or sub-castes or synonyms in the Central List of OBCs and classifying them into their respective sub-categories. A fourth term of reference was added on January 22, 2020.
- To study the various entries in the Central List of OBCs and recommend correction of any repetitions, ambiguities, inconsistencies and errors of spelling or transcription.

What is sub-categorisation of OBCs?
- The idea is to create sub-categories within the larger group of OBCs for the purpose of reservation.
- OBCs are granted 27% reservation in jobs and education under the central government, this has been a legal debate for other reservation categories too
- In 2022, a Constitution Bench of the Supreme Court reopened the debate on sub-categorisation of Scheduled Castes and Scheduled Tribes for reservations.
- For OBCs, the debate arises out of the perception that only a few affluent communities among the over 2,600 included in the Central List of OBCs have secured a major part of the 27% reservation.
- The argument for creating sub-categories within OBCs is that it would ensure "equitable distribution" of representation among all OBC communities.
- It was to examine this that the Rohini Commission was constituted on October 2, 2017

Need for subcategorization
- Due to inequalities and further inequalities within unequal entities.
- Reservation in jobs and education did address socio-economic disparities in India to some degree, but, the benefits of reservation have not been distributed equitably
- Large segments of the weaker sections and backward classes continue to have no access to quality education or meaningful employment.
- The relatively rich and dominant sections among the backward castes have tended to take up a disproportionately larger share of the reservation pie.
- Failure in effectively preventing large sections of the creamy layer from taking advantage of the quota system to the detriment of the poorer sections among their own caste groups.
- To ensure a more equitable distribution of reservation benefits by further differentiating caste groups coming under backward classes on the basis of their levels of social and economic backwardness.
- Lacunae in categorisation of the creamy layer led to the need to differentiate among the caste groups.
- Vote-bank politics has caused prioritising of caste-based categorisation over income-based differentiation to identify reservation beneficiaries.
- The reservation pie is limited, and no group, whether rich or poor, dominant or subservient, can hope to gain except at the expense of another socio-economic category.
- Findings of the commission

CENTRAL GOVT EMPLOYEES BY SOCIAL CATEGORY

	TOTAL	SC	ST	OBC	EWS	OTHERS
Group-A	50,068	6,440 (12.86%)	2,826 (5.64%)	8,455 (16.88%)	11 (0.02%)	32,226 (64.58%)
Group-B	1,25,732	20,954 (16.66%)	8,244 (6.55%)	19,829 (15.77%)	5 (0.04%)	76,700 (61.0%)
Group-C (excluding safai karmacharis)	3,22,503	58,744 (18.22%)	22,296 (6.91%)	72,710 (22.54%)	84 (0.03%)	1,68,639 (52.29%)
Group-D (safai karmacharis)	13,722	4,507 (32.72%)	1,056 (7.66%)	2,774 (20.14%)	0	5,435 (39.46%)
TOTAL	5,12,075	90,675 (17.70%)	34,422 (6.72%)	1,03,768 (20.26%)	100 (0.02%)	2,83,110 (55.28%)

- In 2018, the Commission analysed the data of 1.3 lakh central jobs given under OBC quota over the preceding five years and OBC admissions to central higher education institutions, including universities, IITs, NITs, IIMs and AIIMS, over the preceding three years.
- The findings were: 97% of all jobs and educational seats have gone to just 25% of all sub-castes classified as OBCs; 24.95% of these jobs and seats gone to just 10 OBC communities; 983 OBC communities — 37% of the total — have zero representation in jobs and educational institutions; 994 OBC sub-castes have a total representation of only 2.68% in recruitment and admissions.
- Total number of Group A to Group C employees (including safai karmacharis) was 5.12 lakh – Of these, 17.70% are SC, 6.72% ST, 20.26% OBC (Other Backward Classes), and 0.02% EWS (Economically Weaker Sections).
- In Group-A, the highest tier among these, the representation of SCs is just 12.86%, of STs 5.64% and of OBCs 16.88%. Reservation for these communities is 15%, 7.5% and 27% respectively.

Challenges
- Disruptions caused by COVID-19 pandemic.
- Different states census underway – Bihar government is in the middle of its caste-based survey in the State and the Uttar Pradesh government is in the process of conducting a fresh survey to assess the need for OBC reservation in its local body elections, with other States like Madhya Pradesh and Maharashtra also looking to form panels to implement OBC reservation in local body polls.
- Government lacks information for data enumeration of OBC
- Data from 2011 Socio-Economic Caste Census were never made public.

- Enumeration of OBC data is administratively complex and the information lacks completeness and accuracy since the State and Central list of OBCs are distinct.
- It may lead to breach of apex court's 50-per-cent ceiling, since many communities have sought separate reservations at the State and Central levels across India.

Way forward
- According to 2018 data, just ten OBC communities have taken the 25 per cent of reserved central jobs and institutional seats. Also, 97 per cent of the reserved jobs and seats have gone to 25 per cent of OBC sub-castes.
- Hence, there is a need to re-establish equity and the task has been handed over to Rohini Commission
- Once completed, the report by Justice G Rohini commission is also likely to undergo judicial review