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1. Polity and Governance

1.1 Special Marriage Act (SMA)

The Supreme Court dismissed a writ petition challenging provisions of the Special Marriage Act (SMA), 1954 requiring couples to give a notice declaring their intent to marry 30 days before their marriage.

What does the petition seek?

- The Supreme Court dismissed a writ petition challenging the Constitutional validity of certain provisions of the SMA under which couples seek refuge for inter-faith and inter-caste marriages.
- The writ petition has called these provisions violative of the right to privacy guaranteed under Article 21 of the Constitution.
- The writ petition also said that the provisions contravene Article 14 on prohibition of discrimination on grounds of religion, race, caste and sex as well as Article 15 on right to equality as these requirements are absent in personal laws.

Controversial Sections

- Section 5 of the SMA requires a person marrying under this law to give a notice of intended marriage.
- Section 6(2) says it should be affixed at a conspicuous place at the office of the marriage officer.
- Section 7(1) allows any person to object to the marriage within 30 days of the publication of the notice, failing which a marriage can be solemnised under Section 7(2).
- Due to these provisions breaching personal liberties, several inter-faith couples approached the Court, challenging Sections 6 and 7 of the Act.

How do these provisions make couples vulnerable?

- These public notices have been used by anti-social elements to harass couples getting married.
- For instance, in Athira's case, who got married in 2019 under SMA, her marriage notice containing her address was circulated on Social media calling on people to visit her parents and make them "aware" about her marriage.
- There have been instances, where marriage officers have gone over and beyond the law and sent such notices to the parents.
- The Haryana government has laid down 16 pre-requisites which ask couples to issue a notice in a newspaper and that such notices be sent to their parents.
- In certain States, couples have to seek a no-objection certificate from their parents.
- With as many as 11 States passing anti-conversion (or so called love-jihad) laws, parents and the State are now armed to punish and harass such couples.

The Special Marriage Act (SMA), 1954

- It is the legislation made to validate and register interreligious and inter-caste marriages in India.
- It allows two individuals to solemnise their marriage through a civil contract.
- No religious formalities are needed to be carried out under the Act.
- This Act includes Hindus, Muslims, Christians, Sikhs, Jains, and Buddhists marriages.
- This Act applies not only to Indian citizens who belong to different castes and religions but also to Indian nationals who live abroad.

1.2 New Naval Ensign

Prime Minister of India unveiled the new Naval Ensign (flag) at Kochi, which bears the seal of Chhatrapati Shivaji Maharaj, who laid the foundations of a modern navy.

How does the Indian Navy identify with Shivaji (reign 1674-80) and the great Maratha admiral Kanhoji Angre (1669-1729), and how did they ensure Maratha supremacy of the seas?

Shivaji and the seas

- Chhatrapati Shivaji Maharaj put great emphasis on sea-faring prowess, and laid the foundations of a modern naval force in the 17th century.
- The Indian Navy has named a training establishment in Lonavla as INS Shivaji and a shore based logistics and administrative hub of Western Naval Command as INS Angre after Kanhoji Angre, the acclaimed Maratha naval commander.
- The use of the octagonal design of the seal of Shivaji on the new Naval Ensign is a formal stamp on the umbilical ties of the Indian Navy with the navy of the Maratha empire.

Extent of naval prowess

- Shivaji's strategic thought ensured that a strong naval presence was established along the Konkan coast to protect the sea trade of the Maratha empire.
- The navy under Shivaji was so strong that the Marathas could hold their against the British, Portuguese and Dutch.
- Shivaji built ships in towns such as Kalyan, Bhivandi, and Goa, both for trade and to establish a fighting navy.
- He also built a number of sea forts and bases for repair, storage and shelter. Shivaji fought many lengthy battles with Siddis of Janjira on coastline.
- He started trading with foreigners on his own after possession of eight or nine ports in the Deccan.

Kanhoji Angre

- Kanhoji Angre was the commander of Maratha navy, and is credited with laying a strong naval foundation which ensured that the Marathas were a sea-faring power to reckon with.
- Kanhoji is credited with holding his own against the English, Portuguese and Dutch naval forces.
- He ensured that the merchants plying their trade for the Maratha empire were protected on the seas.
- He set up a base in Colaba with more bases at Suvarndurg and Vijaydurg near Ratnagiri.

Siddis of Janjira

- Janjira State was a princely state in India during the British Raj.
- Its rulers were a Siddi dynasty of Habesha descent and the state was under the suzerainty of the Bombay Presidency.
- Janjira State was located on the Konkan coast in the present-day Raigad district of Maharashtra.

1.3 Bail for women

- The Supreme Court allowed activist Teesta Setalvad interim bail in a case of alleged forgery and fabrication of records in connection with the 2002 Gujarat riots cases.
- A three-judge Special Bench led by Chief Justice of India said a case of interim bail is "evidently made out" on consideration of the facts that she is a woman who has already undergone seven days of custodial interrogation.
- CJI made an oral observation that under Section 437 of the Code of Criminal Procedure (CrPC), a woman is entitled to favourable treatment.

What does the bail provision say?

- Section 437 of the CrPC deals with bail in case of non-bailable offences.
- It says a person shall not be released on bail if there is reasonable ground to believe that he has committed an offence punishable with death or life imprisonment; or, if he has been previously been

convicted for an offence punishable with death, life imprisonment, or for a term of seven years or more; or been convicted on two or more occasions on other offences with a term between three and seven years.

- However, it also contains exceptions in a proviso that says the court may grant bail even in these cases, “if such person is under the age of 16 or is a woman or is sick or infirm”.

Are there other provisions favourable to women accused?

- There are several provisions in criminal law that give special consideration to women, of any age, when they are victims of offences, including sexual offences, in the way they are treated as witnesses and victims of crimes.
- There are also some provisions relating to women when they are made an accused, and arrested.
- For instance, when a police officer requires the attendance of any person who he believes is acquainted with a case under investigation, the person has to appear before the officer (Section 160).
- However, no woman shall be required to do so at any place other than the place in which she resides. This is understood to mean that the officer has to visit the place of residence to make enquiries.

What does the CrPC say on the arrest of a woman?

- A police officer may arrest a person who has committed a cognisable offence without a judicial order or a warrant (Section 41).
- If the person does not submit to custody based on the word or action of the police, Section 46 enables the police officer to confine the person physically to effect the arrest.
- A proviso was introduced in the CrPC in 2009 to the effect that where a woman is to be arrested, only a female police officer may touch the woman’s person, unless circumstances otherwise require.
- Through a 2005 amendment, a subsection was added to Section 46 to prohibit the arrest of a woman after sunset or before sunrise.
- In exceptional circumstances, a woman police officer can obtain the prior permission of a judicial magistrate to make the arrest.

What does it say on women who don’t appear in public?

- The police may seek entry into any premises where they suspect that a person who is required to be arrested is present.
- In a situation where any such place is an apartment in the occupancy of a female (who is not the person to be arrested) and if the woman is one who, by custom, does not appear in public, the police have to give notice to her so that she may withdraw before they enter it.
- It adds that they shall afford her every reasonable facility for withdrawing before they break open and enter the place.
- In yet another exception, a woman who intends to file a defamation case, but is one who does not appear in public according to custom, can ask someone else to file the complaint on her behalf.

1.4 National Legal Services Authority (NALSA)

- Justice D.Y. Chandrachud has been appointed as the executive chairman of National Legal Services Authority (NALSA)
- Justice Chandrachud takes up the position that became vacant after Justice U.U. Lalit was elevated as the 49th Chief Justice of India (CJI).

The NALSA

- Constituted under the Legal Services Authorities Act, 1987.
- Objective: To provide free Legal Services to the weaker sections of the society and to organize Lok Adalats for amicable settlement of disputes.
- While the CJI 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.
- Organise 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.

What are Legal Services Institutions at Various Levels?

- National Level: NALSA was constituted under the Legal Services Authorities Act, 1987.
- State Level: State Legal Services Authority. It is headed by the Chief Justice of the State High Court who is its Patron-in-Chief.
- District Level: District Legal Services Authority. The District Judge of the District is its ex-officio Chairman.
- Taluka/Sub-Division Level: Taluka/ Sub-Divisional Legal Services Committee. It is headed by a senior Civil Judge.
- High Court: High Court Legal Services Committee
- Supreme Court: Supreme Court Legal Services Committee

Who is Eligible for Getting Free Legal Services?

- Women and children
- Members of SC/ST
- Industrial workmen
- Victims of mass disaster, violence, flood, drought, earthquake, industrial disaster.
- Disabled persons
- Persons in custody
- Those persons who have annual income of less than the amount prescribed by the respective State Government, if the case is before any court other than the Supreme Court, and less than Rs. 5 Lakhs, if the case is before the Supreme Court.
- Victims of Trafficking in Human beings or begar.

1.5 Contempt of court

Attorney General of India has declined a request for consent to initiate criminal contempt of court proceedings against Senior Advocate and Member of Parliament Kapil Sibal for certain remarks that he made during a speech on the subject of "Judicial Rollback of Civil Liberties.

What is contempt of court?

- Around the world, “contempt of court”, or simply “contempt”, is understood as a set of legal provisions that firewall courts, and safeguard and protect their ability to dispense justice.
- According to The Contempt of Courts Act, 1971, contempt of court can either be civil contempt or criminal contempt.
- Civil contempt means “wilful disobedience to any judgment, decree, direction, order, writ or other process of a court, or wilful breach of an undertaking given to a court”.
- Criminal contempt, is attracted by “the publication (whether by words, spoken or written, or by signs, or by visible representations, or otherwise) of any matter or the doing of any other act whatsoever which:
- scandalises or tends to scandalise, or lowers or tends to lower the authority of, any court; or prejudices, or interferes or tends to interfere with, the due course of any judicial proceeding; or interferes or tends to interfere with, or obstructs or tends to obstruct, the administration of justice in any other manner.

Who can bring a charge of criminal contempt of court against an individual?

- The Contempt of Courts Act, 1971, lays down the law on contempt of court.
- Section 15 of the legislation describes the procedure on how a case for contempt of court can be initiated.
- In the case of the Supreme Court, the Attorney General or the Solicitor General, and in the case of High Courts, the Advocate General, may bring in a motion before the court for initiating a case of criminal contempt.
- However, the motion can be brought by a private citizen as well — and in such a case, the consent of the Attorney General (or the Advocate General, as the case may be,) is required.
- The motion or reference made for initiating the case will have to specify the contempt of which the person charged is alleged to be guilty.

But what is the reason that the consent of the A-G is required?

- The objective behind requiring the consent of the A-G before taking cognizance of a complaint is to save the time of the court.
- The A-G’s consent is meant to be a safeguard against frivolous petitions, as it is deemed that the A-G, as an officer of the court, will independently ascertain whether the complaint is indeed valid.

What if a court itself decides to bring a case of contempt?

- In such a situation, the A-G’s consent is not required.
- This is because the court is exercising its inherent powers under the Constitution to punish for contempt, and such Constitutional powers cannot be restricted because the A-G declined to grant consent.

And what happens if the A-G denies consent (in the case of a private citizen)?

- If the A-G denies consent, the matter all but ends.
- The law also has a limitation period of one year for bringing in action against an individual.
- The complainant can, however, separately bring the issue to the notice of the court and urge the court to take suo motu (on its own motion) cognizance.
- Article 129 of the Constitution gives the Supreme Court the power to initiate contempt cases on its own, independent of the motion brought before it by the AG or with the consent of the AG.

What is the process if the A-G does grant consent?

- Once the A-G gives his consent in writing, a notice under The Contempt of Courts Act is served personally on the person against whom the proceedings are sought to be initiated by the court.
- If the court decides not to serve the notice personally, the law requires the court to record the reasons for it.
- If the court is satisfied that the alleged contemnor is likely to abscond or evade judicial proceedings, it can

order attachment of property of a value that it deems reasonable.

- The alleged contemnor may file an affidavit in support of his defence, explaining the nature and circumstances of his/her remarks.
- The case is required under the Act to be heard by a Bench of at least two judges.

1.6 Basic structure of the Constitution

Recently, a bench of five judges of the Supreme Court has been constituted so as to determine whether the Constitution 103rd Amendment Act, 2019 violates the “basic structure of the Constitution”.

Doctrine of Basic Structure:

- The doctrine states that no amendment to the Constitution is permissible if it alters “the basic structure or framework of the Constitution”.
- It was developed by the Supreme Court of India in a series of constitutional law cases in the 1960s and 1970s that culminated in *Kesavananda Bharati v. State of Kerala* in 1973 where the doctrine was formally adopted.
- The doctrine thus forms the basis of the power of the Supreme Court of India to review and strike down constitutional amendments and acts enacted by the Parliament which conflict with or seek to alter this “basic structure” of the Constitution.
- The basic structure is a tool or judicial innovation to ensure that the legislature does not abuse the power given to it in Article 368.

Components of the Doctrine:

- The doctrine has not been specifically defined but the various court judgements have helped in formulating a scope of the same and it includes the following:

Significance:

- It has been applied to discover the intent of the constitution makers in framing the constitutional provisions, as in the case of *Indira Gandhi v. Raj Narain*.
- The basic structure doctrine constitutes a high watermark in the assertion of the Supreme Court’s judicial power in the teeth of a determined majoritarian regime.
- It protects the fundamental rights of the citizens against arbitrariness and authoritarianism of the legislature.
- It strengthens the cause of democracy and maintains the sanctity of the vision of our founding fathers.

Challenges:

- Fundamentally, it is inconsistent with the principle of separation of powers – By propounding the basic structure theory, the guardians of the Constitution had at one bound become guardians over the Constitution. In other words, constitutional adjudicators had assumed the role of constitutional governors.
- Vagueness and elusiveness of the basic and essential features of the Constitution – When the highest law of a country is not defined, persons in authority can manufacture definitions that can serve their political ambitions. It is, thus, dangerous to leave the meaning of ‘basic structure’ open-ended.
- The doctrine does not provide a technical solution to the amendment of constitutional amendments, which was the reason for its birth.

Way forward

- The Constitution of India is an organic or living document and needs to be amended with the changing time and needs of the society. The framers of the Indian Constitution were aware of the fact that no generation has a monopoly of wisdom nor has it the right to place its decisions on future generations to mould the machinery of government according to their requirements. However, such power of

amendment must be used judiciously.

Ninth Schedule of the Constitution

- In order to free India from the zamindari system, the Constitution went through its First Amendment, in the year 1951 and the Ninth Schedule became part of this document.
- It contains a list of central and state laws that are shielded from Judicial review.
- The Ninth Schedule is the detailed explanation of Article 31-B of the Indian Constitution.
- Initially, it had 13 laws, all of them aimed at land reforms but presently it contains 284 laws covering reservation, trade, industries, mine, etc.

Amendments as per article 368

- The framers of the Constitution took a middle path and made our Constitution rigid as well as flexible. Dr. Ambedkar called it a “flexible federation”.
- Part XX of the Indian Constitution contains Article 368.
- This article gives the Parliament power to amend the Constitution.

It mentions three types of amendment:

- By a simple majority of both the houses of the Parliament (the Lok Sabha and the Rajya Sabha)
- By a special majority of both the houses of the Parliament
- By a special majority of both the houses of the Parliament and ratified by half of the states. Ratified here means introduced as a bill on the floor of the state assembly and passed by a simple majority i.e., more than fifty percent present and voting.

Note: Various doctrines of Supreme Court

- Doctrine of Pith and Substance – if the substance of legislation falls within a legislature’s lawful power, the legislation does not become unconstitutional just because it impacts an issue beyond its area of authority.
- Doctrine of severability – when some particular provision of a statute offends or is against a constitutional limitation, but that provision is severable from the rest of the statute, only that offending provision will be declared void by the Court and not the entire statute.
- Doctrine of Eclipse – any law which is inconsistent with fundamental rights is not invalid. It is not totally dead but overshadowed by the fundamental right. The inconsistency (conflict) can be removed by constitutional amendment.
- Doctrine of Laches – emanates from the principle that the Courts will not help people who sleep over their rights and helps only those who are aware and vigilant about their rights. A party is said to be guilty of laches when they come to the Court to assert their rights after a considerable delay in that respect.
- Doctrine of territorial nexus- It means that the object shall be located outside the territorial limits of the state and has a territorial connection with the state.
- Doctrine of Colourable Legislation – It means when a legislature does not have the power to make laws on a particular subject directly, it cannot make laws on it indirectly.
- Doctrine of Harmonious Construction – when two provisions of a legal text seem to conflict, they should be interpreted so that each has a separate effect and neither is redundant or nullified.

1.7 Accreditation of HEIs

- National Assessment and Accreditation Council (NAAC) withheld the grading of the Maharaja Sayajirao University of Baroda after receiving an anonymous complaint that the university unduly tried to influence the peer review team with gold, cash and other favours.
- The council is currently considering reducing the role of the peer team visits in the overall scheme of things.

About:

- There are 1,043 universities and 42,343 colleges listed on the portal of the All-India Survey on Higher Education (AISHE) and 406 universities and 8,686 colleges are accredited.
- Maharashtra accounts for the highest number of accredited colleges, followed by Karnataka. Tamil Nadu has the most accredited universities at 43.

About NAAC:

- It is an autonomous body under the University Grants Commission (UGC).
- It carries out quality checks or assessments of Indian Higher-level Educational Institutions (HEIs),
- It certifies HEIs with gradings as part of accreditation. The ratings of institutions range from A++ to C. If an institution is graded D, it means it is not accredited.
- Through a multi-layered process, a higher education institution learns whether it meets the standards of quality set by the evaluator in terms of curriculum, faculty, infrastructure, research, and other parameters.

Methodology:

- Accreditation has been made mandatory through the UGC (Mandatory Assessment and Accreditation of Higher Educational Institutions) Regulations, 2012.
- The current approach to accreditation is “input-based” implying heavy reliance on self-assessment reports of applicant institutions related to quantitative and qualitative metrics.
- The data is then validated by NAAC expert teams and is followed by peer team visits to the institutions.
- The process of Peer Team Visits adds substantial effort on the part of both NAAC and the HEIs.
- Only higher education institutions that are at least six years old, or from where at least two batches of students have graduated, can apply.
- The accreditation is valid for five years.
- When an institution undergoes the accreditation process for the first time it is referred to as Cycle 1, and the subsequent five-year periods as Cycles 2, 3 and so on.

New considerations:

- A shift from “input-based” to “outcome-based approach”.
- Rather than relying exclusively on the self-study reports of the HEIs, the NAAC should ask institutions to provide evidence such as samples of learning materials, continuous assessment tasks and final examinations to show they have outcomes of learning specified in the syllabus.

Issues:

- The fear of obtaining a poor grade or no accreditation at all holds back higher education institutes from voluntarily applying for evaluation.

Way forward

- It is recommended that the role of Peer Team visits be facilitatory in nature and not have a significant weightage in assessment and accreditation.
- The new system of Provisional Accreditation for Colleges (PAC) under which even one-year-old institutions could apply for accreditation should be further explored while maintaining quality.
- NAAC should help the colleges improve the quality of education they provide, such that they can be successful in meeting the standards that NAAC accreditation calls for.

1.8 Karnataka Hijab row

A two-judge Bench of the Supreme Court of India is presently hearing arguments on the correctness of a Karnataka High Court judgment that upheld the ban on the use of the hijab by students in Karnataka.

The Karnataka Hijab row:

- A dispute pertaining to school uniforms erupted in Karnataka, when some Muslim students of a college who wanted to wear hijab to classes were denied entry on the grounds that it was a violation of the college's uniform policy.
- Several educational institutions Karnataka government's compulsory uniform order and denied entry to Muslim girls wearing the hijab. This was challenged in the Karnataka High Court (HC).
- The Karnataka HC, while it upheld the restriction on Muslim women wearing a hijab in educational institutions, made three primary findings in its judgment:
- First, it held that the use of a hijab is not essential to the practice of Islam. Thus, the right to freedom of religion was not violated.
- Second, it ruled that there exists no substantive right to freedom of expression or privacy inside a classroom and, therefore, these rights were simply not at stake here. It held classrooms as "qualified public spaces" where individual rights must give way to the interests of "general discipline and decorum".
- Third, it held that the ban did not stem directly out of the government's order, which only called for a uniform dress code to be prescribed by the State or school management committees, and, hence, the law did not discriminate, either directly or indirectly, against Muslim students.
- To decide on the correctness of this verdict, the Supreme Court need not answer all the questions posed before it. A reversal of any of the three findings made by the High Court ought to result in a nullification of the ban.

Law and religion:

- In theory, the issues emanating out of these submissions ought to be capable of easy resolution, through an application of ordinary doctrines of constitutional law.
- But, as transcripts from the hearings have shown us, every time an argument over religious freedom in India is made, it invariably mires itself in the court-crafted doctrine of essential practice (ERP).
- Essential religious practice (ERP) test is a doctrine evolved by the supreme court (SC) to protect only such religious practices under fundamental rights, which are essential and integral to religion. The doctrine of "essentiality" was invented by the SC in the Shirur Mutt case in 1954.

Constituent Assembly Debate:

- The essential practices doctrine owes its existence to a speech made by B.R. Ambedkar in the Constituent Assembly: "Ambedkar was striving to distinguish the religious from the secular, by arguing that the state should be allowed to intervene in matters that are connected to religion but are not intrinsically religious".

Judicial verdict in Shirur Mutt case:

- Supreme Court (SC), in the Shirur Mutt case (1954), held that to determine what constituted an 'essential' aspect of religion, the Court ought to look towards the religion concerned, and to what its adherents believed was demanded by their faith.
- It has allowed the Court to narrow the extent of safeguards available to religious customs by directly impinging on the autonomy of groups to decide for themselves what they deem valuable, violating, in the process, their right to ethical independence.

The Sabarimala verdict on ERP:

- The essential practices test is not without alternatives. In his concurring opinion, in the case concerning the ban on entry of women into the Sabarimala temple, Justice D.Y. Chandrachud proposed one such doctrine: a principle of anti-exclusion.
- The anti-exclusion principal postulates that where a religious practice causes the exclusion of individuals in a manner which impairs their dignity or hampers their access to basic goods, the freedom of religion must give way to the over-arching values of a liberal constitution.

Way Forward:

- But until such time as the essential practices doctrine is overruled by a Bench of more than seven judges, the Court is bound to apply its tenets. Perhaps that reassessment will happen when a nine-judge Bench constituted in the review petitions filed against the judgment in the Sabarimala case passes judgment.
- For now, any Court hearing a matter touching upon a matter of faith including wearing hijab has the unenviable task of acting not merely as an expert on law but also as an expert on religion.

1.9 The abut of fraternity

- Preamble contains ideals that the Constitution seeks to achieve. It gives direction and purpose to the Constitution.
- It also enshrines the grand objectives and socio-economic goals which are to be achieved through constitutional processes.

About fraternity:

- “These principles of liberty, equality and fraternity are not to be treated as separate items in a trinity. They form a union of trinity in the sense that to divorce one from the other is to defeat the very purpose of democracy,” said B.R. Ambedkar in the Constituent Assembly, in 1949.
- Dr Ambedkar defines fraternity as “a sense of common brotherhood and sisterhood among all Indians.” He was sure in his opinion that “equality and liberty will be no deeper than coats of paint” without fraternity.
- Note: The values of liberty, equality and fraternity in our Preamble is taken directly from the national motto of France: Liberté, égalité, fraternité, which in term came from the French Revolution (1789).

The responsibility of the individual citizen:

- R. Ambedkar provided its rationale with remarkable foresight: ‘We must begin by acknowledging the fact there is a complete absence of two things in Indian society. One of these is equality’ and as a result of it we would enter into ‘a life of contradictions’ on January 26, 1950.
- However, practical adherence to this commitment was given shape only by the 42nd Constitutional Amendment (1976) in Article 51A (e) on Fundamental Duties. It makes it the duty of every citizen of India ‘to promote harmony and the spirit of common among all the people of India, transcending religious, linguistic and regional or sectional diversities.’
- Significantly, the responsibility for bringing this about does not rest with the state but seems to be the responsibility of the individual citizen. We, therefore, need to comprehend the meaning and relevance of this pious wish.
- The idea of fraternity is based on the view that people have responsibilities to each other. It was defined after the French Revolution in the following terms: ‘Do not do to others what you would not want them to do to you; do constantly to others the good which you would wish to receive from them.’

The shape of inequality:

- An aggravating factor, often overlooked, is the shape that inequality takes in different segments of our society. It is economic on one plane; on others it is regional, caste and religious.
- Sociologists have identified nine categories of people who are determined to be socially and/or politically and/or economically excluded. These particularly include Dalits, Adivasis, women and religious minorities.
- Recent studies on religious minorities who constitute around 20% of India’s population have traced discrimination relating to them to perceptions that relate to the partition of August 1947.
- They argue that violence was not merely accidental but integral to the foundation of the nation and that the need for fraternity coexisted with the imperative need for restoring social cohesion in segments of society.
- A primary concern of the Constitution-makers related to cohesion and integration of the units of the new Republic formally described as ‘A Union of States’.

- In the words of Sardar Vallabhbhai Patel, ‘the inspiration and the stimulus came from above rather than from below and unless the transplanted growth takes a healthy root in the soil, there will be a danger of collapse and chaos.’ This was amplified by V.P. Menon as the ‘integration of the minds of the people’.
- In a speech in the Constituent Assembly on December 22, 1952, B.R. Ambedkar dwelt on what he called ‘Conditions Precedent for the Successful Working of Democracy’. He listed these as:
 1. Absence of glaring inequalities
 2. Presence of an opposition
 3. Equality of law and administration
 4. Observance of constitutional morality
 5. Avoidance of tyranny of majority over minority
 6. A functioning of moral order in society
 7. Public conscience.

Fraternity in present times:

- Over time, uneven development has characterised the States of the Indian Union. Regional and linguistic diversity characterises them. And so does uneven economic development and progress, resulting in uneven levels of education, employment, social cohesion, and contentment.
- 75 years after independence , a candid assessment of the state of the Republic makes us ponder on evidence of regional diversity, assertion of linguistic identity and emergence of diverging political orientations.
- Article 51A(e) of the Constitution does not differentiate between citizens on any of the categories mentioned above and makes it an all-encompassing duty and Its ambit therefore is universal.

Conclusion:

The term ‘fraternity’ refers to a sense of brotherhood as well as an emotional bond with the country and its people. We must cultivate the sense of this brotherhood in order to truly realise “Azadi ka Amrit Mahotsav’.

1.10 Live streaming of Supreme Court

The Supreme Court decided to live stream its proceedings in crucial Constitution Bench cases. Following the SC’s decision, Gujarat High Court began live streaming its proceedings in July 2021.

Currently, the Jharkhand, Karnataka, Madhya Pradesh, Orissa, and Patna High Courts live stream their proceedings.

Historical Reference:

- In 2018, a three-judge Bench comprising then CJI agreed to hear a public interest litigation seeking live streaming of judicial proceedings on matters of constitutional and national importance citing the principle of open access to justice.

Methods of live streaming:

- Synchronous: real-time live streaming
- Asynchronous: uploading recordings after certain delay such as the next day

The Example of Gujarat HC:

- The High Court of Gujarat implemented an in-house technical solution for live streaming of the Court Proceedings using computer systems, web cameras, digital audio interface and public address systems.
- The Court is now equipped with microphones and speakers.
- The live streaming is being done on the official YouTube Channel of the High Court which is now touching a subscriber base of 75000 and total cumulative views of 53 lacs.

Global Perspective:

- Brazil: Allowed live video and audio broadcast including deliberations and voting process. A public television channel, a radio channel, and YouTube channels have been set up apart from broadcasting proceedings live.
- South Africa: Allowed broadcasting as an extension of the right to freedom of expression
- Canada: Proceedings are broadcast live on Cable accompanied by explanations of each case, overall processes, and powers of the court.
- United Kingdom: Proceedings are broadcast live but coverage can be withdrawn in sensitive appeals.
- USA: Supreme Court has rejected pleas for broadcast of its proceedings but allowed audio recording and transcripts of oral arguments.

Concerns:

- Video clips of proceedings from Indian courts are already on YouTube and other social media platforms with sensational titles that creates fears of irresponsible or motivated use of content and spread of misinformation among the public.
- Justices may behave like politicians when given free television time, they act to maximize their individual exposure (as per a 2018 paper by titled 'Television and Judicial Behaviour in Brazilian Supreme Court')
- Broadcast of proceedings corresponded with a growth in the frequency of filibustering.
- A judge must not be swayed by popular opinion and public gaze.

Significance:

- Help in addressing gendered disruptions in oral arguments, with women being interrupted at disproportionate rates by their male colleagues.
- Help in improving transparency and greater access to justice system.
- It will lead to de-congestion of courts and improving physical access to courts.
- It is crucial for dissemination of information, free speech, and fundamental rights.

Way forward – AGI's Recommendations:

- Introduce live streaming as a pilot project and only in Constitution Bench cases.
- The court must retain the power to withhold broadcasting, and to also not permit it in sensitive cases like matrimonial matters, juveniles matter and matters of national security.
- Ensure that victims, witnesses, or defendants can depose truthfully and without any fear. Special protection must be given to vulnerable or intimidated witnesses such as face distortion.
- Protect privacy and security of victims and witnesses such as relating to sexual assault or rape matters or in cases which may provoke sentiments and arouse passion and provoke enmity among communities.

1.11 Indian Olympic Association (IOA)

The Supreme Court tasked former SC judge LN Rao with amending the Constitution of the Indian Olympic Association (IOA), preparing the electoral college as well as conducting elections.

About Indian Olympic Association (IOA):

- It is the body responsible for selecting athletes to represent India & managing the Indian teams at the Olympic Games, Asian Games, Commonwealth Games, and other international athletic meets.
- It was founded in 1927 with Sir Dorabjee Tata and Dr. A.G. Noehren.
- It is registered as a Non-Profit Organisation under the Societies Registration Act of 1860
- It plays with the name of Team India & is an affiliated member of the International Olympic Committee.
- Structure: A 32-member Executive Council, headed by President and assisted by different Standing Committees that includes subject-field experts for effective governance. The election for the Executive Council is held once in every 4 years.

- Objective: to develop, promote and protect the Olympic Movement in the country.

1.12 Economically Weaker Section (EWS) Quota

Recently, the Attorney-General of India articulated that the 10% quota for Economically Weaker Sections (EWS) of society does not erode the rights of the Scheduled Castes, the Scheduled Tribes, or the Other Backward Classes.

What is Economically Weaker Section (EWS) Quota?

- The 10% EWS quota was introduced under the 103rd Constitution (Amendment) Act, 2019 by amending Articles 15 and 16.
- It inserted Article 15 (6) and Article 16 (6).
- It is for economic reservation in jobs and admissions in educational institutes for Economically Weaker Sections (EWS).
- It was enacted to promote the welfare of the poor not covered by the 50% reservation policy for Scheduled Castes (SCs), Scheduled Tribes (STs) and Socially and Educationally Backward Classes (SEBC).
- It enables both the Centre and the States to provide reservations to the EWS of society.

Significance:

- Addresses Inequality:
- The 10% quota is progressive and could address the issues of educational and income inequality in India since the economically weaker sections of citizens have remained excluded from attending higher educational institutions and public employment due to their financial incapacity.
- Recognition of the Economic Backwards:
- There are many people or classes other than backward classes who are living under hunger and poverty-stricken conditions.
- The proposed reservation through a constitutional amendment would give constitutional recognition to the poor from the upper castes.
- Reduction of Caste-Based Discrimination:
- Moreover, it will gradually remove the stigma associated with reservation because reservation has historically been related to caste and most often the upper caste looks down upon those who come through the reservation.

Concerns:

Unavailability of Data:

- The Union or state governments have no such data to prove that 'upper' caste individuals, who have less than Rs 8 lakh annual income, are not adequately represented in government jobs and higher educational institutions. There is a strong possibility that they are actually over-represented in these places.

Arbitrary Criteria:

- The criteria used by the government to decide the eligibility for this reservation is vague and is not based on any data or study.
- Even the SC questioned the government whether they have checked the GDP per capita for every State while deciding the monetary limit for giving the EWS reservation.
- Statistics show that the per capita income in states differs widely – Goa is the state having the highest per capita income of almost Rs. 4 lakhs whereas Bihar is at the bottom with Rs.40,000.
- Additional Information: Judicial Scrutiny of Reservation
- The State of Madras v. Smt. Champakam Dorairajan (1951) case was the first major verdict of the Supreme Court on the issue of Reservation. The case led to the First amendment in the constitution.
- The Supreme Court in the case pointed out that while in the case of employment under the State, Article 16(4) provides for reservations in favour of backward class of citizens, no such provision was made in

Article 15.

- Pursuant to the Supreme Court's order in the case the Parliament amended Article 15 by inserting Clause (4).
- In *Indra Sawhney v. Union of India* (1992) case the court examined the scope and extent of Article 16(4).
- The Court has said that the creamy layer of OBCs should be excluded from the list of beneficiaries of reservation, there should not be reservation in promotions; and total reserved quota should not exceed 50%.
- The Parliament responded by enacting 77th Constitutional Amendment Act which introduced Article 16(4A).
- The Supreme Court in *M. Nagaraj v. Union of India* 2006 case while upholding the constitutional validity of Art 16(4A) held that any such reservation policy in order to be constitutionally valid shall satisfy the following three constitutional requirements:
- The SC and ST communities are not adequately represented in public employment. Such reservation policy shall not affect the overall efficiency in the administration.
- In *Jarnail Singh vs Lachhmi Narain Gupta* case of 2018, Supreme Court holds that reservation in promotions does not require the state to collect quantifiable data on the backwardness of the Scheduled Castes and the Scheduled Tribes.
- The Court held that creamy layer exclusion extends to SC/STs and, hence the State cannot grant reservations in promotion to SC/ST individuals who belong to the creamy layer of their community.
- In May 2019 the Supreme Court upheld the Karnataka law that allows reservations in promotions for SCs and STs with consequential seniority.

2. International Relations

2.1 Geopolitics without geoeconomics, a fool's errand

Over the past few years, New Delhi has managed to emerge as a major pivot of the global Indo-Pacific grand strategic imagination, avoided the temptations to militarise/securitise the Quad (Australia, Japan, India, and the United States), and has ensured that the Association of Southeast Asian Nations (ASEAN) states do not feel uneasy by the ever-increasing balance of power articulations in the Indo-Pacific.

Indo-Pacific (IP) Region:

The term 'Indo-Pacific' has gained currency as a new construct in recent times. The Indo-Pacific provides a geographic and strategic expanse, with the two oceans being linked together by the ten ASEAN countries.

Significance of Indo-Pacific region for India:

- **Strategic significance:** Indo-Pacific is a multipolar region, contributing more than half of the world's GDP and population. A stable, secure, and prosperous Indo-Pacific Region is an important pillar of India's strategic partnership with the other countries especially USA.
- **Mineral Resources:** Maritime territories have also emerged as depositories of vital resources ranging from fish stocks to minerals and offshore oil and gas. The South China Sea, for instance, is estimated to hold some 10 per cent of the global catch of fish as well as 11 billion barrels of oil and 190 trillion cubic feet of gas.
- **Economic Growth:** According to a report of the Asian Development Bank (ADB), countries in the Indo-Pacific produce over 60% of global GDP, making the region the largest single contributor to global growth.
- **Commerce:** The region consists of many of the world's vital choke points for global commerce, including the Straits of Malacca which is very critical for the growth of world economy. The Indo-Pacific region also stands at the intersection of international trade, with around 32.2 million barrels of crude oil pass through annually and 40% of global exports come from the region.
- **Maritime Trade:** Pacific islands are strategically significant from New Delhi's point of view as they sit astride important sea lines of communication through which important maritime trade is conducted.

Chinese threat and increasing presence:

- The Chinese regime claims that it has historical ownership over nearly the entire region, which gives it the right to manufacture islands, declare defensive perimeters around its artificial islands, and to chase ships from other nations out of the South China Sea. The International Court of Arbitration at Hague rejected this claim in 2016 but China rejects the authority of PCA, Hague.
- China's increasingly active presence in the Indian Ocean region as well as its efforts to expand geopolitical reach in Asia and beyond by the use of trade and military Demand rule-based order to secure India's interests and free trade. In the present time, the control of sea lanes and ports would be the game.

What New Delhi is missing:

- And yet, New Delhi's vision for the Indo-Pacific appears half-baked. Policymakers in New Delhi today do not appear to appreciate the inescapable linkages between geopolitics and geoeconomics.
- China's share in global trade today is 15% and India accounts for 2%.
- India's decision to take to the Indo-Pacific and Quad in a big way while unwilling to join two of the region's key multilateral trading agreements goes to show that geoeconomics and geopolitics are imagined and pursued parallelly in New Delhi, not as complimenting each other.
- The most recent example is India's refusal to join the trade pillar of the Indo-Pacific Economic Framework (IPEF) while deciding to join the three other pillars of the IPEF — supply chains, tax and anti-corruption, and clean energy.
- India's move to stay out of IPEF, a U.S.-sponsored soft trade arrangement at best, comes two years after India walked out of the negotiations on the Regional Comprehensive Economic Partnership (RCEP) which

came to effect earlier this year. Both the agreements lay at the heart of the Indo-Pacific and could potentially shape the economic character of the broader Indo-Pacific region.

A regressive step, China factor:

- There are several reasons why New Delhi's decision to stay out of various regional trading agreements is a regressive policy decision.
- For one, the absence of the world's fifth largest economy from various regional trading platforms will invariably boost China's geo-economic hegemony in Asia.
- Given the growing fear in India about the negative implications of China-India trade, it is important to have a nuanced view of this.
- For one, the fear in India of China dominating the Indian market is not entirely unreasonable.
- The reality is that despite the military stand-off on the Line of Actual Control (LAC), India-China trade has only increased in the past year.
- Therefore, if it is not possible for India to avoid trading with China; it is better for India to deal with the issue sooner rather than later.
- The optimism that many of the foreign investments and businesses in China would relocate to India after COVID-19, did not materialise.
- Most of them went to countries such as Vietnam thereby highlighting the fact that we need to get our house in order; joining some of these multilateral trading arrangements will force us to do precisely that.
- if India is indeed serious about its maritime grand strategy, which cannot be solely military in nature, it needs to get the states in the region to create economic stakes in India (something China has done cleverly and consistently) and vice-versa.
- More so, without creating economic stakes with the states of the region, India's 'Act East' policy will revert to its earlier avatar — 'Look East'.

Way forward:

- New Delhi should rethink its geo-economic choices if it is serious about enhancing its geopolitical influence in the region. Given that India has not closed the door on the trade pillar of the IPEF, we have an opportunity to rethink our position.
- India should also rethink its decision not to join the RCEP and seek to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) from which the U.S. walked out and China is seeking to join.
- India should also proactively lobby to become a part of the Minerals Security Partnership, the U.S.-led 11-member grouping to secure supply chains of critical minerals.

2.2 Commonwealth

The death of Queen Elizabeth II of the United Kingdom, the country's longest serving ruler, who reigned for over 70 years, marks not only the end of an era for the British monarchy, but also a turning point for the 14 Commonwealth realms of which she was the Head of State.

What is the Commonwealth and what are its realms?

- The Commonwealth of Nations is a group of 56 countries comprised mostly of former British colonies including India.
- The Commonwealth consists of both republics and realms. The British monarch is the Head of State for the realms, whereas the republics are ruled by elected governments, except in the case of five countries — Brunei Darussalam, Eswatini, Lesotho, Malaysia, and Tonga — each a self-governed monarchy.
- The realms are comprised of Antigua and Barbuda, Australia, the Bahamas, Belize, Canada, Grenada, Jamaica, New Zealand, Papua New Guinea, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, the Solomon Islands, and Tuvalu.

How is the Commonwealth viewed by its members?

- Even if the situation is changing vis-à-vis, the broader Commonwealth group, remains strong and fosters policy coordination among its members through its Heads of Government Meetings, even post-pandemic economic recovery.
- This has not always been the case. During the Queen's third and final visit to India in 1997, many expected an apology for the Jallianwala Bagh massacre of 1919, carried out by the erstwhile colonial government, and ordered by General Reginald Dyer.
- Yet that apology never came, and instead the Queen only referenced the killings during a banquet speech when she said, "It is no secret that there have been some difficult episodes in our past. Jallianwala Bagh is a distressing example."
- It was also in 1997 that the U.K. handed over control of Hong Kong to the People's Republic of China, thereby losing after 156 years what was considered to be one of the most important colonies in Asia.

Which nations are moving towards ending formal ties to the British monarchy?

- The debate in some of the Commonwealth realms, including for example Australia, has led to popular movements to reposition the country in question as a republic. In this regard it is likely that there will be a referendum on the question of severing official ties to the monarchy in the months ahead.
- While Prime Minister Jacinda Ardern of New Zealand has said that her country would support King Charles, she added that it would become a republic "in time".
- Similarly, Prime Minister Philip Davis of the Bahamas has said he intends to conduct a referendum to remove King Charles from the role of official Head of State, thereby moving the country, which gained independence in 1973, towards being a republic.
- Governments in five other Caribbean nations — Antigua and Barbuda, Belize, Grenada, Jamaica and Saint Kitts and Nevis — have signalled their intention to act similarly.
- Thus, it is not beyond imagination that following the death of Queen Elizabeth, the Commonwealth realms might fade into being a relic of the past, and nations that suffered a history of colonialism — along with its attendant violence and resource extraction — will move forward to establish themselves as republics.

2.3 UNSC Sanctions

China defended its controversial move to block a joint India-U.S. effort to place a Pakistan-based Lashkar-e-Taiba (LeT) terrorist on the U.N. Security Council's 1267 committee sanctions list.

Type of UNSC Resolutions:

A UNSC resolution is of two kinds:

- One is obligatory: An obligatory or binding resolution of the UNSC is passed under Article 39, Chapter VII of the UN charter.
- Other non-obligatory: A non-binding resolution of the UNSC is one that is passed under Article 33, Chapter VI of the UN charter.
- During UNSC voting, abstention by non-P5 members merely means that temporary members do not wish to take sides in a resolution.
- When a P5 member abstain from a resolution, it is called a Veto. Resolution fails in this case.

Important Resolutions adopted by the Security Council in 2022:

- Resolution 2650 : The situation in the Middle East (UNIFIL)
- Resolution 2650 : The situation in Mali
- Resolution 2648: The situation in the Central African Republic
- Resolution 2636: Reports of the Secretary-General on the Sudan and South Sudan (UNITAMS)
- Resolution 2626: The situation in Afghanistan
- Resolution 2623: Emergency Special Session of the General Assembly on Ukraine

2.4 Shanghai Cooperation Organisation (SCO)

Shanghai Cooperation Organisation (SCO) meeting (September 2022) in Samarkand, Uzbekistan, was a test case for governments on how to deal with current conflicts and attempt new guidelines for the future.

About Shanghai Cooperation Organization (SCO):

- SCO is an intergovernmental international organisation that exists indefinitely. It was founded in 2001. The SCO Charter was signed in 2002 and took effect in 2003.
- SCO is a Eurasian political, economic, and security partnership. It is the world's largest regional organisation in terms of geographic breadth and population, spanning around 60% of Eurasia, 40% of the world population, and more than 30% of global GDP.

Structure of the SCO:

- Heads of State Council – The top SCO body that decides on internal SCO operations, interactions with other states and international organisations, and international concerns.
- Heads of Government Council – Approves the budget and evaluates and decides on topics pertaining to SCO's economic domains of engagement.
- Council of Foreign Ministers – Considers problems concerning day-to-day operations.
- Regional Anti-Terrorist Structure (RATS) – An organisation formed to combat terrorism, separatism, and extremism.

New version of non-alignment:

- India's presence at the meeting of the Council of Heads of State of the SCO was significant, reflecting a desire to be a part of both blocs, without antagonising either.
- On the other hand, in his formal opening remarks at the summit, Mr. Modi thanked both Russia and Ukraine for the evacuation of Indian students from Ukraine, highlighting India's posture of equidistance between the two countries.
- The philosophical underpinning for this seems to be that 'Nonalignment of the past' had not succeeded, and a way had to be found for "multiple engagements of the future".
- Recently the United States and other western allies had complimented India for its participation in the Quad (Australia, Japan, India, and the U.S.).
- Whether India can make out a case for 'mixing utopia with reality' under the label of 'multi alignment' is yet to be seen, but it does provide grist to an idea being floated that this provides leeway for India to play a much bigger role in 'managing conflict'.
- It would be interesting to see whether this SCO summit will pave the way for India to exploit other situations created by political contradictions and use them to its advantage.
- A test case is India's relations with Iran which have been on the backburner for some time, following a U.S. threat to impose sanctions on India if it continued to trade with Iran.
- Refashioning India's foreign policy has become vital at a time when India is facing a confluence of old and new situations and threats, which often intersect.

Ties with China:

- India's foreign policy should be creative enough to leave an opening for an improvement in India-China relations over the longer term.
- Again, the intensity of the current conflict between India and China should not lead India's strategic establishment to overlook the fact that the primary conflict between India and China is 'civilizational', and not for territory.
- India's foreign policy mandarins must look for opportunities for the betterment of relations at an opportune time, which could well arise when China's economy begins to stall and India's economy rises, moderating China's current aggressive behaviour.

Nuclear dimension

- An issue that has remained on the backburner for years may now need consideration in the context of the

Ukraine-Russia conflict, viz., the nuclear dimension.

- We have a 'No First Use Doctrine', and while nuclear relationships involving India, China and Pakistan have remained remarkably subdued over many years, India's strategic and foreign policy establishment cannot afford to overlook the nuclear aspect, given that the country is wedged between two active, and hostile, nuclear powers — China and Pakistan.
- We cannot ignore the growing sophistication of Chinese nuclear forces, and to a lesser extent that of Pakistan, which has the effect of putting India at a disadvantage with both predictable and unpredictable consequences.
- India's new foreign policy imperatives cannot again afford to ignore this aspect, even though at present India is the only one among the three that does not see nuclear weapons as intended for use in the event of a war.

Conclusion:

Hence, navigating the coming decade necessitates giving up many of the existing policy constructs, providing for a wider outreach, and ensuring that our policy is not merely in step with current needs but is always a step ahead.

2.5 Asian Development Bank (ADB)

The Asian Development Bank (ADB) has pared its 2022-23 growth projection for India's economy to 7% from 7.5% estimated in April, terming it a "modest downward revision" driven by higher-than-anticipated inflation and monetary tightening.

In this context let us know the financial institution in detail:

Origins of ADB:

- ADB was conceived in the early 1960s as a financial institution that would be Asian in character and foster economic growth and cooperation in one of the poorest regions in the world.
- A resolution passed at the first Ministerial Conference on Asian Economic Cooperation held by the United Nations Economic Commission for Asia and the Far East in 1963 set that vision on the way to becoming reality.
- The Philippines capital of Manila was chosen to host the new institution, which opened in 1966, with 31 members that came together to serve a predominantly agricultural region. Takeshi Watanabe was ADB's first President.
- During the 1960s, ADB focused much of its assistance on food production and rural development.
- In May 2014, plans were announced to combine the lending operations of ADB's two main funds, the Asian Development Fund, and its ordinary capital resources. The merger will boost ADB's total annual lending and grant approvals to as high as \$20 billion—50% more than the current level when it takes effect in January 2017.
- From 31 members at its establishment in 1966, ADB has grown to encompass 68 members including India—of which 49 are from within Asia and the Pacific and 19 outside.
- This bank was modelled on the lines of the world bank. As of 31st December 2021, Japan holds the largest share in ADB with 15.677%, followed by U.S.A (15.567%), China (6.473%), and India (5.812%).
- It is headquartered in Manila, Philippines.

ADB Green and Blue Bonds:

- The Green Bond program enables ADB to support its developing member countries seeking to mitigate greenhouse gas (GHG) emissions and adapt to the consequences of climate change, whilst delivering environmentally sustainable growth to help reduce poverty and improve the quality of life of their people.
- The Green Bond portfolio specifically targets projects that promote the transition to low carbon and climate resilient growth as set out in the ADB Green Bond Framework.
- In order to address the growing funding gap required to protect and restore ocean health, global markets need to systematically change. ADB's Blue bonds encourage that shift by increasing the amount of capital that can be invested in oceans to finance solutions at scale.

Recent development between ADB & India:

- ADB and India have signed a loan of \$206 million to strengthen urban services in 5 Tamil Nadu cities.
- Asian Development Bank (ADB) has listed its 10-year masala bonds worth Rs 850 crore on the global debt listing platform of India INX.
- Asian Development Bank (ADB) had prepared a Conceptual Development Plan (CDP) for Vizag-Chennai Industrial Corridor (VCIC).

2.6 India and Egypt

Union Defence Minister meets President of Egypt in Cairo. India and Egypt agreed to further develop military cooperation and focus on joint training, defence coproduction and maintenance of equipment.

Historical Relations:

- India and Egypt, two of the world's oldest civilizations, have enjoyed a history of close contact from ancient times. Even prior to the Common Era, Ashoka's edicts refer to his relations with Egypt under Ptolemy II.
- In modern times, Mahatma Gandhi and Saad Zaghloul shared common goals on the independence of their countries
- Exceptionally close friendship between Gamal Abdel Nasser and Jawaharlal Nehru, leading to a Friendship Treaty between the two countries in 1955.

Political Relations:

- India and Egypt share close political understanding based on long history of contacts and cooperation in bilateral, regional, and global issues.
- Both countries have cooperated closely in multilateral fora and were the founding members of Non-Aligned Movement.
- The year 2022 is of particular significance since it marks the 75th anniversary of diplomatic relation between India and Egypt.

Economic Relations:

- The India-Egypt Bilateral Trade Agreement has been in operation since March 1978 and is based on the Most Favoured Nation clause and the bilateral trade has increased more than five times in last ten years.
- The bilateral trade in 2018-19 reached US\$ 4.55 billion.
- Despite Pandemic, the volume of trade declined only marginally to US \$ 4.5 billion in 2019-20 and to US \$ 4.15 billion in 2020-21 (Egypt's exports to India were valued at US\$ 1.89 billion and imports from India at US\$ 2.26 billion with India having a favourable trade balance of US\$ 372 million.)
- Bilateral trade has expanded rapidly in 2021-22, amounting to 26 billion registering a 75% increase compared to FY 2020-21.
- India's exports to Egypt during this period amounted to US\$ 3.74 billion, registering a 65% increase over the same period in FY 2020-21. At the same time, Egypt's exports to India reached US\$ 3.52 billion registering an 86% increase.

Development assistance:

- The grants-in-aid projects include: Pan Africa Tele-medicine and Tele-education project in Alexandria University, Solar electrification project in Agaween village and Vocational Training Centre for textile technology in Shoubra, Cairo, which have been completed.
- Technical cooperation and assistance have been a major part of our bilateral relationship. Since 2000, over 1250 Egyptian officials have benefited from ITEC and other programs like ICCR and IAFS scholarships.
- In the field of scientific cooperation, ICAR and the Agricultural Research Centre of Egypt are working in the field of agricultural research.
- 'Science & Technology' cooperation is implemented through biennial Executive Programmes and Scientific Cooperation Programme between CSIR (India) and NRC (Egypt).

- Space cooperation is an emerging vertical of cooperation between India and Egypt. Joint Working Group meetings and discussions between ISRO and NARSS (National Authority for Remote Sensing and Space Sciences) have been held, since an MoU was signed.

Defence Relations:

- There was close cooperation between the Air Forces, with efforts at jointly developing a fighter aircraft in 1960s.
- IAF pilots had also trained Egyptian pilots from 1960s until 1984.
- Most of the current defence cooperation is determined by Joint Defence Committee (JDC) activities.
- Egypt participated in the Multinational Training Exercise for friendly African countries held at Pune in 2019. The first ever IAF-EAF Joint Tactical Air Exercise, Desert Warrior, was held in 2021.
- The first ever Special Forces exercise “Cyclone 1” between India and Egypt planned in Jodhpur from 8th – 22nd January 2022 stands postponed.

Cultural Relations:

- The Maulana Azad Centre for Indian Culture (MACIC) has been promoting cultural cooperation between the two countries, through regular activities such as Hindi, Urdu and Yoga classes; seminars; film shows; exhibitions and participation in local cultural activities.
- ‘Sawt-ul-Hind’, Embassy’s flagship Arabic magazine for the past six decades, reached a milestone in July 2017 with the publishing of its 500th edition, depicting the strong bond and vibrant cultural exchanges between the two countries.
- Indian Community: At present, the Indian community in Egypt numbers at around 3200, most of whom are concentrated in Cairo.

Way forward:

- The year 2022 is of particular significance since it marks the 75th anniversary of diplomatic relation between India and Egypt and there shall be constant effort to reinforce and grow this friendship.

2.7 India and Japan

- Strengthening the Indo-Pacific region, a concept first articulated by former Japanese Prime Minister Shinzo Abe, was at the top of Prime Minister of India’s meeting with his Japan’s counterpart in Tokyo, where Indian Prime Minister attended Mr. Abe’s state funeral.
- In this regards, let us analyse the brief bilateral relationship between the two countries.

India – Japan relations:

Historical:

- The friendship between India and Japan has a long history rooted in spiritual affinity and strong cultural and civilization ties dating back to the visit of Indian monk Bodhisena in 752 AD.
- In contemporary times, among prominent Indians associated with Japan were Gautama Buddha, Swami Vivekananda, Gurudev Rabindranath Tagore, JRD Tata, Netaji Subhash Chandra Bose and Judge Radha Binod Pal.

Diplomatic:

- In the first decade after diplomatic ties were established, several high-level exchanges took place, including the Japanese Prime Minister’s visit to India in 1957.
- Japan was among the few countries that bailed India out of the balance of payment crisis in 1991.
- The Act East Forum, established in 2017, aims to provide a platform for India-Japan collaboration under the rubric of India’s “Act East Policy” and Japan’s “Free and Open Indo-Pacific Vision”.

Economic and Commercial relations:

- Japan’s interest in India is increasing due to a variety of reasons including India’s large and growing

market and its resources, especially the human resources.

- The India Japan Comprehensive Economic Partnership Agreement (CEPA) came into force in August 2011.
- Japan has been extending bilateral loan and grant assistance to India since 1958, and is the largest bilateral donor for India.
- The bilateral trade between India and Japan for FY 2019-20 (April – December) totalled US\$ 11.87 billion.
- India's primary exports to Japan have been petroleum products, chemicals, elements, compounds, non-metallic mineral ware, fish & fish preparations, metalliferous ores & scrap, clothing & accessories, iron & steel products, textile yarn, fabrics, and machinery etc.
- India's primary imports from Japan are machinery, electrical machinery, iron and steel products, plastic materials, non-ferrous metals, parts of motor vehicles, organic chemicals, manufacturers of metals, etc.

Defence Cooperation:

- During Prime Minister visit to Japan in October 2008, two leaders issued "the Joint Declaration on Security Cooperation between Japan and India".
- There are also various frameworks of security and defence dialogue between Japan and India including the "2+2" meeting, annual Defence Ministerial Dialogue and Coast Guard-to-Coast Guard dialogue.
- India and Japan defence forces organise a series of bilateral exercises namely, JIMEX, SHINYUU Maitra, and Dharma Guardian. Both countries also participate in the Malabar exercise with the USA.
- Quad alliance: Quad is an informal strategic dialogue between India, the USA, Japan and Australia with a shared objective to ensure and support a "free, open and prosperous" Indo-Pacific region.

Science & Technology:

- Bilateral S&T cooperation was formalised through an Inter-Governmental Agreement signed in 1985.
- India-Japan Digital Partnership (IJDP) was launched in October 2018 furthering existing areas of cooperation as well as new initiatives within the scope of cooperation in S&T/ICT, focusing more on "Digital ICT Technologies".
- Recent initiatives include the establishment of three India-Japan Joint Laboratories in the area of ICT (AI, IoT and Big Data); Initiation of the DST-JSPS Fellowship Programme for young researchers.

Healthcare:

- India's AYUSHMAN Bharat Programme and Japan's ASHWIN, both sides had been consulting with each other to identify projects to build the narrative of AHWIN for AYUSHMAN Bharat.

Indian diaspora in Japan:

- In recent years, there has been a change in the composition of the Indian community with the arrival of a large number of professionals, including IT professionals and engineers working for Indian and Japanese firms as well as professionals in management, finance, education, and S&T research.

Challenges to the bilateral relations:

- The trade ties which have remained underdeveloped when compared to India's trade ties with China.
- Both countries have border and hegemonic issues with China. So, their policy stance hinges generally on China, rather than growing comprehensively.
- Both had diverging interest with respect to economic issues like on E-commerce rules (Osaka track), Regional Comprehensive Economic Partnership
- A challenge for government is to correct the lopsided trade and calibrate China's market access to progress on bilateral political, territorial and water disputes, or else Beijing will fortify its leverage against India.
- Balancing between QUAD and BRICS: India is a member of groups like the BRICS, which brings together Brazil, Russia, India, China, and South Africa. In addition, though New Delhi has not joined the China-led Belt and Road Initiative (BRI), it is a member of the AIIB (Asian Infrastructure Investment Bank). So India has to do a balancing act between Quad and BRICS.
- Asia-Africa Growth Corridor (AAGC) project: there is a great deal of scepticism on the feasibility of the AAGC itself as well as the nature of the projects embedded in it.

Way Forward:

- India and Japan are two powerful democratic forces in Asia which are searching for more options to work and prosper jointly.
- Indo-Japan should be realistic enough to understand that in any future regional strategic scenario, because of its economic and military strength.
- Pollution is a serious issue in major Indian cities. Japanese green technologies can help India tackle this threat.
- Smooth implementation of the prestigious high speed rail project linking Ahmedabad and Mumbai will ensure credibility of India's investment climate.
- India's purchase of Japan's indigenously made US-2 amphibian aircraft if successfully executed, could also contribute to India's 'Make in India'.
- Both countries are also engaged in discussions on the possibilities of India acquiring Japanese technology in the production of submarines and on cooperative research in areas like unmanned Ground Vehicle and Robotics.
- Indo-Japan should be realistic enough to understand that in any future regional strategic scenario, because of its economic and military strength, China will figure quite prominently so efforts should be done to keep the Indo-Pacific multipolar.

3. Economy

3.1 Index of industrial production (IIP)

- Growth in the output of eight core infrastructure sectors decelerated sharply for a second straight month to hit a six-month low of 4.5 per cent in July from a year ago, as a conducive base effect waned considerably.
- This may weigh down the growth of the index of industrial production (IIP) in July from 6.7 percent in June, given that the core industries make up for 40.30 per cent of the IIP. What is the Index of Industrial Production?
- IIP is a composite indicator measuring changes in the volume of production of a basket of industrial products over a period, with respect to a chosen base period.
- It is compiled and published monthly by the National Statistical Office (NSO), Ministry of Statistics and Programme Implementation.
- It is a composite indicator that measures the growth rate of industry groups classified under:
 - Broad sectors, namely, Mining, Manufacturing, and Electricity.
 - Use-based sectors, namely Basic Goods, Capital Goods, and Intermediate Goods.
 - Base Year for IIP is 2011-2012.

Significance of IIP:

- It is used by government agencies including the Ministry of Finance, the Reserve Bank of India, etc, for policy-making purposes.
- IP is the only measure on the physical volume of production.
- It forms a crucial input for compilation of Gross Value Added (GVA) of the manufacturing sector in the Gross Domestic Product (GDP) on a quarterly basis.
- IIP remains extremely relevant for the calculation of the quarterly and advance GDP estimates.
- It is also used extensively by financial intermediaries, policy analysts and private companies for various analytical purposes.

About Eight Core Sectors:

- These comprise 40.30% of the weight of items included in the Index of Industrial Production (IIP).
- The eight core sector industries in decreasing order of their weightage: Refinery Products> Electricity> Steel> Coal> Crude Oil> Natural Gas> Cement> Fertilizers.

3.2 IMF Bailout

Sri Lanka has reached a preliminary agreement with the International Monetary Fund (IMF) for a loan of about \$2.9 billion.

How IMF lending helps?

- IMF lending aims to give countries breathing room to implement adjustment policies in an orderly manner, which will restore conditions for a stable economy and sustainable growth.
- IMF financing facilitates a more gradual and carefully considered adjustment.
- As IMF lending is usually accompanied by a set of corrective policy actions, it also provides a seal of approval that appropriate policies are taking place.

Lending instruments

- The IMF's various lending instruments are tailored to different types of balance of payments need as well as the specific circumstances of its diverse.
- All IMF members are eligible to access the Fund's resources in the General Resources Account (GRA) on

non-concessional terms.

- The IMF also provides concessional financial support (currently at zero interest rates through June 2021) through the Poverty Reduction and Growth Trust which is better tailored to the diversity and needs of low-income countries.
- Historically, for emerging and advanced market economies in crises, the bulk of IMF assistance has been provided through Stand-By Arrangements (SBAs) to address short-term or potential balance of payments problems.
- The Standby Credit Facility (SCF) serves a similar purpose for low-income countries.
- The Extended Fund Facility (EFF) and the corresponding Extended Credit Facility (ECF) for low-income countries are the Fund's main tools for medium-term support to countries facing protracted balance of payments problems.
- To help prevent or mitigate crises and boost market confidence during periods of heightened risks, members with already strong policies can use the Flexible Credit Line (FCL) or the Precautionary and Liquidity Line (PLL).
- The Rapid Financing Instrument (RFI) and the corresponding Rapid Credit Facility (RCF) for low-income countries provide rapid assistance to countries with urgent balance of payments need, including from commodity price shocks, natural disasters, and domestic fragilities.
- Reflecting different country circumstances, GRA-supported programs are expected to resolve the member's BoP problems during the program period, while PRGT programs envisage a longer duration for addressing BoP problems.

3.3 Feeding humanity, Saving the planet

There is increasing awareness that humans are over-exploiting this planet's natural resource endowment. This may threaten the very existence of humanity.

Consequences of over exploitation of natural resources:

- Degradation of lands, especially the topsoil that is crucial for providing us with food, animal feed and fibre.
- Groundwater is depleting and its quality is becoming poorer with the increasing use of chemical fertilisers and other industrial waste.
- The air pollution at an alarming rate in certain parts of the world, especially in India, where at times it is difficult to even breathe in a city like Delhi when stubble burning peaks in farmers' fields in Punjab and Haryana.

What is the real cause behind such a rapid deterioration in nature's wealth:

- There is imbalance between people, our planet, and the political economy of policies.
- What we know is that roughly it took more than 2,00,000 years for homo sapiens to evolve into the current form of mankind. In 1804, for the first time in history, the human population touched one billion.
- In next billion was added in 123 years with the count touching two billion by 1927. Several major breakthroughs in medical science ensured that the next billion was added in just 33 years by 1960.
- The next billion was added in just 14 years with the population reaching four billion in 1974. The next billion took just 13 years (five billion in 1987), 11 years thereafter (six billion in 1998), 12 years thereon (seven billion in 2010), and another 12 years to touch eight billion in 2022.
- This explosive growth of population, with higher and higher aspirations, has created a huge imbalance between the demands of people and the capacity of this planet to supply them in a sustainable manner.

Can this planet provide food for all through natural farming without the use of any chemical fertilisers, pesticides, modern high yielding varieties of seeds etc.?

- Many governments, religious organisations, and some NGOs and individuals believe that there is no option but to go back to nature and practice organic/natural farming
- Sri Lanka, for example, wanted to get rid of chemical fertilizers.

- Even in India, we have some states (like Sikkim) declared as organic states, state like Andhra Pradesh is also scaling up natural farming and many others states are attempting to do so.
- **SAVE SOIL: A MOVEMENT THAT BEGAN 24 YEARS AGO:** For three decades now, Sadhguru from ISHA Foundation has been continuously bringing the importance of soil and has said repeatedly at several international platforms: “Soil is our life, our very body. And if we forsake soil, in many ways, we forsake the planet.”
- These are practice are in growing phase with the expectation that they are safe for society, augment their incomes and ensure food security for the masses through ample availability of food at affordable prices.

However, certain conducted studies which shows certain negative aspect of it such as

- Studies conducted by ICAR in India show that with the adoption of natural farming yields go down for major staple crops like wheat and rice by as much as 30 to 50 per cent.
- Given that India is going to be the most populous country on the planet in 2023, we need to take policy decisions with better and more scientific evidence if we want to avoid a Sri Lanka-like fiasco.
- Use of Modern-technological tools to enhance the crop production:
- AI/ML (Artificial Intelligence and Machine Learning), GIS (Geographical Information System), which can use enormous data to bring about precision in farming.
- Use of sensors, drones, satellites, and LEOs (low earth orbits), space technologies, cloud computing, are all bursting out to provide the basis for a revolutionary epoch.
- Drips, hydroponics, and aeroponics, vertical farming, are all available for mankind to get much more with very little exploitation of the planet’s natural resource endowment.

Government’s initiative for sustainable agriculture:

- Mission Organic Value Chain Development for North Eastern Regions (MOVCDNER):
- It is a Central Sector Scheme, a sub-mission under National Mission for Sustainable Agriculture (NMSA), in North-Eastern states
- which aims to development of certified organic production in a value chain mode to link growers with consumers and to support the development of entire value chain starting from inputs, seeds, certification, to the creation of facilities for collection, aggregation, processing, marketing, and brand building initiative.

Paramparagat Krishi Vikas Yojana (PKVY) :

- It is an elaborated component of Soil Health Management (SHM) of major project under National Mission of Sustainable Agriculture (NMSA) which promotes organic farming through adoption of organic village by cluster approach and Participatory Guarantee System (PGS) certification.

Rashtriya Krishi Vikas Yojana:

- The scheme has come a long way since its inception in 2007 and has been implemented across two plan periods (11th and 12th). The scheme incentivizes States to increase public investment in Agriculture & allied sectors.
- Therefore, there is need to address certain areas of concerns for sustainable farming
- Precise and efficient use of Subsidy: In India, specifically, we have the culture of free power, free water, almost 80 to 90 per cent subsidy on urea, and so on. These subsidy policies may have been good in the 1960s or the 1970s when the country was hugely food deficit. But they are continuing and even increasing. So, effective and target subsidy should be provided with ‘sunset’ timing.
- Thus, Precision farming needs to be promoted to get more output with less exploitation of natural resources while considering that natural resources are not exploited. This will help in sustainable food grain production which can feed the planet.

3.4 Economic reforms beyond liberalization

- The Indian economy recovery has been better than that of most countries.

- In the recent past growth suffered because of an excessive focus on structural reforms while neglecting the smoothening of shocks. Current policy has responded to the latter.
- Given this ups and downs, the talk of the necessity of reforms is again in the air.

So what reforms are required?

- The IMF-WB holy trinity of structural land, labour and other market-opening reforms harms many domestic citizens and, beyond a point, runs into severe resistance that imposes large political costs.
- Liberalisation has reached a point of diminishing returns.
- Organic reform will take place as states compete.
- Improving the supply-side has many other aspects. In choosing from the reform menu, the Centre must be guided by feasibility and pragmatism and ensure that benefits accrue to a majority.

What should be done?

- The focus should be on leveraging the special circumstances that currently favour India.
- These include the impetus Covid-19 has given to digital aspects, where India has a comparative advantage, the possibility of supply chain diversification away from China, moving to a net zero economy and harnessing green initiatives as a source of investment and innovation.
- Attention should be given to developing skills and capabilities, improving employability, augmenting infrastructure, reducing logistics and other business costs through better Centre-state coordination, and enhancing the quality of governance and counter-cyclical regulation with good incentives.
- Much can be done to improve data use and privacy, functioning of courts and police.
- Instead of wasting political capital on reforms that encounter large resistance and shock the system, reforms should enhance favourable trends.

Role of Public Sector Banks

- Improvements in PSB governance and risk-based lending profiles have resulted in falling NPA ratios and strong capital adequacy even under the pandemic shocks.
- Diversity in institutions and approaches makes for a more stable financial sector.
- PSBs have garnered Rs 1.7 trillion in their Jan Dhan accounts, while private banks have hardly any.
- PSBs can leverage their advantages in low-cost deposits through many co-lending opportunities and partnerships.
- This is not the time to disrupt the recovery in credit growth by Privatizing PSBs.
- PSBs should be allowed to compete and raise resources on their own.
- Only those who cannot do so, or have other serious weaknesses, should be allowed to exit through the privatisation or merger route.

Exchange rate:

- There are recommendations that the rupee should be completely market-determined since this would benefit exporters.
- But pass-through of exchange rate depreciation is much faster in Indian imports, which are dominated by dollar-denominated commodities such as crude oil.
- Indian exporters largely have little market power and are forced to share the benefits of depreciation.
- Many studies show they do not gain from volatility.
- As imported inflation rises, monetary tightening follows and hurts the real sector. Any gain to exporters from overshooting is temporary.
- Market panics and large deviations from competitive real exchange rates hurt the economy and most participants.
- Lower volatility in the real exchange rate helps both gainers and losers when there are changes in the rupee value.
- Thus the intervention by the central bank that prevents overshooting has facilitated the working of markets and their discovery of equilibrium values.
- Thus moving beyond liberalisation, focus must be on leveraging India's special circumstances and areas

where India has a comparative advantage.

3.5 Emergency Credit Line Guarantee Scheme

- The scheme was launched as a part of the Atma Nirbhar Bharat package for the Micro, Small, and Medium Enterprises (MSME) borrowers to mitigate the distress caused by the COVID-19 pandemic.
- The scheme was initially announced in May 2020 and then over a period of time, the Finance Ministry has expanded the scope of the ECLGS.
- Recently (May 2021), ECLGS 4.0 has been introduced which provides 100 percent guarantee cover to loans up to Rs.2 crore to hospitals/nursing homes/clinics/medical colleges for setting up on-site oxygen generation plants, interest rate capped at 7.5%.

Emergency Credit Line Guarantee Scheme – Key Points

- The Scheme allowed additional funding of up to Rs.3 lakh crores to different sectors, especially Micro, Small, and Medium Enterprises (MSME) and MUDRA borrowers.
- Under the ECLGS, all loans sanctioned under the Guaranteed Emergency Credit Line (GECL) facility will be provided with additional credit. However, there are two specifications:
- The scheme would be applicable for loans sanctioned from the date of announcement of the scheme to October 31, 2020, [Now September 3, 2021] OR
- Guarantees for an amount of Rs.3 lakh crore are issued (whichever happens first) Disbursement is permitted up to December 31, 2021.

Major objectives of ECLGS:

- As per this scheme, 100% guarantee coverage is to be provided by National Credit Guarantee Trustee Company Limited (NCGTC) to the Member Lending Institutions (MLI), Banks, Financial Institutions, and Non-Banking Financial Companies (NBFC)
- The Scheme aims at mitigating the economic distress faced by MSMEs by providing them additional funding in the form of a fully guaranteed emergency credit line.
- It shall also provide credit to the sector at a low cost, thereby enabling the small sector businesses to meet their operational liabilities and restart their manufacturing and work

Who is eligible under the ECLG Scheme?

- As per the latest eligibility criteria with the launch of the expanded Emergency Credit Line Guarantee Scheme, the following criteria had to be met to be applicable for a loan under the scheme:
- Enterprises with a turnover of up to Rs. 250 crores (FY 2019-20) with outstanding loans up to Rs. 50 crores, as of February 29, 2020
- GECL credit provided will be up to 20% of the borrower's total outstanding credit as of February 29, 2020.
- The maximum amount of loan that can be availed under the scheme is Rs. 5 crores.

Tenure & Interest Rates under ECLGS

- The loan tenure is for 4 years and the moratorium period of 1 year on the principal amount is also applicable [Now the loan tenure is 5 years]

Interest rates under ECLGS have also been capped:

- 25% for Banks and Financial Institutions
- 14% for Non-Banking Financial Companies
- The National Credit Guarantee Trustee Company Ltd (NCGTC) is not allowed to charge any Guarantee Fee from the Member Lending Institutions that are included under this scheme.

ECLGS 4.0 – Expansion of the Scheme

- On 31st May 2021, the Indian government notified the expansion of the ECLGS. Under the version of ECLGS 4.0:

- 100 percent guarantee cover is being provided to hospitals/nursing homes/clinics/medical colleges for loans of up to Rs 2 crores at an interest rate of 7.5 percent. It is given for setting up on-site oxygen generation plants.
- The eligible borrowers who earlier had a loan tenure of four years can now avail of a loan tenure of five years.
- Additional ECLGS assistance of up to 10% of the outstanding as of February 29, 2020, to borrowers covered under ECLGS 1.
- The 500 crore loan ceiling under ECLGS 3.0 is being discontinued.
- The maximum additional ECLGS assistance to each borrower is being limited to 40% or Rs.200 crore, whichever is lower.
- Civil aviation sector is an eligible borrower under ECLGS 3.0.

About ECLGS 2.0

- The scheme was announced in November 2020 as a part of the Atma Nirbhar Bharat 3.0 package.
- The Emergency Credit Line Guarantee Scheme has been expanded to 27 new sectors, including the health sector.
- These 27 sectors have been identified by the Kamath Committee for one time debt restructuring. Power, construction, textiles, real estate, tourism are few among the many sectors identified.
- Individual beneficiaries for both, professional and self-employed people have also been included in the scheme
- The tenor has been upgraded to 5 years with a 1-year moratorium on repayment of principal.
- About National Credit Guarantee Trustee Company Limited
- NCGTC or the National Credit Guarantee Trustee Company Limited was registered under the Companies Act, 1956 in 2014.
- It is a wholly-owned company of the Government of India.
- It was established by the Department of Financial Services, Ministry of Finance.
- The main role of the Organisation is to design credit guarantee programs, to share the risk of lending among the lenders, and facilitate financial access to a prospective borrower
- Conclusively, to revise the economy of the country which faced major disturbances due to the COVID lockdown, the Government of India decided to take charge of making the country self-dependent. And, the Emergency Credit Line Guarantee Scheme is one of those initiatives.

3.6 Digital lending

- Several Indians have ended their lives owing to harassment by recovery agents of unregulated digital lending apps mostly linked to entities based in China.
- The apps offering quick loans without much documentation or collateral to unsuspecting borrowers mushroomed in the country during the COVID-19 pandemic.
- It became a popular option for borrowing money, especially for cash-strapped families and people facing joblessness.
- However, their high interest rates, short repayment windows, coercive recovery methods and misuse of personal information have prompted the Reserve Bank of India (RBI) and Central probe agencies to crack down on the entities that run these loan apps and the payment gateways and crypto exchanges used by them to transfer overseas the money extracted from borrowers.

How it works

- The apps offer loans, ranging from ₹2,000 to ₹20,000, to thousands of customers with minimum KYC requirements and based only on online verification.
- According to the police, to provide a loan, the apps ask customers to upload their Aadhaar card, PAN card and a live photograph.
- Customers are also asked to share a One Time Password (OTP) that is generated.

- The borrowers give various permissions while activating the app, giving it complete access to their contact list, location, chats, photo gallery and camera.
- This information is then uploaded to servers hosted in China and other parts of the world.
- And the loan recovery agents operate from call centres situated in different parts of the country that have access to the data stored in these servers.
- The catch is that at the time of sanctioning the loan, 15%-25% of the amount is deducted as processing fee and the remaining sum carries an interest rate ranging from 182% to 365% per annum.
- A steep rate of penalty is added to the total repayable amount in case of default.
- The rate of recovery of loans is as high as 90%. The net profit is 25% or more.

Measures taken

- On August 10, the RBI issued its first set of guidelines to crack down on illegal activities in the digital lending industry.
- As per the new norms, all loan disbursements and repayments will be required to be executed only between the bank accounts of the borrower and the regulated entities — such as a bank or an NBFC — without any pass-through or pool account of the lending service providers or any third party.
- The norms are designed to end regulatory arbitrage and protect customers, and puts the onus on the regulated entities on behalf of whom the apps do the lending.
- Going forward the passage of a law banning lending by unauthorised entities and the creation of a self-regulatory organisation for digital lenders will bring transparency to the industry.

3.7 Human Development Index (HDI)

- India's rank on the Human Development Index has slipped from 130 in 2020 to 132 in 2021, in line with a global fall in HDI scores in the wake of the Covid-19 pandemic, shows the Human Development Report 2021-22.
- A report on the 2021 Human Development Index (HDI) is part of the Human Development Report 2021-2022 released by the United Nations Development Programme.
- The HDI measures the average achievement of a country in three basic dimensions of human development — a long and healthy life, education, and a decent standard of living.
- It is calculated using four indicators — life expectancy at birth, mean years of schooling, expected years of schooling, and the Gross National Income (GNI) per capita.

Indian Scenario:

- India ranked 132nd among 191 countries and territories on the 2021 Human Development Index (HDI). The decline in the country's performance from its previous level was on account of a fall in life expectancy.

Key points:

- India's latest HDI value of 0.633 places the country in the medium human development category, lower than its value of 0.645 in the 2020 report.
- The report attributes the drop in HDI from 0.645 in 2019 to 0.633 in 2021 to India's falling life expectancy — from 69.7 years to 67.2 years during the survey period.
- India's expected years of schooling stand at 9 years, down from 12.2 years in the 2020 report, although the mean years of schooling is up at 6.7 years from 6.5 years in the 2020 report.
- Although India retained its 132nd position in the Gender Development Index, the female life expectancy dropped from 71 years in the 2020 report to 68.8 years in the 2021 report.
- The mean years of schooling for females declined from 12.6 to 11.9 years in the corresponding period.
- India scored 0.123 in the Multi-Dimensional Poverty Index (MPI) with a headcount ratio of 27.9 per cent, with 8.8 per cent population reeling under severe multidimensional poverty.
- Over the last decade, India has lifted a staggering 271 million out of multidimensional poverty, the report noted.

Asian Countries:

- Among India's neighbours, Sri Lanka (73rd), China (79th), Bangladesh (129th), and Bhutan (127th) are ranked above India, while Pakistan (161st), Nepal (143rd), and Myanmar (149th) are worse off.
- The report said around 90 per cent of countries registered a decline in their HDI value in 2020 or in 2021.

3.8 India banned exports of broken rice

India, the world's largest exporter of rice, has banned exports of broken rice.

Key details:

- It has banned the exports amid a 6 per cent reduction in paddy acreage in the ongoing Kharif season and increase in rice prices.
- It has also imposed a 20 per cent duty on exports of various grades of rice, except basmati.
- Area sown under paddy has dipped by 2.2 million hectares this Kharif over the last amid a shortfall of rain in major rice-producing states like West Bengal, Jharkhand, Bihar, and Uttar Pradesh.
- India exports 20-22 million tonne rice annually, including 4 million tonne basmati rice.

Rice Growing Regions of India:

The rice growing areas in the country can be broadly grouped into five regions as given below:

North-Eastern Region:

- This region comprises of Assam and North eastern states.
- In Assam rice is grown in the Basin of Brahmaputra River.
- This region receives very heavy rainfall and rice is grown under rain fed condition.

Eastern Region:

- It region comprises of Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Eastern Uttar Pradesh, and West Bengal.
- In this region rice is grown in the basins of Ganga and Mahanadi rivers and has the highest intensity of rice cultivation in the country.
- This region receives heavy rainfall and rice is grown mainly under rainfed conditions.

Northern Region:

- This region comprises of Haryana, Punjab, Western Uttar Pradesh, Uttarakhand, Himachal Pradesh, and Jammu & Kashmir.
- The region experiences low winter temperature and single crop of rice from May-July to September-December is grown.

Western Region:

- This region comprises of Gujarat, Maharashtra, and Rajasthan.
- Rice is largely grown under rainfed condition during June-August to October – December.

Southern Region:

- This region comprises of Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu.
- Rice is mainly grown in deltaic tracts of Godavari, Krishna, and Cauvery rivers and the non-deltaic rainfed area of Tamil Nadu and Andhra Pradesh.

Why India is so crucial for global rice supply?

- India's rice exports touched a record 5 million tonnes in 2021, more than the combined shipments of the

world's next four biggest exporters of the grain: Thailand, Vietnam, Pakistan, and the United States.

- India, the world's biggest rice consumer after China, has a market share of more than 40% of the global rice trade.
- High domestic stocks and low local prices allowed India to offer rice at deep discounts over the past two years, helping poorer nations, many in Asia and Africa, grapple with soaring wheat prices.
- India exports rice to more than 150 countries, and any reduction in its shipments would fuel food inflation.
- The grain is a staple for more than 3 billion people, and when India banned exports in 2007, global prices shot to new peaks.
- It would also allow rival suppliers Thailand and Vietnam to raise prices that are already more than 30% above Indian shipments.
- Other than serving Asian buyers like China, Nepal, Bangladesh and the Philippines, India supplies rice to countries such as Togo, Benin, Senegal, and Cameroon.

3.9 Shell Companies

- The Serious Fraud Investigation Office (SFIO) arrested the mastermind, named Dortse (board member of Jilian India Ltd) who incorporated multiple shell companies linked to China and provided dummy directors on their boards to run the fraudulent businesses.
- Pursuing this serious financial crime, Ministry of Corporate Affairs (MCA) conducted simultaneous search-and-seizure operations at Bangalore and Hyderabad offices.

What are shell companies?

- A shell company is a corporation without active business operations or actual assets. They exist only on paper and has no office and no employees, but may have a bank account or passive investments, etc.
- They can be used for legitimate reasons such as for obtaining different forms of financing, conducting a hostile takeover or issuing Initial Public Offerings.
- These types of corporations are not all necessarily illegal, but they are sometimes used illegitimately such as for tax evasion, tax avoidance, money laundering or anonymity.

Indian laws to deal with shell companies

- Benami Transaction (Prohibition) Amendment Act 2016
- The Prevention of Money Laundering Act 2002
- The Companies Act, 2013.
- Tax evasion vs. Tax avoidance
- Tax avoidance is a legal strategy to minimize the amount of income tax owed by an individual or a business by taking advantage of the loop holes and ambiguities in the legal provisions.
- Tax evasion is a serious financial crime that uses illegal methods to evade tax liability. It may result in hefty fines and penalties.
- Examples of tax avoidance like claiming deductions under chapter VIA of the Income Tax Act 1961 such as donations under section 80G
- Examples of tax evasion are underreporting income, window dressing of accounts, falsifying deductions, hiding money, etc.

Serious Fraud Investigation Office (SFIO)

- As per the Companies Act 2013, SFIO is a multi-disciplinary organization under the Ministry of Corporate Affairs, consisting of experts in the field of accountancy, forensic auditing, banking, law, information technology, taxation, etc. for detecting and prosecuting or recommending for prosecution white-collar crimes/frauds.
- The SFIO conducts investigations on receipt of a report of the Registrar or on intimation of a special resolution passed by a company, request from any department of the Central Government or a State

Government or in the public interest.

- SFIO is headed by a Director as Head of Department in the rank of Joint Secretary to the Government of India.
- The Headquarter of SFIO is in New Delhi, with five Regional Offices in Mumbai, New Delhi, Chennai, Hyderabad & Kolkata.

3.10 Windfall tax

- The Central government on July 1, introduced a windfall profit tax of ₹23,250 per tonne on domestic crude oil production, which has fluctuating rates.
- Finance Minister defended the windfall tax saying that it was done after full consultation with the industry and explained the introduction of the windfall tax as a way to rein in the “phenomenal profits” made by some oil refiners who chose to export fuel to reap the benefits of skyrocketing global prices while affecting domestic supplies
- It also imposed an additional excise levy on diesel, petrol and air turbine fuel (ATF) exports.
- India has been importing discounted Russian oil – the windfall tax was targeted mainly at Reliance Industries Ltd and Russian oil major Rosneft-backed Nayara Energy

About Windfall Tax:

- The U.S. Congressional Research Service (CRS) defines a windfall as an “unearned, unanticipated gain in income through no additional effort or expense”.
- They are called so as the profits are derived from an external or unprecedented event or from something the firm actively did not participate in — for instance, the energy price-rise as a result of the Russia-Ukraine conflict.
- Typically, it’s levied as a one-off tax retrospectively over and above the normal rates of tax.
- In oil markets, price fluctuation leads to volatile or erratic profits for the industry. Hence, tax is levied to redistribute unexpected gains when high prices benefit producers at the expense of consumers.
- It can be used to fund social welfare schemes, and as a supplementary revenue stream for the government.

Need for Windfall Tax

- To narrow the country’s widened trade deficit on account of rising prices of oil, gas, and coal
- Rise in prices due to pandemic recovery and supply issues resulting from the Russia-Ukraine conflict and consequent increase in energy demands.
- The rising prices imply huge profits for energy companies while resulting in hefty gas and electricity bills for households – widening income inequality.
- The “grotesque greed” of big oil and gas companies eg. the largest energy companies in the first quarter of the year made combined profits of close to \$100 billion.

Challenges

- Adverse impact on investments: Introducing a temporary windfall profit tax reduces future investment because prospective investors will internalise the likelihood of potential taxes when making investment decisions and avoid uncertainty on account of retrospective nature of tax and influence of unexpected events and surprises.
- Such taxes are populist and politically opportune in the short term.
- The IMF said taxes in response to price surges may suffer from design problems—given their expedient and political nature.
- Difficulty in constituting true windfall profits; their determination and level of normalisation of profit. A CRS report, for instance, argues that if rapid increases in prices lead to higher profits, in one sense it can be called true windfalls as they are unforeseeable but on the other hand, companies may argue that it is

the profit they earned as a reward for risk-taking to provide the end user with the petroleum product.

- Issue of determining who should be taxed — only the big companies responsible for the bulk of high-priced sales or smaller companies as well or whether producers with revenues or profits below a certain threshold should be exempt.

IMF Guidelines on the matter

- Introduce a permanent tax on windfall profits from fossil fuel extraction.
- Use caution in temporary taxes on windfall profits because these tend to increase investor risk, may be more distortionary (especially if poorly designed or timed), and do not provide revenue benefits above those of a permanent tax on economic rents.
- The tax should be imposed on a share of economic rents (meaning excess profits).
- Economic rents generally arise from fossil fuel extraction as a result of the fixed supply and diverse. Rent-targeting taxes raise revenue without reducing investment or increasing inflation.
- Encourage the switch to renewable energy, given the need for decarbonization in energy generation. Transitioning to renewable energy improves energy security.
- Design principles: Tax should apply to a clear measure of excess profit, tax should not apply to revenue as this can be inflationary and reduce investment. The tax should allow for carry forward of losses to ensure symmetrical treatment

3.11 Discrimination in labour market

Sources of data:

- 61st round of National Sample Survey on employment-unemployment (2004-05)
- The Periodic Labour Force Survey in 2018-19 and 2019-20
- All-India Debt and Investment Survey by the Centre
- 'India Discrimination Report', compiled by the NGO Oxfam India from 2004-05 to 2019-20
- Data from the Union Ministry of Statistics and Programme Implementation

Meaning of Discrimination

- Discrimination in the labour market is when people with identical capabilities are treated differently because of their identity or social backgrounds

Meaning of Endowments

- It includes education, parental education and years of experience
- Discrimination against women
- Hardly any difference across religion or caste-based sub-groups, or the rural-urban divide.
- Gender discrimination in India is structural resulting in great disparities between earnings of men and women under 'normal circumstances'
- Unemployed women have a high level of education and equal endowments as their male counterparts.
- Unemployment occurs because of prejudice; social biases such as women won't be able to keep late hours or travel for work; and family and social pressure wherein women withdraw from the workforce or are not allowed to work.
- Overall discrimination in wages for women in this period increased from 67.2% in 2004-05 to 75.7% in 2019-20.
- Discrimination against SC and ST communities
- In rural India such discrimination is increasing in casual employment.
- However, there has been some decline due to endowments.
- For SC/ST employees, discrimination declined from 69.1% in 2004-5 to 34.6% in 2018-19 but increased to 39.3% in 2019-2020.
- Discrimination against Dalits and Adivasis and religious minorities like Muslims:

- Exists in terms of accessing jobs, livelihoods, and agricultural credits.
- For the Muslim community, the endowments are very low and limited access to regular salaried jobs. Therefore, Muslims are largely self-employed in family-owned businesses.
- They are also part of specialised jobs like cobbling or carpentry, where there is no (or little) competition. So, the discrimination against Muslims is low simply because the endowments are also low.
- Discrimination in employment for the Muslim community dropped from 31.5% in 2004-5 to 21.9% in 2018-19 to 3.7% in 2019-2020.

How to fight Discrimination

- There are two possible strategies to reduce these biases: the first focuses on the victims of discrimination by empowering them to break free from the stereotypes that target them, while the second focuses on perpetrators.

The first approach should be the heart of the policy.

- Frame initiatives in favour of equal opportunities allow identifying priority actions: enabling women to play on an equal footing with men through a better sharing of domestic and family tasks, which would be made possible by extending paternity leave; improving the employability of older people by preventing the risk of obsolescence of their skills; improving the educational and professional integration of people with a vulnerable and migrant
- Regarding the second approach, there has a wide range of legislation to combat discrimination.
- The actions against the perpetrators of discrimination are rarely brought to court.
- Thus, making the threat of legal sanctions credible is critical: this requires a better knowledge of the legal framework and the possible remedies in case of discrimination in the labour market, and the presence of trained interlocutors to assist employees in their efforts.

Oxfam

- It is founded and led by Oxfam International (British founded confederation) in 1942 consisting of 21 independent charitable organizations
- Focusing on the alleviation of global poverty
- Oxfam India was one of the organisations that faced an Income Tax survey recently. Oxfam maintained that it was compliant with domestic laws.

National Statistical Office (NSO):

- Formed with the merger of NSSO and CSO.
- The Statistics Wing of Ministry of Statistics and Programme Implementation (MOSPI)
- Recommended by Rangarajan Commission
- To implement and maintain statistical standards and coordinate statistical activities of Central and State agencies.
- It consists of 3 directors.

3.12 Inflation and Monetary policy

- India is not out of the woods on inflation management, with inflation in August at 7% and the wholesale price index (WPI) at 12.4%.
- However, in comparison with the US and most European countries, where inflation is higher (8 to 12 per cent), India has done fairly well. Pakistan has an inflation at 27 per cent, and Sri Lanka at 64 per cent. On average, during 2004-05 to 2013-14, inflation averaged 7.9% (and GDP growth was at 7.7 per cent) and during 2014-15 to 2022-23 it's 1% inflation but GDP growth at 5.6% has been poorer.
- It seems that GDP growth is likely to come down a bit lower than the RBI's earlier forecast of 7.2 per cent, and the IMF's 7.4 per cent. If India manages 7 per cent GDP growth along with 7 per cent inflation in 2022-

23, it would still do fairly well, though that is not the most desirable outcome.

3.13 Prompt Corrective Action Framework (PCAF)

After reviewing the performance of the Central Bank of India, The Reserve Bank of India (RBI) removed it from its Prompt Corrective Action Framework (PCAF) after the lender showed improvement in various financial ratios, including minimum regulatory capital and net non-performing assets (NNPAs).

About PCAF:

- The PCA norm is a supervisory tool of RBI.
- It is imposed when a bank breaches certain regulatory threshold: –
- Capital: (Breach of Capital Risk Adequacy Ratio)
- Asset quality, net NPAs
- Leverage
- Aim: to initiate and implement remedial measures in a timely manner, so as to restore its financial health.
- Scope: Apply to all banks operating in India including foreign banks operating through branches or subsidiaries.

Conditions for Withdrawal of restrictions imposed:

- if no breaches in risk thresholds in any of the parameters are observed as per four continuous quarterly financial statements based on Supervisory comfort of the RBI, including an assessment on sustainability of profitability of the bank.

3.14 National Logistics Policy

- The Prime Minister launched the National Logistics Policy (NLP) at Vigyan Bhawan, New Delhi; a significant step in fulfilling the 'Pran' of India being a developed country.
- India is the 5th largest economy in the world but the logistics cost is high at around 13-14%.
- Under the policy a new digital platform Ease of logistics Services -E-Logs has also been started. Through this portal, industry associations can directly take up any such matters which are causing problems in their operations and performance with the government agencies.

About:

- The National Logistics Policy is an overarching interdisciplinary, cross-sectoral, and multi-jurisdictional framework for the development of the entire logistics ecosystem and will bring new energy to all sectors.
- Objective: To develop world-class modern infrastructure through the integration of all stakeholders in holistic planning and implementation so that efficiency and synergy are achieved in the execution of the project.

Need for logistics policy:

- High logistics costs in India as compared to other developed economies.
- To improve the competitiveness of Indian goods both in domestic as well as export markets.
- To improve efficiency cutting across various sectors of the economy, encouraging value addition and enterprise.

Steps to improve logistics sector:

- PM Gati Shakti – National Master Plan for multi-modal connectivity
- Unified Logistics Interface Platform or ULIP will bring all the digital services related with the transportation

sector on a single portal, freeing the exporters from a host of very long and cumbersome processes.

- Increasing total capacity of Indian ports and the average turn-around time of container vessels, which has come down from 44 hours to 26 hours.
- For promoting export, 40 air cargo terminals have been constructed and 30 airports have been provided cold-storage facilities as well as 35 multimodal hubs are coming up in the country.
- Many new waterways are being built for eco-friendly and cost-effective transportation
- Kisan Rail and airports having the facility of Krishi Udaan have been constructed.
- Paperless EXIM trade process through e-sanchit and faceless assessment for customs
- Provisions for e-way bills, FASTag that have greatly increased the efficiency of the logistics sector.
- Unified tax system like GST in smoothening the issues of the logistics sector
- Change in drone policy and connecting it with the PLI scheme is promoting the use of drones in the logistics sector.
- Sagarmala, Bharatmala scheme and Dedicated Freight Corridors to improve logistics connectivity for systematic infrastructure development.

Benefits of the policy:

- National Logistics Policy has immense potential for development of infrastructure, expansion of business and increasing employment opportunities.
- Improve competitiveness
- Ensuring quick last mile delivery, end transport-related challenges, save time and money of the manufacturers, prevent wastage of the agro-products and improvement in coordination.
- Strengthening of the logistics sector will not only make the life of common man easier but will also help in increasing the respect of labour and workers.
- Issues related to logistics are reduced and when the country's exports increase, small industries and the people working in them benefit the most.

Way forward

- The PM said, "When parameters, roadmap and timeline for performance come together then policy plus performance equal to progress emerges"
- The world is looking at India as a 'democratic superpower' and the 'extraordinary talent ecosystem' of India has impressed the field experts. Today the world's attitude towards India is changing for the better.

3.15 Shrinkflation

- Shrinkflation is the practice of reducing the size of a product while maintaining its sticker price.
- It is a form of hidden inflation.
- Raising the price per given amount is a strategy employed by companies, mainly in the food and beverage industries, to stealthily boost profit margins or maintain them in the face of rising input costs.
- Shrinkflation is also referred to as package downsizing in business and academic research.
- A less common usage of this term may refer to a macroeconomic situation where the economy is contracting while also experiencing a rising price level.

What are the Major Causes of Shrinkflation?

- Higher Production Costs: Rising production costs are generally the primary cause of shrinkflation.
- Increases in the cost of ingredients or raw materials, energy commodities, and labour increase production costs and subsequently diminish producers' profit margins.
- Reducing the products' weight, volume, or quantity while keeping the same retail price tag can improve the producer's profit margin.
- Intense Market Competition: Fierce competition in the marketplace may also cause shrinkflation.
- The food and beverage industry are generally an extremely competitive one, as consumers are able to

access a variety of available substitutes.

- Therefore, producers look for options that will enable them to keep the favour of their customers and maintain their profit margins at the same time.

3.16 Basel III norms

Fundraising via Basel III-compliant and infrastructure bonds seen continuing over next few months, say analysts.

What is the Basel Framework:

- The Basel Framework are capital regulations developed by the Basel Committee on Banking Supervision (BCBS) in response to the deficiencies in financial regulation revealed by the financial crisis of 2007–08.
- Objective: To improve the banking sector's ability to absorb shocks arising from financial and economic stress, to reduce the risk of spill over from the financial sector to the real economy, to raise capital standard and to implement strong international compensation standards aimed at ending practices that lead to excessive risk-taking
- They were first enforced in the G-10 countries in 1992.

Evolution:

Basel I

- Adopted in 1999
- It defined capital and structure of risk weights for banks and focussed on credit risk
- Minimum capital requirement fixed at 8% of risk-weighted assets (RWA)

Basel II

- Adopted in 2004
- It defined three types of risk as – operational risk, market risk, capital risk
- About Basel III norms:
- The new standards will come into effect on January 2023
- Risk-based capital requirements (RWAs) and interest rate risk were introduced for the first time.
- The new standards aim at increasing capital requirements, it introduces requirements on liquid asset holdings and funding stability
- Key difference between the Basel II and Basel III: Basel III framework prescribes more of common equity, creation of capital buffer, introduction of Leverage Ratio, Introduction of Liquidity coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR).
- Leverage Ratio: The leverage ratio is calculated by dividing Tier 1 capital by the bank's average total consolidated assets. Banks are expected to maintain a leverage ratio in excess of 3% under Basel III
- Liquidity Coverage Ratio: The liquidity coverage ratio (LCR) denotes to highly liquid assets held by financial institutions to meet short-term obligations. The LCR is a requirement under Basel III for a bank to hold high-quality liquid assets (HQLAs) sufficient to cover 100% of its stressed net cash requirements over 30 days. The LCR is calculated as: $LCR = \frac{HQLAs}{Net\ cash\ outflows}$.
- Net stable funding (NSF): The net stable funding is to ensure that banks maintain a stable funding profile in relation to the composition of their assets and off-balance sheet activities.

About Basel III compliant Bonds:

- The bonds qualify as tier II capital of the bank, and has a face value of Rs 10 lakh each, bearing a coupon rate of 6.24 per cent per annum payable annually for a tenor of 10 years.
- There is a call option after 5 years and on anniversary thereafter.
- Call option means the issuer of the bonds can call back the bonds before the maturity date by paying back the principal amount to investors.

3.17 Depreciation in rupee

There has been a consistent deterioration of Indian Rupee's (INR) exchange rate with respect to the US Dollar (\$) over the last few months. It breached the psychologically significant exchange rate level. The fall in Rupee has been going on since the war in Ukraine began, and crude oil prices started going up.

What is Depreciation?

- Currency depreciation is a fall in the value of a currency in a floating exchange rate system.
- For example: USD 1 used to equal to Rs. 70, now USD 1 is equal to Rs. 77, implying that the rupee has depreciated relative to the dollar i.e., it takes more rupees to purchase a dollar.
- Impact of Depreciation of Indian Rupee: Depreciation in rupee is a double-edged sword for the Reserve Bank of India.

Positive:

- Weaker rupee should theoretically give a boost to India's exports, but in an environment of uncertainty and weak global demand, a fall in the external value of rupee may not translate into higher exports.

Negative:

- It poses risk of imported inflation, and may make it difficult for the central bank to maintain interest rates at a record low for longer.
- India meets more than two-thirds of its domestic oil requirements through imports.
- India is also one of the top importers of edible oils. A weaker currency will further

What determines the rupee's value?

- The value of any currency is determined by demand for the currency as well as its supply.
- When the supply of a currency increases, its value drops.
- In the wider economy, central banks determine the supply of currencies, while the demand for currencies depends on the amount of goods and services produced in the economy.
- In the forex market, the supply of rupee is determined by the demand for imports and various foreign assets. So, if there is high demand to import oil, it can lead to an increase in the supply of rupees in the forex market and cause the rupee's value to drop.
- The demand for rupees in the forex market, on the other hand, depends on foreign demand for Indian exports and other domestic assets.
- When there is great enthusiasm among foreign investors to invest in India, it can lead to an increase in the supply of dollars in the forex market which in turn causes the rupee's value to rise against the dollar.

What is causing the rupee to lose value against the dollar?

- Since March this year, the U.S. Federal Reserve has been raising its benchmark interest rate causing investors seeking higher returns to pull capital away from emerging markets such as India and back into the U.S.
- This, in turn, has put pressure on emerging market currencies which have depreciated significantly against the U.S. dollar so far this year.
- Even developed market currencies such as the euro and the yen have depreciated against the dollar and the dollar index is up more than 9% so far this year.
- Some analysts believe that the RBI's surprise decision to raise rates in May could have simply been to defend the rupee by preventing any rapid outflow of capital from India.
- India's current account deficit, which measures the gap between the value of imports and exports of goods and services, is expected to hit a 10 year high of 3.3% of gross domestic product in the current financial year.
- Foreign investors are unlikely to plough capital into India when investment yields are rising in the U.S.

What lies ahead?

- It is neither wise nor possible for the RBI to prevent the Rupee from falling indefinitely. Defending the Rupee will result in India exhausting its forex reserves over time because global investors have much bigger financial clout.
- Most analysts believe that the better strategy is to let the Rupee depreciate and act as a natural shock absorber to the adverse terms of trade. Thus, RBI should focus on containing inflation which is its legal mandate.
- The Government should contain its borrowings. Higher borrowings (fiscal deficit) by the Government consume domestic savings. Hence, the Industrial and other sectors of economy are forced to borrow from abroad.
- Over the long run, the Rupee is likely to continue to depreciate against the Dollar given the significant differences in long-run inflation between India and the U.S.
- The U.S. Federal Reserve has raised rates to tackle historically high inflation in the US that hit a 41-year high of 8.6%.
- This will induce other countries and emerging markets in particular to raise their own interest rates to avoid disruptive capital outflows and to protect their currencies.
- As interest rates rise across the globe, the threat of a global recession also rises as economies readjust to tighter monetary conditions.

Conclusion:

- Analysts believe that, over the long run, the rupee is likely to continue to depreciate against the dollar given the significant differences in long run inflation between India and the U.S.
- The exchange rate has fallen to its historical low of 80, however Indian Rupee has shown a better performance in comparison to currencies of emerging economies.
- The inflation divides between the U.S and India will continue to further depreciate the Rupee. Nonetheless, with proactive fiscal and monetary measures, India can stabilize its currency value.

3.18 Banking system liquidity

- Recently, For the first time since May 2019, the banking system liquidity situation turned into a deficit mode in September, 2022, by comparison, the liquidity surplus was to the tune of Rs 8 lakh crore in November 2021.
- As the Reserve Bank of India (RBI) was providing liquidity support to the economy, which was dealing with the after-effects of the Covid pandemic.

In this context let us know about Banking system liquidity:

What is banking system liquidity?

- Liquidity in the banking system refers to readily available cash that banks need to meet short-term business and financial needs.
- On a given day, if the banking system is a net borrower from the RBI under Liquidity Adjustment Facility (LAF), the system liquidity can be said to be in deficit and if the banking system is a net lender to the RBI, the system liquidity can be said to be in surplus.
- The LAF refers to the RBI's operations through which it injects or absorbs liquidity into or from the banking system.

What has triggered present banking liquidity deficit?

- Economists say that there are various factors over the last few months that have led to the current situation.
- If an improvement in demand for credit has led to the same, the recent advance tax outflow has further aggravated the situation.

- Besides, there is the continuous intervention of the RBI to counter the fall in the rupee against the US dollar.
- As per the, chief economist, India Ratings.
- “The deficit in the liquidity situation has been caused by an uptick in the bank credit, advance tax payments by corporates, intervention of the RBI into the forex market, and also incremental deposit growth not keeping pace with credit demand.”

Latest data by RBI:

- The outstanding bank credit stood at Rs 124.58 lakh crore in August 26, 2022 and has increased by 4.77% (Rs 5.7 lakh crore) from Rs 118.9 lakh crore in March 25, 2022.
- However, deposit growth was just 3.21% (Rs 5.3 lakh crore) at Rs 169.94 lakh crore in August 26, 2022, from Rs 164.65 lakh crore in March 25, 2022.

How can a tight liquidity condition impact consumer?

- A tight liquidity condition could lead to a rise in the government securities yields and subsequently lead to a rise in interest rates for consumers too.
- The 10-year government bond yield increased to 7.23% on September 21, 2022, from 7.18% on August 20, 2022.
- Short-term rates would increase at a faster pace as the direct reflection of tighter liquidity and RBI’s rate hike would be on these papers.
- Expected rise in repo rate: A rise in the repo rate will lead to a higher cost of funds. Banks will increase their repo-linked lending rates and the marginal cost of funds-based lending rate (MCLR), to which all loans are linked to. This rise will result in higher interest rates for consumers.

What can RBI do to deal with this situation?

- As per the Economist, RBI’s actions will depend upon the nature of the liquidity situation. If the current liquidity deficit situation is temporary and is largely on account of advance tax flow, the RBI may not have to act, as the funds should eventually come back into the system.
- However, if it is long-term in nature then the RBI may have to take measures to improve the liquidity situation in the system.

Way Forward:

- Slow deposit growth could constrain robust credit growth. Banks need to increase deposit rates to incentivize greater deposit mobilization. Many banks have started special deposit schemes over the past month, offering more than 6 per cent interest on fixed deposits.
- RBI will have to infuse liquidity through different tools to ensure a steady flow of credit. Going forward, the rise in inflation and interest rates could also pose a threat to credit growth.

3.19 The Dharamshala Declaration

- Recently a gathering of State Tourism Ministers to discuss on modes and mechanisms to develop tourism in India, came up with ‘The Dharamshala Declaration’ (2022).
- It draws inspiration from central government’s ‘Whole of Government’ approach, which enables the breaking down of silos and encouraging synergies across various government corridors.

About Dharamshala Declaration:

- On the occasion of World Tourism Day (September 27), Dharamshala Declaration aims to recognise India’s role in contributing towards global tourism as well as focusing on recovery by also promoting domestic tourism — which has been overlooked for long.
- In the declaration, the Tourism Ministry has come up with a strategy and action plan to encourage more

Indians to travel domestically and explore India's natural, cultural, and spiritual beauty while simultaneously reaching the goal of an 'Ek Bharat Shrestha Bharat' (interaction and mutual understanding).

- The 'Ek Bharat Shrestha Bharat' scheme was launched to celebrate the cultural vibrancy of India while establishing a strong mechanism to inculcate nationalism and cultural awareness among the citizens of our nation.
- In parallel, the Ministry has also been working with the Ministry of External Affairs to identify 20 Indian missions abroad with the highest tourist footfalls to India and build country-specific strategies to attract foreign tourists.

Rethinking and reimagining tourism:

- Tourism has been one of the sectors severely affected by COVID-19. The Government of India's Emergency Credit Line Guarantee Scheme (ECLGS) was recently enhanced to ₹5 lakh crore to benefit enterprises in hospitality and related sectors such as hotels and restaurants, marriage halls, travel agents, tour operators, adventure, and heritage facilities.
- The pandemic has also given us the time to reset and rethink the way forward for tourism in India.
- The Ministry of Tourism, after wide-ranging consultations, has prepared a draft National Tourism Policy 2022, which aims at improving the framework conditions for tourism development in the country, supporting tourism industries, strengthening tourism support functions, and developing tourism sub-sectors.
- The guiding principles include promoting sustainable, responsible, and inclusive tourism in line with our civilisational ethos.
- From Gautama to Gandhi, India has always spoken about the inherent need to live harmoniously with nature and within our means. The National Green Tourism Mission aims at institutionalising this approach.
- The National Tourism policy also aims to give impetus to digitalisation, innovation and technology through the National Digital Tourism Mission and skilling through the Tourism and Hospitality Sector Skill Mission.
- The policy also gives a special impetus to private sector participation through public-private-partnerships (PPP).
- Various other schemes involving PPP mode development will also compliment tourism sector, like the National Investment Pipeline (NIP) and the National Monetisation Pipeline (NMP).

Important features of draft National Tourism Policy 2022:

- To promote investment in the tourism sector, industry status is proposed to be granted to the sector, along with formally granting infrastructure status to hotels.
- It identifies 5 key areas to be given significant focus in the next 10 years — green tourism, digital tourism, destination management, skilling the hospitality sector and supporting tourism-related to MSMEs.
- Relief Measures and Taxation Breaks for the contact-sensitive industry, which has been the worst sufferer over the last two years of the COVID-19 pandemic,
- Other framework conditions to help the sector, especially in the wake of the pandemic. The overall mission and vision are being laid out to improve the experience of tourists, foreign as well as local.

Potential during the G20 presidency:

- The country has an opportunity to position itself as a major tourism destination during India's presidency of the G20 (2023).
- India welcomes delegates from the 20 countries/European Union, including personnel from the central banks and finance ministries ranging from anti-corruption and agriculture to health, culture and tourism and foreign ministers, and other ministerial meetings.
- Even as the final list of cities is being finalised based on a set of transparent criteria such as conference infrastructure, accommodation availability, rankings in Swachh Bharat and other parameters, close to 35 cities with this potential have already been identified.
- During this time, the plan is to ensure due rigour, dedication and showcase the country's cultural richness

while welcoming the world to India.

- The Ministry of Tourism also plans to work with other Ministries to bring in necessary interventions such as visa reforms, ease of travel, traveller-friendly and improved immigration facilities at airports.

Way forward:

- Over the past few months, all the major tourism indices such as domestic air passenger traffic, hotel occupancy and tourist footfalls have shown signs of recovery and are going back to pre-pandemic levels.
- By mid-2024, we would be at pre-pandemic levels, with India achieving \$150 billion as GDP contribution from tourism and \$30 billion in foreign exchange earnings with 15 million foreign tourist arrivals.
- By 2030, India is estimated to grow at 7%-9% compounded annual growth rate and we expect the enabling policy framework to bring in \$250 billion in GDP contribution from tourism, 140 million jobs in the tourism sector.
- India's age-old dictum of 'Atithi Devo Bhava' will come to the fore as it welcomes tourists across the world under a new age tourism policy.

4. Science & Technology

4.1 Anti-radiation pills

With fears of a nuclear disaster at Ukraine's Zaporizhzhia power plant growing, the European Union has decided to pre-emptively supply 5.5 million anti-radiation pills to be distributed among residents in the vicinity.

What is a radiation emergency?

- These are unplanned or accidental events that create radio-nuclear hazard to humans and the environment.
- Such situations involve radiation exposure from a radioactive source and require prompt intervention to mitigate the threat.
- Dealing with such an emergency also involves the use of anti-radiation tablets.

What are anti-radiation pills?

- Potassium iodide (KI) tablets, or anti-radiation pills, are known to provide some protection in cases of radiation exposure.
- They contain non-radioactive iodine and can help block absorption, and subsequent concentration, of radioactive iodine in the thyroid gland.

How do these pills work?

- After a radiation leak, radioactive iodine floats through the air and then contaminates food, water and soil.
- While radioactive iodine deposited during external exposure can be removed using warm water and soap, according to the World Health Organisation, the bigger risk is inhaling it.
- Internal exposure, or irradiation, occurs when radioactive iodine enters the body and accumulates in the thyroid gland.
- The thyroid gland, which uses iodine to produce hormones to regulate the body's metabolism, has no way of telling radioactive from non-radioactive iodine.
- Potassium iodide (KI) tablets rely on this to achieve 'thyroid blocking'.
- KI pills taken a few hours before or soon after radiation exposure ensure that non-radioactive iodine in the medicine is absorbed quickly to make the thyroid "full".
- Because KI contains so much non-radioactive iodine, the thyroid becomes full and cannot absorb any more iodine – either stable or radioactive – for the next 24 hours.
- But KI pills are preventive only and cannot reverse any damage done by radiation to the thyroid gland.
- Once thyroid gland absorbs radioactive iodine, those exposed are at a high risk of developing thyroid cancer.

Is the method fool-proof?

- Anti-radiation pills do not provide 100% protection.
- The effectiveness of KI also depends on how much radioactive iodine gets into the body and how quickly it is absorbed in the body
- Also, the pills are not meant for everybody. They are recommended for people under 40 years of age.
- While it can protect the thyroid against radioactive iodine, it cannot protect other organs against radiation contamination.

4.2 Chinook helicopters

The US Army has grounded its fleet of CH-47 Chinook helicopters after finding the helicopter to be at risk of engine fires. The Indian Air Force (IAF) also operates a fleet of Chinook Helicopters.

Why has the US Army grounded Chinooks?

- The US Army operates around 400 Chinook helicopters which are medium-lift, multi-role helicopters manufactured by Boeing who perform a variety of tasks in support of Army operations.
- As per the news, the Chinook fleet has been grounded by the US Army as it is suspected that some engine fires broke out on an unspecified number of helicopters.

About Chinook

- India had signed a 3-billion-dollar deal with the US in 2015 for the purchase of 15 Chinook heavy lift and 22 AH-64E Apache attack helicopters.

Features:

- The Chinook is a multi-role, vertical-lift platform, which is used for transporting troops, artillery, equipment and fuel.
- It is also used for humanitarian and disaster relief operations and in missions such as transportation of relief supplies and mass evacuation of refugees.
- Chinooks have a unique twin engine, tandem rotor design which has become one of the most visibly recognised symbols of the American armed forces.
- The helicopter, which can carry around 10 tonnes of load, significantly enhanced IAF's air lift capabilities.
- The US Army has grounded its fleet of CH-47 Chinook helicopters after finding the helicopter to be at risk of engine fires. The Indian Air Force (IAF) also operates a fleet of Chinook Helicopters.

Why has the US Army grounded Chinooks?

- The US Army operates around 400 Chinook helicopters which are medium-lift, multi-role helicopters manufactured by Boeing who perform a variety of tasks in support of Army operations.
- As per the news, the Chinook fleet has been grounded by the US Army as it is suspected that some engine fires broke out on an unspecified number of helicopters.

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4.3 Cervavac

Cervavac, India's first indigenously developed quadrivalent human papillomavirus (qHPV) vaccine for the prevention of cervical cancer has been developed.

About the new vaccine

- Cervavac was developed by the Pune-based Serum Institute of India in coordination with the Government of India's Department of Biotechnology (DBT).
- HPV vaccines are given in two doses and the antibodies that develop after both are administered can last up to six or seven years.

- Unlike Covid vaccines, booster shots may not be required for the cervical cancer vaccine.
- Until now, the HPV vaccines available in India were produced by foreign manufacturers at an approximate cost of Rs 2,000 to Rs 3,500 per dose.
- Cervavac is likely to be significantly cheaper, slated to cost approximately Rs. 200 to 400.
- It has also demonstrated a robust antibody response that is nearly 1,000 times higher than the baseline against all targeted HPV types and in all dose and age groups.

How common is cervical cancer in India?

- Despite being largely preventable, cervical cancer is the fourth most common cancer among women globally, according to the WHO.
- Current estimates indicate that every year approximately 25 lakhs women are diagnosed with cervical cancer, and over 75 thousand dies from the disease in India, and 83 % of invasive cervical cancers are attributed to HPVs 16 or 18 in India, and 70% of cases worldwide.
- India accounts for about a fifth of the global burden of cervical cancer, with 1.23 lakh cases and around 67,000 deaths per year.
- Almost all cervical cancer cases are linked to certain strains of human papillomavirus (HPV), a common virus that is transmitted through sexual contact.
- While the body's immune system usually gets rid of the HPV infection naturally within two years, in a small percentage of people the virus can linger over time and turn some normal cells into abnormal cells and then cancer.

4.4 Inflatable Aerodynamic Decelerator (IAD)

The Indian Space Research Organisation (ISRO) just declared that it has successfully demonstrated the new technology with Inflatable Aerodynamic Decelerator (IAD).

What is IAD?

- IAD is a technique used for an atmospheric entry payload.
- An inflatable envelope and an inflatant (anything that inflates the envelope, like air or helium) make up the inflatable aerodynamic decelerator.
- While entering the atmosphere, it inflates like a balloon and decelerates the lander.
- The inflatant is designed to fill the inflatable envelope to a condition such that it surrounds the payload meant to enter the atmosphere of a planet or satellite and causes aerodynamic forces to slow it down.
- In simpler words, IAD is designed to increase drag upon entering the atmosphere of any planetary body, like Earth, Mars, or even Moon.
- Its shape is maintained by a closed, gas-pressured body and the inflatant gas is also generated internally. Some versions also use ram air or both.
- Some space agencies, including NASA, have already successfully tested advanced versions of the technology, including the supersonic and hypersonic variants.
- However, for near future missions of ISRO, the current version that it tested is perfect.

ISRO's IAD

- ISRO's latest IAD has been designed and developed at Vikram Sarabhai Space Centre.
- It also has a spin rocket that is ejectable.
- The inflatable structure is made out of Kevlar fabric, which is a very strong synthetic fibre and also heat resistant to withstand atmospheric pressure and temperature changes.
- On top of it, it's coated with polychloroprene, an oil and wax resistant rubber, which can also withstand extreme temperatures.
- The Liquid Propulsion Systems Centre (LPSC), created the pneumatic inflation system for the IAD system.
- In the inflation system, it uses compressed nitrogen stored in a bottle.

- It has consistently decreased the payload's velocity through aerodynamic drag while maintaining the expected trajectory during the test flight.

Where does ISRO intend to use it?

- The IAD will help ISRO in performing many space tasks effectively including recovery of spent stages of rockets, for landing payloads on missions to other planetary bodies.

4.5 China's first fully solar-powered unmanned aerial vehicle

China's first fully solar-powered unmanned aerial vehicle, Qimingxing-50, or Morning Star-50, has successfully completed its maiden test flight with all onboard systems functioning optimally.

The Mechanics

- With a wingspan of 164-ft, the drone is a large machine powered entirely by solar panels.
- The high-altitude, long-endurance (HALE) UAV can stay airborne for long durations.
- Flies above 20-km altitude where there is stable airflow with no clouds.
- Helps these drones to make the maximum use of solar equipment to stay functional for extended durations.
- In fact, the drone can operate without a break for months, even years.

Cross between drone and satellite

- The fact that the drone can operate in near-space – 20 km to 100 km above the Earth's surface – makes it capable of carrying out satellite-like functions.
- These drones are also referred to as 'High Altitude Platform Stations' or pseudo-satellites.
- China already has this capacity, but the Qimingxing-50's long-endurance provides an added advantage to make this capability available over a longer period.

Significance

- Cost-effective to build
- Easy to launch and operate
- Being entirely powered by clean energy from the Sun, it can help boost China's capabilities to operate in near-space and over the ocean.
- If satellite services are not available for, say, time-sensitive operations or in case of wartime disruption, then near-space UAVs can step in to fill the operational gap.
- This HALE UAV is capable of conducting high-altitude reconnaissance, apart from monitoring forest fires, providing communication and environment relay.

Has any other country achieved this?

- In July this year, the US Army helped test a solar-powered, near-space Airbus Zephyr S drone that set a new record by being airborne for 42 days.

Note:

- India's PLI Scheme for Drone Industry
- Will incentivize emergence of Advanced Automotive Technologies global supply chain in India
- Help create additional employment of over 7.6 lakh people
- Incentives worth ₹ 26,058 crore will be provided to industry over five years
- It will bring fresh investments of over ₹5,000 crore in three years and incremental production of over ₹ 1,500 crore

4.6 Rabies vaccine

- Death of a 12-year-old girl in Kerala from rabies, despite having multiple inoculations of the rabies vaccine.
- From 2016-18, around 300 laboratory-confirmed rabies deaths were reported in India. The WHO says India is endemic for rabies and accounts for 36% of the world's deaths.
- As per available information, Rabies causes 18,000-20,000 deaths every year.
- About 30-60% of reported rabies cases and deaths in India occur in children under the age of 15 years, as bites that occur in children often go unrecognised and unreported, it notes.

About Rabies

- Rabies is a disease that is caused by a family of viruses called the lyssaviruses and found in a range of mammals.
- The virus targets the central nervous system and is nearly 100% fatal to the host animal if it succeeds in infecting it.
- It is most likely to spread to people from the bite of an infected dog or a cat as they are the most common pets.

Significance of Rabies vaccine

- The vaccine is made up of an inactivated virus that is expected to induce the body into producing antibodies that can neutralise the live virus in case of infection.
- There is no single-shot rabies vaccine or one that offers permanent immunity.
- Administering a vaccine, even after being bitten by a rabid animal, is effective because the virus is slow-moving and it can be several weeks before the disease manifests into a fatal encephalitis.
- A shot of rabies immunoglobulin (rabies-antibodies against the virus derived either from people or horses) followed by a four-week course of anti-rabies vaccine, is nearly guaranteed to prevent rabies.
- There are mainly two ways of administering the rabies vaccine – firstly, post-exposure prophylaxis (PEP) which is given to persons who have been exposed via a bite to an animal suspected to be infected. The vaccines are administered either into the muscles, or into the skin.
- Secondly, Pre-Exposure Prophylaxis (PrEP) which is given ahead of time to persons who have a high risk of being infected, such as veterinarians.
- The advantage of a PrEP is that if bitten, one doesn't need an immunoglobulin injection, and two subsequent shots of the vaccine will suffice for full protection, unlike the four-course prescription in the case of PEP.
- However, the WHO doesn't recommend PrEP as a general preventive.

Rabies vaccines in India

- There are at least six rabies vaccines approved for India and all contain inactivated virus made of duck, chicken or human cell cultures.
- They are marked as safe, efficacious and with long immunity.
- They are available for free in government dispensaries .

Concerns

- Hospitals running out of vaccines
- Knowledge about vaccines and treatment is still inadequate in India.
- No centralised database of vaccine availability is maintained.
- Requirement of multiple shots of vaccine as well as immunoglobulin makes sticking to the schedule challenging.

Way forward

- India has committed to eliminate the disease by 2030 which requires vaccination of dogs who are deemed responsible for 99% of all rabies infections in people

- Hence, the government in its 2021 plan, called the 'National Action for Plan — Rabies Elimination', aims to vaccinate at least 70% of all dogs in a defined geographical area annually for three consecutive years.
- With this, a degree of herd immunity is expected leading to eventual elimination within eight years. Rather than inoculate all dogs, the plan is to identify 'rabies hotspots' in the country and target them.

4.7 Quick Reaction Surface to Air Missile (QRSAM) system

- Defence Research and Development Organisation (DRDO) and Indian Army have successfully completed six flight-tests of Quick Reaction Surface to Air Missile (QRSAM) system.
- All the mission objectives were met establishing pin-point accuracy of the weapon system with state-of-the-art guidance and control algorithms including warhead chain.

Quick Reaction Surface to Air Missile (QRSAM) system

- It is a short-range surface-to-air missile (SAM) system.
- Designed and developed by DRDO to provide a protective shield to moving armoured columns of the Army from enemy aerial attacks.
- QRSAM is a canister-based system – stored and operated from specially designed compartments.
- The system is capable of detecting and tracking targets on the move and engaging targets with short halts.

Can operate on the move with search and track capability & fire on short halt

- The entire weapon system has been configured on mobile and is capable of providing air defence on the move.
- It has a range of 25 to 30 km.
- It also consists of two radars – Active Array Battery Surveillance Radar and Active Array Battery Multifunction Radar – with one launcher.
- Both radars have 360-degree coverage with “search on move” and “track on move” capabilities.
- The system uses a single-stage solid propelled missile and has a mid-course inertial navigation system with two-way data link and terminal active seeker developed indigenously by DRDO.

4.8 Project 17A Taragiri

Third stealth frigate of Project 17A Taragiri launched in Mumbai by Mazagon Dock Shipbuilders Ltd. (MDL) with an estimated cost of Project being around ₹25,700 crore.

Features:

- Indigenously designed Taragiri will have a state-of-the-art weapon, sensors, an advanced action information system, an integrated platform management system, world class modular living spaces, a sophisticated power distribution system and a host of other advanced features.
- It will be fitted with a supersonic surface-to-surface missile system and the ship's air defence capability is designed to counter the threat of the enemy aircraft and the anti-ship cruise missiles would revolve around the vertical launch and long-range surface to air missile system
- The vessel is being launched with an approximate launch weight of 3,510 tonnes and is designed by the Indian Navy's in-house design organisation — the Bureau of Naval Design
- The ship, 149.02 metre long and 17.8 metre wide, is propelled by a CODOG combination of two gas turbines and two main diesel engines which are designed to achieve a speed of over 28 knots at a displacement of approximately 6,670 tonnes.

Structure:

- The ship has been built using integrated construction methodology which involves hull blocks

construction in different geographical locations and integration/erection on slipway at MDL.

- The keel (the timber or steel structure along the base of a ship to increase support & stability) of Taragiri was laid on September 10, 2020, and the ship is expected to be delivered by August 2025.
- The steel used in the hull construction of P17A frigates is an indigenously developed DMR 249A which is a low carbon micro alloy grade steel manufactured by the SAIL.

Background

- The second ship of P17A class Udaygiri was launched on May 17 this year and is expected to start the sea trials during the second half of 2024. The keel of the fourth and the final ship was laid on June 28.

4.9 Ethereum

- Ethereum has undergone a technical upgrade and this upgrade is called the 'Merge'.
- Ethereum has changed its algorithm from the Proof-of-Work (PoW) consensus method of setting transactions to the Proof-of-Stake (PoS)
- Ethereum is introducing a new programming language that will help developers build more robust decentralised applications.

About:

- PoW algorithms are used in most blockchains. PoW is a system of distributed consensus that relies on computing power to prove that someone has put in the required amount of work to create a valid block proportional to their influence on the network. These algorithms create a trust less system e., trust the system and not one person or one organization.
- PoS is a type of consensus mechanism used to validate cryptocurrency transactions through randomly selected validators. With this system, owners of the cryptocurrency can stake their coins, which gives them the right to check new blocks of transactions and add them to the blockchain. This is known as concept of staking.

Significance of the upgrade:

- Increased scalability: Decreased size of blocks will reduce amount of data that nodes need to process making the network more scalable and easier to process more transactions per second while maintaining the same level of security.
- Easy to store: Make it easier for people running nodes to store the blockchain on less expensive hardware. That will make the network more resistant to spam attacks
- Reduce the amount of energy required to secure the network will make it more environmentally friendly and attract more users.
- Concept of staking: meaning locking up your tokens like depositing money in a savings account. The more tokens you stake, the more influence you have over the network.
- Faster transaction times due to less gap between blocks

Low transaction latency

- No need for hardware mining infrastructure: due to trust less, distributed consensus algorithm that doesn't require costly hardware.

About Ethereum:

- Launched in 2014 second-largest cryptocurrency in the world
- Ethereum is a decentralized, open-source blockchain. Ether is the native cryptocurrency of the platform.
- Ethereum was conceived in 2013 by programmer Vitalik Buterin.
- Ethereum today has the highest adoption among developers and it is the primary infrastructure layer of Web3.

Way forward

- The need of the hour is to work on an indigenous solution of the people, for the people, and by the people.
- A digital infrastructure based on blockchain technology will transform the digital ecosystem in India, and will enable the future of digital services, platforms, applications, content, and solutions.
- Considering the current situation worldwide, one can safely assume that we are at the beginning of the curve, but the days are not far.

4.10 Flex Fuel Technology

- India's first 'flex fuel' car, a Toyota sedan has been developed as part of a new pilot. The nationwide pilot has been initiated as part of a government-led push to car – makers for adopting alternative fuels and to replicate the commercial deployment of this particular technology in other markets such as Brazil, Canada, and the US.
- There are over 21 million flex fuel vehicles in the United States
- Brazil is the leader in this segment.

The Mechanics of Flex Fuel Technology:

- A flex fuel, or flexible fuel, vehicle has an internal combustion engine (ICE), but unlike a regular petrol or diesel vehicle, this can run on more than one type of fuel, or even a mixture of fuels.
- The ICE can use a blend of petrol and ethanol or methanol and can also run on 100 per cent petrol or ethanol as well.
- This is made possible by equipping the engine with a fuel mix sensor and an engine control module (ECM) programming that senses and automatically adjusts for any ratio of designated fuels.
- Flex fuel vehicles have one fuel system, and most components are the same as those found in a conventional petrol-only car.
- Modifications such as special ethanol-compatible components are required to adjust to the different chemical properties and energy content in ethanol or methanol. The ECM is also calibrated to accommodate the higher oxygen content of ethanol.

Significance:

- The use of ethanol blending sharply lowers harmful pollutants such as carbon monoxide, sulphur, and carbon and nitrogen oxides.
- It will de-leverage the country's dependence on oil imports for transportation
- Many flex fuel vehicles have improved acceleration performance when operating on higher ethanol blends.

Concerns:

- It marginally decreases fuel efficiency when using ethanol for motive power.
- Over 90% of ethanol produced in the country, came from sugarcane alone and sugarcane production is usually very water-intensive.
- Further, since sugarcane is a politically important crop, there is a perceived political angle to the ethanol/methanol blending push.

About ethanol production in India:

- Currently, around 9.5% ethanol blending with petrol has been achieved in fuel dispensed in pumps in most metros and it is likely that the targeted 10 per cent ethanol blending will be achieved by November 2022. But this is slated for a major bump up, with the government's 2025 target of 20 per cent blending of ethanol in petrol envisaged in its National Biofuel Policy 2018.

5. Environment & ecology

5.1 Climate reparations

Facing the worst flooding disaster in its history, Pakistan has begun demanding reparations, or compensation, from the rich countries that are mainly responsible for causing climate change.

What are climate reparations?

- Climate reparations refer to a call for money to be paid by the Global North to the Global South as a means of addressing the historical contributions that the Global North has made (and continues to make) toward climate change.
- Countries in the Global North are responsible for 92% of excess global carbon emissions.
- Despite this, countless studies have shown that countries across the Global South are facing the sharpest end of the consequences when it comes to climate change—from severe heat waves in India to flooding in Kenya and hurricanes in Nicaragua.
- In repeated public statements, Pakistan’s Minister for Climate Change has been saying that while her country makes negligible contribution to global warming, it has been among the most vulnerable to climate change.
- The current floods have already claimed over 1,300 lives, and caused economic damage worth billions of dollars.
- Pakistan’s demand for reparations appears to be a long shot, but the principles being invoked are fairly well-established in environmental jurisprudence.
- Almost the entire developing world, particularly the small island states, has for years been insisting on setting up an international mechanism for financial compensation for loss and damage caused by climate disasters.

Historical emissions argument

- The demand for compensation for loss and damage from climate disasters is an extension of the universally acknowledged “Polluter Pays” principle.
- In the climate change framework, the burden of responsibility falls on those rich countries that have contributed most of the greenhouse gas emissions since 1850, generally considered to be the beginning of the industrial age.
- The United States and the European Union, including the UK, account for over 50% of all emissions during this time.
- If Russia, Canada, Japan, and Australia too are included, the combined contribution goes past 65%, or almost two-thirds of all emissions.

Significance of Historical responsibility:

- Carbon dioxide remains in the atmosphere for hundreds of years, and it is the cumulative accumulation of this carbon dioxide that causes global warming.
- A country like India, currently the third largest emitter, accounts for only 3% of historical emissions.
- China, which is the world’s biggest emitter for over 15 years now, has contributed about 11% to total emissions since 1850.

Implications:

- While the impact of climate change is global, it is much more severe on the poorer nations because of their geographical locations and weaker capacity to cope. This is what is giving rise to demands for loss and damage compensation.
- Countries that have had negligible contributions to historical emissions and have severe limitations of resources are the ones that face the most devastating impacts of climate change.

Admission of Responsibility

- The UN Framework Convention on Climate Change (UNFCCC), the 1994 international agreement that lays down the broad principles of the global effort to fight climate change, explicitly acknowledges this differentiated responsibility of nations.
- It is this mandate that later evolved into the \$100 billion amount that the rich countries agreed to provide every year to the developing world.
- The Warsaw International Mechanism (WIM) for Loss and Damages, set up in 2013, was the first formal acknowledgment of the need to compensate developing countries struck by climate disasters. It so far has focused mainly on enhancing knowledge and strengthening dialogue.
- At the recent climate conference in Glasgow, a three-year task force was set up to discuss a funding arrangement.
- According to a recent report by the UN Office for the Coordination of Humanitarian Efforts (UNOCHA), prepared for the UN General Assembly, annual funding requests related to climate-linked disasters averaged \$15.5 billion in the three-year period between 2019 and 2021.
- The economic loss from cyclone Amphan in India and Bangladesh in 2020 has been assessed at \$15 billion.
- The report said that the United States alone is estimated to have inflicted more than \$1.9 trillion in damages to other countries due to its emissions. Then there are non-economic losses as well, including loss of lives, displacement migration, health impacts, damage to cultural heritage.
- The report also said that the unavoidable annual economic losses from climate change were projected to reach somewhere between \$290 billion to \$580 billion by the year 2030.

5.2 National Clean Air Programme

- An analysis by the environmental think tank, Centre for Science and Environment, reported “barely any difference” in trends in particulate matter pollution (PM2.5) between the group of cities under the National Clean Air Programme (NCAP) and those outside its ambit.
- It covers 132 of India’s most polluted or so-called non-attainment cities.
- This is defined as a city whose air quality did not meet the national ambient air quality standards of 2011 to 2015.
- The NCAP launched in 2019 aims to bring a 20%-30% reduction in pollution levels from PM2.5 and PM10 particles by 2024, using 2017 pollution levels as a base.
- The CSE in its national analysis of PM2.5 levels in cities for which data is available found that between 2019 and 2021, only 14 of 43 (NCAP) cities registered a 10% or more reduction in their PM2.5 level between 2019 and 2021.
- On the other hand, out of 46 non-NCAP cities, 21 recorded significant improvement in their annual PM2.5 value with 5% or more decline between 2019 and 2021.
- There is hardly any difference between the performance of NCAP and non-NCAP cities between 2019 and 2021.
- Cities in Punjab, Rajasthan and Maharashtra dominated the list of cities which registered a significant increase in PM2.5 levels between 2019 and 2021.
- The cities of Haryana, Madhya Pradesh and Gujarat dominate the list of non-NCAP cities that have registered significant increase in air pollution levels.

National Clean Air Programme (NCAP)

- It was launched by the MoEFCC in January 2019 as a long-term, time-bound, national level strategy that features:
- Making determined efforts to deal with the air pollution problem across the country in a comprehensive manner.
- Achieving 20% to 30% reduction target in Particulate Matter concentrations by 2024 where 2017 is kept as the base year for the comparison of concentration.

- Identification of 122 non-attainment cities across the country based on the 2014-2018 Air Quality data.
- Non- Attainment Cities are the cities which do not meet the National Ambient Air Quality Standards.
- Preparation of the city specific action plans including measures to strengthen the monitoring network, reduce vehicular/industrial emissions, increase public awareness
- Implementation of the city specific action plans to be regularly monitored by Committees at Central and State level namely Steering Committee, Monitoring Committee and Implementation Committee.
- Facilitating collaborative, multi-scale and cross-sectoral coordination between the relevant central ministries, state governments and local bodies.
- Establishing a right mix with the existing policies and programmes.
- Increasing number of monitoring stations in the country including rural monitoring stations, technology support.
- Emphasis on awareness and capacity building initiatives.
- Setting up of certification agencies for monitoring equipment, source apportionment studies, emphasis on enforcement, specific sectoral interventions etc.

National Ambient Air Quality Standards

- National Ambient Air Quality Standards are the standards for ambient air quality set by the Central Pollution Control Board (CPCB)
- The CPCB has been conferred this power by the Air (Prevention and Control of Pollution) Act, 1981.
- Ambient Air Quality Standards contains 12 pollutants.

The pollutants that are covered under the National Ambient Air Quality Standards include:

- Sulphur dioxide (SO₂),
- Nitrogen dioxide (NO₂),
- The particulate matter having a size less than 10 microns (PM₁₀),
- The particulate matter having a size less than 2.5 microns (PM_{2.5}),
- Ozone
- Lead
- Carbon monoxide (CO)
- Arsenic
- Nickel
- Benzene
- Ammonia, and
- Benzopyrene

5.3 MY VILLAGE, MY FOREST

- Kuharianwali, a village in the Fazilka district of Punjab, has become a trendsetter in expanding forest cover. As of 2021, according to data from the Forest Research Institute, the district had just 1.34 per cent forest cover, one of the lowest in the state.
- The district administration knew it had to do something to drastically change the picture. So, they launched a pilot project called “ MY VILLAGE, MY FOREST’ by applying ‘MIYAWAKI METHOD’ as a result the forest is now self-sustainable as plants have gained enough strength.

What is this Miyawaki method is all about?

- Miyawaki is a technique pioneered by Japanese botanist Akira Miyawaki, that helps build dense, native forests in a short time.
- It has revolutionised the concept of urban afforestation by turning backyards into mini-forests.
- This method includes planting trees (only native species) as close as possible in the same area which not only saves space, but the planted saplings also support each other in growth and block sunlight reaching

the ground, thereby preventing the growth of weed.

- The saplings become maintenance-free (self-sustainable) after the first three years.

Miyawaki Process:

- The native trees of the region are identified and divided into four layers — shrub, sub-tree, tree, and canopy.
- The quality of soil is analysed and biomass which would help enhance the perforation capacity, water retention capacity, and nutrients in it, is mixed with it.
- A mound is built with the soil and the seeds are planted at a very high density — three to five sapling per square meter.
- The ground is covered with a thick layer of mulch.

Benefits of Miyawaki Method:

- **Faster Process and Dense Forest:** This method creates mini forests. They grow 10 times faster and become 30 times denser and 100 times more biodiverse than those planted through conventional methods.
- **Faster Regeneration of Land:** Miyawaki forests are designed to regenerate land in far less time. It takes over 70 years for a forest to recover on its own.
- **Self-Sustainable:** The saplings become self-sustainable after the first three years.
- **Environmental Benefits:** These mini forests help lower temperatures in concrete heat islands, reduce air and noise pollution, attract local birds and insects, and create carbon sinks.
- **Miyawaki method helps to create a forest in just 20 to 30 years, while through conventional methods it takes anywhere between 200 to 300 years.**

5.4 Urban Flooding

- There was unprecedented flooding in India's tech capital Bengaluru.
- Urban Flooding is an inundation of land in a constructed setting, particularly in densely populated areas.
- Previous such flooding incidents: Kochi, Mumbai, Hyderabad, and Chennai.

Reasons

Natural:

- **Higher rainfall:** As per the IMD, monsoon has become frequent and unpredictable.
- **Storm surges (for coastal cities):**g., Cyclone Amphan in 2020 flooded the streets of Kolkata. Within eastern India, the storm killed 98 people and caused \$13.8 billion (2020 USD).
- **Groundwater levels:** In Chennai, the replenished groundwater table across the city after rains becomes a challenge for several buildings with basements.

Anthropogenic:

- **Encroachment on Drainage Channels:** In Indian cities and towns, due to increased land prices and less availability of land in the city centre.
- **New developments are coming up in low-lying areas, usually as encroachments over lakes, wetlands and riverbeds.**
- **A large number of wetlands that soaked up the rainwater has encroached.** Bangalore had 262 lakes in the 1960s; now only 10 of them hold water.
- **Climate Change:** Exacerbated by changing climate, resulting in extreme events. The climate change has caused an increase in the frequency of short duration heavy rainfall leading to higher water run-off.
- **Rapid and unplanned urbanization:** In Bengaluru, stormwater drains were not directly connected to its water bodies. In some places, the runoff water was flowing into constructed deviation canals. CAG found that this increased the chances of flash floods.

- Destruction of mangroves: Mumbai lost about 40% of its mangroves between 1995 and 2005.
- Poor civic management of storm water drainage: CAG report (last year) pulled up Bengaluru municipality for this poor management.
- Lack of data: CAG also found that the Bengaluru municipality did not maintain proper records of the stormwater management funds allotted to it under the JNNURM.
- Lack of coordination: CAG report also noted the lack of coordination between the municipality and the Bangalore Development Authority on drainage-related matters.

Steps to mitigate urban flooding:

- Sponge Cities Mission: The idea of a sponge city is to make cities more permeable so as to hold and use the water which falls upon them.
- Implementation of Atal Mission for Rejuvenation and Urban Transformation (AMRUT) in a planned manner.
- Stormwater disposal system: The Brihanmumbai Storm Water Disposal System or BRIMSTOWAD, the project to overhaul Mumbai city's old stormwater drainage system was started after the 2005 deluge.
- Water-sensitive urban design (WSUD in Australia): regards urban stormwater runoff, and waste water as a resource rather than a nuisance or liability.
- Bioswales or 'Rain Garden' (New York): are landscape features that collect polluted stormwater runoff, soak it into the ground, and filter out pollution.

Rainwater harvesting:

- People must invest heavily in rainwater harvesting.
- Need to make sure that collection of the rainwater as much as possible, use that to recharge our aquifers and try to design our plots and apartments and gated communities as zero rainfall discharge areas.

Design on a watershed basis:

- Every lake is a micro or mini watershed. Authorities must understand that a watershed is a hydrological unit, understand how water flows and ensure that it is drained into channels and flows into the lake.
- When the lake overflows, it connects to the next downstream lake, for which they will need sluice gates that they can operate.
- For a city like Bengaluru, it takes a special kind of skill to mitigate floods. The city has an average elevation of 920 metres and cascades down into valleys and rivers on all sides. Unlike Chennai, Mumbai or Kolkata, this city is on a hill or a ridge line. It calls for great incompetence if the city can create floods.
- Therefore, there is a need to include public open spaces within the urban fabric in the form of storm management infrastructure, which could help our cities transform into water-sensitive cities.

5.5 Cheetahs reintroduction

- On September 16, a modified passenger B-747 Jumbo Jet will take off from Namibia for Jaipur to transport eight Namibian wild cheetahs, five females and three males, the founders of a new population in Kuno National Park, Madhya Pradesh.
- Moving wild animals to new locations for conservation began only in the 1960s.
- Unlike royal imports to be held in captivity, these animals require to settle down and survive in their new locations in the wild. That poses a host of different challenges.

About IUCN guidelines:

- Genetic diversity: Absence of the same can lead to inbreeding depression in the new population.
- Habitat and prey base: Physical security, enough space, and ample food so that colonies of reintroduced animals become large enough as quickly as possible to withstand fluctuations in both the environment and population size.
- Landscape viability: animals will remain susceptible to demographic and environmental events in a

landscape

- Curbing the cats' homing instincts: risks from losing the released animal from the target site and human-animal conflict

About Kuno National Park, Madhya Pradesh:

- Established in 1981 as a wildlife sanctuary in the Sheopur and Morena districts.
- In 2018, it was given the status of a national park. It is part of the Khathiar-Gir dry deciduous forests ecoregion.
- Area of 344.686 km²
- Fauna: Indian leopard, jungle cat, sloth bear, dhole, Indian wolf, golden jackal, striped hyena, and Bengal fox, chital, Sambar deer, nilgai, four-horned antelope, chinkara, blackbuck and wild boar

5.6 Vembanad lake

- Vembanad lake, is shrinking and its unique biodiversity is under threat of ecological decay despite it being declared as a Ramsar site 20 years ago.
- The lake is a source of livelihood for farmers of Kuttanad and the fisherfolk community, continues to undergo ecological degradation due to pollution and unauthorised constructions on its banks, with experts calling for "committed efforts" to save its wetland ecosystem.

Features of the Lake:

- This is the largest lake in Kerala and the longest Lake in India.
- Vembanad Lake is also known as Vembanad Kayal, Vembanad Kol, Punnamada Lake (in Kuttanad) and Kochi Lake (in Kochi).
- It is bound by Alappuzha, Kottayam and Ernakulam
- Spanning several districts of Kerala and covering a territory of more than 2033.02 km².
- The lake has its source in four rivers, Meenachil, Achankovil, Pampa and Manimala
- It is separated from the Arabian Sea by a narrow barrier island and is a popular backwater stretch in Kerala.
- Vallam Kali (i.e Nehru Trophy Boat Race) is a Snake Boat Race held every year in the month of August in Vembanad Lake.
- In 2002, it was included in the list of wetlands of international importance, as defined by the Ramsar Convention.
- It is the second-largest Ramsar site in India only after the Sundarbans in West Bengal.
- The Government of India has identified the Vembanad wetland under the National Wetlands Conservation Programme.
- The Kumarakom Bird Sanctuary is located on the east coast of the lake.
- In 2019, Willingdon Island, a seaport located in the city of Kochi, was carved out of Vembanad Lake.

Issues:

- Environmental Degradations: the lake is facing serious environmental degradation
- Causes: recurring floods, increased pollution, reduction in water spread area and increased weed growth
- Bunds on the lake were crumbling at certain places, making fishing difficult and on top of that the lake requires regular dredging and desilting.
- Tourism poses a threat to the ecology and the water quality of the lake. Resorts and residences discharge their waste into the river and many houseboats do not have bio-toilets

Solutions

- Inter-departmental committee to carry out a comprehensive study on checking the existing backwaters and to take further steps

- Local self-government departments taking action to detect and clear encroachments and demarcate the lake's boundaries
- Participation of local communities including fisherfolk and farmers in lake's revival
- Building an outer bund to prevent silt deposition and to regulate saline water intrusion into the freshwater lake
- Swaminathan Foundation report of 2011 – scientific and efficient operation of the lake
- Waste disposal and sewage treatment along the lake to be closely monitored.

Miscellaneous:

- Kuttanad is known as the rice bowl of Kerala

5.7 Blended biodiesel

- As part of efforts to reduce its carbon footprint, the Indian Air Force (IAF) is looking to fly an AN-32 transport aircraft modified to operate on 10% blended biodiesel for 200 flight hours in the next six months.
- The global aviation industry is one of the biggest emitter of greenhouse gases that cause global warming. The fuel consumption of the IAF for 2021-22 was 6.2 lakh kilo litres, which contributed 15 lakh tonnes of carbon dioxide.
- On the civil aviation front, an official from aircraft manufacturer Airbus said it had plans to offer 100% sustainable aviation fuel (SAF) compatibility on its commercial aircraft latest by 2030.
- The aircraft took flight on biodiesel blended with aviation turbine fuel (ATF) for the first time in December 2018.
- So far, an AN-32 has flown 65 hours with a 10% blend of biofuel and the performance has been very satisfactory.
- A second aircraft, a Dornier, was now undergoing ground tests after it had been cleared by the original manufacturer of the engine, Honeywell, for use of 50% biofuel.

5.8 Stubble burning

The Delhi government will spray a bio-decomposer free of cost over 5,000 acres of paddy fields in the city this year, Environment Minister Gopal Rai said on Tuesday.

About Pusa Decomposer:

- It is a bio-enzyme consisting of seven fungi that digest cellulose, lignin, and pectin in paddy straw.
- It is developed by The Indian Council of Agricultural Research (ICAR)
- It decomposes the stubble, turning it into manure, thus increases soil fertility, prevents stubble burning and reduces air pollution.

Causes of air pollution in Delhi in winters:

- Every winter air pollution spikes in the national capital and adjoining areas due to multiple reasons
- Slow wind speed
- Bursting of firecrackers
- Pollution from stubble burning
- Household emissions including domestic biomass burning

Actions taken:

- A list of emergency measures to control air pollution in Delhi-NCR, such as closing schools and stopping construction work, are undertaken each year during the winter months.

- Graded Response Action Plan, prepared by the Commission for Air Quality Management, emergency measures will now be implemented based on predictions on air quality, three days in advance.

5.9 Sea cucumbers

- The study conducted by the Counter Wildlife Trafficking team of the WCS-India (Wildlife Conservation Society- India) regarding illegal trade of marine species recorded 187 media reports citing marine wildlife seizures by various enforcement agencies in India from 2015 to 2021.
- The publication also shed light on the international trade routes for seahorse and pipefish and sharks and rays.

About the findings:

- Sea cucumbers were the most frequently seized marine species group.
- Tamil Nadu recorded the highest enforcement action followed by Maharashtra, Lakshadweep, and Karnataka.
- Sea cucumber illegal trade was followed by sea fan, seahorse and pipefish, seashell, shark and rays, sea coral and sea turtles.
- Due to the legalised trade of sea cucumbers in countries with close proximity to India, the sea cucumber consignments were often smuggled through those countries, to be laundered and then re-exported to the Southeast Asia markets (34 incidents either mentioned attempts to illicitly export sea cucumbers to neighbouring countries)

Methodology:

- Sea cucumber trade was researched using 'crime scripts', to understand how the smuggling networks operated. The crime script had been prepared on the basis of the 122 incidents of seizure bringing out what went into the preparation, pre activity, activity, and post activity phase of the smuggling of the marine group of species.
- The largest volumes were harvested as an incidental catch in unselective fisheries such as trawling and gillnetting.
- A high number of seizure incidents alone does not always indicate a high frequency of wildlife crime, and it may be a result of effective enforcement or more media interest

About Sea Cucumbers:

- Sea cucumbers are named for their resemblance to the fruit of the cucumber plant.
- These are echinoderms – marine animals with a leathery skin and an elongated body containing a single, branched gonad.
- Found on the sea floor worldwide with the greatest number being in the Asia-Pacific region
- Uses include human consumption or use in aquaculture systems. They serve a useful role in the marine ecosystem as they help recycle nutrients, breaking down detritus and other organic matter, after which bacteria can continue the decomposition process.

What are crime scripts:

- A narrative crime script is a step-by-step account of the procedures and decision-making processes involved in a particular event, usually relating to an illegal activity
- It is constructed using a logical sequence of events that is easily interpreted by an observer to make themselves a participant viewer.
- Example, an observer doesn't need to see firefighters at a burnt house to know they were there.

Impact of Illegal Wildlife Trade:

- Species face extinction because of demands arising out of illegal wildlife trade.

- Overexploitation of the wildlife resources due to its illegal trade creates imbalances in the ecosystem.
- Illegal wildlife trade as part of the illegal trade syndicates undermines the economy of the country and thereby creates social insecurity.
- Wild plants that provide genetic variation for crops (natural source for many medicines) are threatened by the illegal trade.

Various Species-Specific Enforcement Operations:

- Operation Save Kurma: To focus on the poaching, transportation and illegal trade of live turtles and tortoises.
- Operation Turtshield: It was taken up to tackle the illegal trade of live turtles.
- Operation Lesknow: To gain attention of enforcement agencies towards the illegal wildlife trade in lesser-known species of wildlife.
- Operation Clean Art: To drag attention of enforcement agencies towards illegal wildlife trade in Mongoose hair brushes.
- Operation Softgold: To tackle Shahtoosh Shawl (made from Chiru wool) illegal trade and to spread awareness among the weavers and traders engaged in this trade.
- Operation Birbil: To curb illegal trade in wild cat and wild bird species.
- Operation Wildnet: It was aimed to draw the attention of the enforcement agencies within the country to focus their attention on the ever-increasing illegal wildlife trade over the internet using social media platforms.
- Operation Freely: To check illegal trade of live birds.
- Operation Wetmark: To ensure prohibition of sale of meat of wild animals in wet markets across the country.
- India's Domestic Legal Framework for Wildlife Conservation:

Constitutional Provisions for Wildlife:

- The 42nd Amendment Act, 1976, Forests and Protection of Wild Animals and Birds was transferred from State to Concurrent List.
- Article 51 A (g) of the Constitution states that it shall be the fundamental duty of every citizen to protect and improve the natural environment including forests and Wildlife.
- Article 48 A in the Directive Principles of State policy, mandates that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.

Legal Framework:

- Wildlife (Protection) Act, 1972
- Environment Protection Act, 1986
- The Biological Diversity Act, 2002

India's Collaboration with Global Wildlife Conservation Efforts:

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- Convention on Biological Diversity (CBD)
- World Heritage Convention
- Ramsar Convention
- The Wildlife Trade Monitoring Network (TRAFFIC)
- United Nations Forum on Forests (UNFF)
- International Whaling Commission (IWC)
- International Union for Conservation of Nature (IUCN)
- Global Tiger Forum (GTF)
- About Wildlife Conservation Society:
 - It is a non-governmental organization. Founded in 1895 as the New York Zoological Society, the

organization is now headquartered at the Bronx Zoo in New York.

- It aims to conserve the world's largest wild places in 14 priority regions.

Way forward:

- Countering marine wildlife trade requires paradigm changes in fisheries management as a whole to reduce their capture in the first place. Thus, the international organization, national governments along with civil society should work to bring comprehensive changes in the conservation of marine species and prohibit their illegal trade.

5.10 Food security

- No negotiation is possible at the cost of food security, announced Union Agriculture and Farmers Welfare at the ninth session of the governing body of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) on Monday
- Crop diversity and plant genetic resources being the source of solution to breeding challenges caused by climate change.

About:

- Food is an essential fundamental right and rights of farmers producing food should not be compromised.
- The impacts of the climate crisis and biodiversity loss are putting pressure on agriculture. The struggle for climate resilient agriculture and nutritional security depends heavily on the decisions and actions of the signatories.
- Further, the pandemic and ongoing conflicts are affecting the way the world produces, supplies, and consumes food.
- Hence, we must increase the use of diverse and resilient crops and their genetic resources
- There must be a balance between genetic resources governance and use, investment and innovation, and access and Benefit Sharing to achieve future-ready solutions for agriculture and food security.

Food security in India:

- Food security is defined as “ensuring that all people have access to sufficient, safe, and nutritious food at all times in order to live a healthy and active life.”
- It considers both physical and economic access to food as well as people's dietary demands and preferences.
- Food security is built on three pillars: constant food supply, access to a balanced diet, and food usage for basic nutrition and care, as well as access to safe drinking water and sanitation.

Challenges:

- **Climate Change:** Unanticipated consequences such as Drought (because to a shortage of moisture) or floods (due to a surplus of moisture) due to change in monsoon patterns and unusually high/low temperatures. These have a detrimental influence on crop productivity and agricultural net income. It also affects changes in land use patterns and water resource availability.
- **Agricultural Prices:** Lack of remunerative prices for end goods, distressed sales, high cultivation costs combined with inappropriate market prices, and the combination of all of these activities as a barrier in the path of food security.
- **Poorly developed commodities market:** globalisation has been unable to assure more stable market pricing. As a result, agricultural pricing policy must be regulated for the benefit of the marketing community, hence promoting food security in India.
- **Bio-fuel Cultivation:** Diverges land and resource to manufacturing of ethanol at the cost of food security. From 2000 to 2010, the area under cultivation was reported to have expanded from 46 hectares to 9020 ha.

Sustainable Solutions:

- Transforming the PDS: To improve the efficiency, accountability and transparency of the system which brings supplies of wheat, rice, sugar and kerosene oil to around 800 million poor people across the country
- Fortification of government distributed food: Boost the nutritional value of the Government's Midday Meal school feeding programme, rice fortification with iron to tackle anaemia.
- Policy interventions: Climate flexibility laws, agriculture laws, agricultural waste management laws, soil carbon sequestration laws, and general natural resource management laws are all urgently needed.
- Infrastructure Requirements: The government should prioritise warehouses, roads, transportation, and market facilities. Encouragement of the PPP model in agriculture will result in speedier infrastructure development.
- Encouragement to Horticulture Products: It is critical to enhance per capita availability of food grains as well as provide the proper quantity of food items on the common man's plate in order to ensure food security. Horticulture goods require encouragement in order to increase per capita availability of food while also assuring food security.
- Capital Investment: In recent years, agriculture's share of capital investment in GDP has remained unchanged. Although capital spending has improved in recent Five-Year Plans, it has been highlighted that during 2007-2008 to 2009-2010, the agriculture sector contributed significantly to GDP. The main problem is to increase both public and private sector capital investment.

Initiatives to ensure food security:

- NFSA act 2013: To provide subsidized food grains to approximately two thirds of the country's people. It includes the Midday Meal Scheme, Integrated Child Development Services scheme and the Public Distribution System.
- Integrated Child Development Services (ICDS): It is one of the Government of India's flagship programs. It is the most visible symbol of the country's commitment to its children and nursing mothers, as a response to breaking the malnutrition food cycle, morbidity, reduced learning capacity, and mortality on the other.
- Targeted Public Distribution System (TPDS): Launched in 1997 with focus on identification of the poor (done by the States) for delivery of foodgrains and for its distribution in a transparent and accountable manner.
- National Food Security Mission: The project was initiated in 2007-2008 with the goal of increasing rice, wheat, and pulses output through expanding land and increasing productivity, as well as offering job possibilities and initiatives to help farmers regain confidence. This programme is now being implemented in 17 states throughout the country.
- Rashtriya Krishi Vikas Yojana: It was started in 2007-2008 with the goal of increasing public investment in states. Several technology packages for enhancing agriculture production have been distributed in the states.
- The Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM): Introduced in 2010 in 14 main states for the production of oilseeds, maize and oil palm to serve as a tool for crop diversification.
- Antyodaya Anna Yojana: Covering poorest citizens and provision of 35kg of food grains at subsidized prices of Rs.3 for rice and Rs.2 for wheat.

Way forward:

- The recent and ongoing problem of rising food costs, in particular, reminds us that, even as the urban economy increases fast, large segments of the population may confront acute food insecurity.
- We must use all modern technologies as well as traditional knowledge to preserve and use them in a sustainable manner to tackle this problem.

About ITPGRFA:

- The ITPGRFA was signed during the 31st session of the United Nations Food and Agriculture Organisation (FAO) in Rome in November, 2001.

- The treaty seeks to achieve food security through the conservation, exchange and sustainable use of the world's Plant Genetic Resources for Food and Agriculture (PGRFA), equitable sharing of profits from its use, as well as playing an important role in the recognition of rights of farmers.

5.11 Dugong in Gulf of Manner

- Recently, the Tamil Nadu government has decided to go ahead with the establishment of India's first conservation reserve for the Dugong in Gulf of Manner, Palk Bay.
- It facilitates India to act as the leading nation in the South Asia Sub-region with respect to dugong conservation.

About Dugongs:

- Dugong (*Dugong dugon*) also called 'Sea Cow' is one of the four surviving species in the Order Sirenia and it is the only existing species of herbivorous mammal that lives exclusively in the sea including in India.
- Dugongs are an important part of the marine ecosystem and their depletion will have effects all the way up the food chain.
- Distribution and Habitat: They are found in over 30 countries and in India are seen in the Gulf of Manner, Gulf of Kutch, Palk Bay, and the Andaman and Nicobar Islands.
- IUCN Red List status: Vulnerable
- Wild (Life) Protection Act, 1972: Schedule I
- CITES: Appendix I

Steps Taken for Conservation:

- In February 2020, India hosted the 13th Conference of Parties (CoP) of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), an environmental treaty under the aegis of the United Nations Environment Programme (UNEP).
- The Government of India has been a signatory to the CMS since 1983.
- India has signed non-legally binding Memorandums of Understanding (MoU) with CMS on the conservation and management of Siberian Cranes (1998), Marine Turtles (2007), Dugongs (2008) and Raptors (2016).
- The Ministry of Environment, Forests and Climate Change constituted a 'Task Force for Conservation of Dugongs' to look into issues related to conservation of dugongs and implementation of the 'UNEP/CMS Dugong MoU' in India.

5.12 Plastic pollution

- A 3-year period MoU was signed between National Cadet Corps (NCC) and United Nations Environment Programme (UNEP) to tackle plastic pollution and achieve the universal goal of clean water bodies through 'Puneet Sagar Abhiyan' and 'Tide Turners Plastic Challenge programme'.

Objective:

- To consolidate, develop and detail cooperation of youth in achieving common objectives in the field of environment.
- To engage in capacity building, information sharing and awareness on environmental sustainability through training initiatives.
- To promote opportunities for NCC cadets to participate in national and international platforms.

About Puneet Sagar Abhiyan:

- Launched by The NCC on December 1, 2021
- It is a nationwide campaign to clean sea shores of plastic and other waste material and to raise

awareness about the importance of cleanliness

- It was started initially for one month and was subsequently extended as a pan-India round-the-year campaign
- It covers rivers and other water bodies as well.
- Achievements: Since the launch of 'Puneet Sagar Abhiyan', over 100 tonnes of plastic waste have been collected from nearly 1,900 locations by more than 12 lakh NCC cadets, impacting 1.5 crore people. Of the approximately 100 tonnes of collected plastic waste, more than 60 tonnes have been recycled.

About National Cadet Corps (NCC):

- It is the youth wing of the Indian Armed Forces as a Tri-Services Organisation, comprising the Army, the Navy, and the Air Force
- Headquarters are in New Delhi, India.
- It is open to school and college students on voluntary basis,
- To develop the youth of the country into disciplined and patriotic citizens.
- The emblem of the NCC consists of 3 colours; red, dark blue and light blue representing the Indian Army, Indian Navy and Indian Air Force respectively. The 17 lotuses indicate the 17 directories of India.

About United Nations Environment Programme (UNEP):

- The UNEP is a leading global environmental authority established on 5th June 1972 in the aftermath of Stockholm Conference (Declaration on the Human Environment).
- Functions: It sets the global environmental agenda, promotes the sustainable development within the United Nations system, and serves as an authoritative advocate for global environment protection.
- Major Reports: Emission Gap Report, Global Environment Outlook, Frontiers, Invest into Healthy Planet.
- Major Campaigns: Beat Pollution, UN75, World Environment Day, Wild for Life.
- Headquarters: Nairobi, Kenya.

The UNEP engages in developing global conventions on the environment and related issues. It hosts the secretariats of various conventions such as:

- Minamata Convention on Mercury
- United Nations Convention on Biological Diversity
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Basel Convention- Control of Transboundary Movements of Hazardous Wastes
- Stockholm Convention – on Persistent Organic Pollutants
- Rotterdam Convention – on Hazardous Chemicals and Pesticides in International Trade
- Vienna Convention – Protection of the Ozone Layer
- Montreal Protocol – on reducing substances that Deplete the Ozone Layer
- Convention on Migratory Species

5.13 Dragonflies

- A survey of dragonflies and damselflies at Delhi's biodiversity parks indicates that low rainfall this year may have impacted their life cycles and numbers.
- In a week-long survey that concluded recently, a total of 25 species of dragonflies and damselflies were recorded across the biodiversity parks and the Kamla Nehru Ridge.
- On August 18 every year, the World-Wide Fund for Nature (WWF-India) and the Bombay Natural History Society (BNHS) commemorates Dragonfly Day in New Delhi and its surrounding areas.

What are Dragonflies?

- It is an aerial predator insect most commonly found near freshwater habitats throughout most of the world.
- Their distinctive colors make them look beautiful. This makes them valuable subjects for research on

insect behavior, both for ecology and art.

Habitat:

- Most species of dragonflies live in the tropics and particularly in the rainforests.

Significance:

- Dragonflies are important to their environments both as predators (particularly of mosquitos) and as prey to birds and fish. Because these insects require stable oxygen levels and clean water, scientists consider them reliable bioindicators of the health of an ecosystem.
- Dragonflies are essential bio-indicators of an area's ecological health. Because they eat mosquitoes and other insects that transmit life-threatening diseases like Malaria and Dengue Fever.

Threats:

- The rapid destruction of their habitat poses a direct threat to their survival making their conservation urgent.

Key Findings of the survey:

- The Kamla Nehru Ridge recorded the maximum number of species – 25.
- The Yamuna Biodiversity Park recorded 23 species, a little less than the 25 species recorded in 2018.
- In terms of the number of individuals recorded, the Kalindi Biodiversity Park recorded the highest number at 3,348, followed by the Aravalli Biodiversity Park where 555 individuals were counted.
- The Neela Hauz biodiversity park also recorded a fewer number of species this year – just six – as compared to 2018, when nine species were counted.
- Species that were recorded include the Scarlet Skimmer, Picture Wing dragonfly and the Granite Ghost along with dragons mentioned below.

Recent other discoveries of Dragonflies:

- Recently, Dragonfly enthusiasts have recorded the presence of a rare dragonfly species named “Spiny Horntail” that was not seen in Kerala until now.
- The Western Ghats are home to this species, which was discovered in Maharashtra earlier this year.

5.14 Breakthrough Agenda Report

- The first annual Breakthrough Agenda Report, delivers a progress report on the actions needed to deliver on the historic clean technology commitment by governments.
- The report puts forward 25 recommendations for leaders to discuss at the Global Clean Energy Action Forum and the 13th Clean Energy Ministerial to be held in Pittsburgh, the US.

About the report:

- The Breakthrough Agenda Report 2022 is a new report by the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA) and the UN Climate Change High-Level Champions.
- The report represents two-thirds of the global economy.
- Objective: It aims at supporting stronger international collaboration to amplify ambition, accelerate progress and drive faster reductions in global greenhouse gas (GHG) emissions. To align countries' actions and coordinate investment to scale up deployment and drive do down costs across five key sectors — power, road transport, steel, hydrogen and agriculture
- Together, these sectors account for nearly 60% of global greenhouse gas (GHG) emissions and could deliver the bulk of emissions reductions needed by 2030 in a pathway that would make a significant contribution to limiting global warming to a maximum of 1.5 degrees Celsius, in line with the Paris Agreement goals.

Findings:

- The report notes an increase in practical international cooperation in recent years such as doubling of EV sales, increase in global renewable capacity of eight per cent in 2022 — pushing through the 300GW mark for the first time.
- The report also warns that far greater international cooperation is needed to get the world on track to meet its climate commitment.

About IEA:

- It was established in the framework of the Organisation for Economic Co-operation and Development (OECD) in 1974 in the wake of the 1973 oil crisis.
- IEA is an autonomous intergovernmental organisation.
- Its mission is guided by four main areas of focus: energy security, economic development, environmental awareness, and engagement worldwide.
- Headquarters: Paris, France.

Roles and functions:

- To help its members respond to major oil supply disruptions, a role it continues to fulfil today
- Tracking and analysing global key energy trends,
- Promoting sound energy policy,
- Fostering multinational energy technology cooperation.
- Composition: It has 30 members at present. IEA family also includes eight association countries. A candidate country must be a member country of the OECD. But all OECD members are not IEA members.
- Three countries are seeking accession to full membership: Chile, Israel, and Lithuania.

Reports by IEA:

- Global Energy & CO2 Status Report.
- World Energy Outlook.
- World Energy Statistics.
- World Energy Balances.
- Energy Technology Perspectives.

5.15 India's garbage disposal

- This monsoon, several parts of India have found themselves literally swimming in filth and sewage. Gutters have choked with garbage, plastics being one of the main reasons for it.
- Single-use plastic carry-bags have been singled out for particular attention and regular meetings have been held to educate – as well as admonish — people about their use.
- Thus, good behaviour of the people is seen as the key to change the plastic use pattern.

What is single-use plastic?

- As the name suggests, it refers to plastic items that are used once and discarded. E.g., plastics used in packaging items, bottles (shampoo, detergents, cosmetics), polythene bags, face masks, coffee cups, cling film, trash bags, food packaging etc.

Maintaining the producer Accountability is need of the Hour:

- In a clogged gutter, we generally find branded packaging material — metal foil wrappers, bottles and boxes of various grades of plastics — are a substantial part of the mess inside.
- This packaging is required because the products must have a long shelf life, and withstand heat, sunlight and rough handling during freight.
- As packing contribute the significant aspect of this plastic pollution so, there is need to address the main concern

Regulation of Plastic waste:

- Centre and state governments have laws for plastic waste regulation, but it requires the effective implementation by the bureaucracy and it is the bureaucratic ability to implement them which will define its outcomes.
- According to the law, the ultimate manufacturers (UMs) of the plastic films — the raw material for the much-reviled carry-bags and also the much larger volume of branded packaging — are responsible for the collection of this waste and its processing.
- They must set up collection networks and work with state pollution control boards and the city and town administrations to ensure that this waste reaches recyclers and manufacturers. The rural regions are, of course, ignored.
- However, responsibility of producer for collecting the plastic is not effective
- While Rs 8 out of 100 was spent on packaging the product, the cost of the packaging materials is barely Rs 1. The rest of the cost is in shaping this raw material into packaging unit
- Given the volumes manufacturing plant, hundreds of shampoo bottles need to be filled per minute and soaps need to be packed. The machines which do this are some of the most intricate combinations of sensors and control systems. Most of them are imported and contribute significantly to the cost.
- Of the Re 1 of the reusable material, even with the most advanced recycling technology, the value of that piece of garbage in our hand to the ultimate manufacturer is less than 50 paise. Therefore, it is simply not economical to transfer the waste back to the manufacturer
- Hence, only where this waste is concentrated and there are abjectly poor people available to segregate, can supply chains exist to take it back to the chemical plants.
- This is why the garbage dumps, ragpickers and the neighbourhood kabadi shops are necessarily the only viable last mile of our recycling system.

Plastic waste management rules in India:

- With effect from September 30, 2021 India has the Plastic Waste Management Amendment Rules, 2021.
- It prohibited the manufacture, import, stocking, distribution, sale, and use of plastic carry bags whose thickness is less than 75 microns.
- From December 31, 2022, plastic carry bags whose thickness is less than 120 microns will be banned.
- It means that the ban does not cover all plastic bags; however, it requires the manufacturers to produce plastic bags thicker than 75 microns which was earlier 50 microns.
- As per the notification, the standard shall be increased to 120 microns in December this year.

Way Forward:

- By implementing a sustainability tax on the packaging and carriage cost components of a given product
- Given the elaborate bureaucratic machinery of the GST and the formal nature of the dealer network of large FMCG companies, this tax can be easily administered and transferred to the districts and town
- Such a consumption tax based on concrete aspects of sustainability, and its local devolution, would create the right incentives for a scientific analysis of garbage and the logistics of its disposal. It will also create a clutch of professional companies who specialise in this sector and provide their services to the hundreds of cities
- There is need for a coordination among city's stressed garbage collection system and a few good Samaritans at the Sahyadri Nisarga Mitra — an NGO.
- As with most public services, such as education or drinking water, the goodness of heart of a few and the noble intentions of our leaders, rather than a professionally run system, form the basis of delivery of this important environmental service.
- Therefore, on decentralization of sophistication process that would create more jobs for our youth and give them more dignity. And improve the quality of our lives and help preserve the environment.

6. Security and defense

6.1 India's cyber infrastructure

- There has been a steady spike in cases of cybercrime in the last five years.
- In India, cybercrime is increasing with the increased use of information and communication technology (ICT).
- However, despite this alarming trend, the capacity of the enforcement agencies to investigate cybercrime remains limited.

Need for Cyber Security

Increasing Number of Cyber Attacks:

- According to the National Crime Records Bureau (NCRB), from 12,317 cases of cybercrime in 2016, there were 50,035 cases registered in 2020.
- One in four Indian organisations suffered a ransomware attack in 2021 — higher than the global average of 21%.

Increased Digital usage Post-Covid:

- Critical infrastructure is getting digitised in a very fast way — this includes financial services, banks, power, manufacturing, nuclear power plants, etc.

Cyber terrorism

- It is premeditated, politically motivated attack against information, computer systems, computer programs, and data which results in violence.

For Protecting Critical Sectors:

- It is particularly significant given the increasing interconnectedness of sectors and proliferation of entry points into the internet, which could further grow with the adoption of 5G.
- There were 6.97 lakh cyber security incidents reported in the first eight months of 2020, nearly equivalent to the previous four years combined, according to information reported to and tracked by the Indian Computer Emergency Response Team (CERT-In).
- A local, state or central government maintains a huge amount of confidential data related to the country (geographical, military-strategic assets etc.) and citizens.

For Individuals:

- Photos, videos and other personal information shared by an individual on social networking sites can be inappropriately used by others, leading to serious and even life-threatening incidents.

For Businesses:

- Companies have a lot of data and information on their systems.
- A cyber-attack may lead to loss of competitive information (such as patents or original work), and loss of employees/customers' private data resulting in complete loss of public trust in the integrity of the organisation.

Challenges

- No procedural code
- There is no separate procedural code for the investigation of cyber or computer-related offences.
- As electronic evidence is entirely different in nature when compared with evidence of traditional crime, laying down standard and uniform procedures to deal with electronic evidence is essential.

Shortage of technical staff

- Second, there have been half-hearted efforts by the States to recruit technical staff for the investigation of cybercrime.
- A regular police officer, with an academic background in the humanities and management may be unable to understand the nuances of the working of a computer or the Internet.
- Further, the Information Technology (IT) Act, 2000 insists that offences registered under the Act should be investigated by a police officer not below the rank of an inspector.
- The fact is that police inspectors are limited in number in districts, and most of the field investigation is done by sub-inspectors.
- Lack of Infrastructure – cyber labs
- Third, the cyber forensic laboratories of States must be upgraded with the advent of new technologies.
- Offences related to crypto-currency remain under-reported as the capacity to solve such crimes remains limited.
- While most State cyber labs are sufficiently equipped to analyse hard disks and mobile phones, many are yet to be notified as ‘Examiner of Electronic Evidence’ to enable them to provide expert opinion on electronic records.
- Need for localisation
- Most cybercrimes are trans-national in nature with extra-territorial jurisdiction.
- The collection of evidence from foreign territories is not only a difficult but also a tardy process.
- In most social media crimes, except for the prompt blocking of an objectionable website or suspect’s account, other details do not come forth quickly from large IT firms.
- Therefore, ‘data localisation’ must feature in the proposed Personal Data Protection law so that enforcement agencies are able to get timely access to the data of suspected Indian citizens.

Measures Taken By the Government

- Information Act, 2000: The Information Act, 2000 is the primary law for dealing with cybercrime and digital commerce in India.
- National Cyber Security Policy, 2013: The policy provides the vision and strategic direction to protect the national cyberspace.
- The CERT-In (Cyber Emergency Response Team – India): CERT-In has been operational since 2004. It is the national nodal agency for responding to computer security incidents as and when they occur.
- Indian Cyber Crime Coordination Centre (I4C): It deals with all types of cybercrimes in a comprehensive and coordinated manner.
- Cyber Swachhta Kendra: Launched in early 2017, the Cyber Swachhta Kendra provides a platform for users to analyse and clean their systems of various viruses, bots/ malware, Trojans, etc.
- Cyber Surakshit Bharat: Ministry of Electronics and Information Technology, launched the Cyber Surakshit Bharat initiative to spread awareness about cybercrime and building capacity for safety measures for Chief Information Security Officers (CISOs) and frontline IT staff across all government departments.
- The Cyber Warrior Police Force: In 2018, the government announced its plans to introduce CWPF. It is proposed to be raised on lines of the Central Armed Police Force (CAPF).
- Cyber-Crime Prevention against Women & Children’ Scheme: Implemented by the Ministry of Home Affairs, the scheme aims to prevent and reduce cyber-crimes against women and children.

Way forward

- Building capabilities: There is an urgent need to build capabilities and capacity for application, equipment and infrastructure testing.
- Human resource: Immediate attention has to be given to human resource development which would increase the number of experts who can effectively manage the cyber security of the country.
- R&D: Investments should be made on R&D to develop more innovative technologies to address increasing cyber security threats.
- Policy and Governance: It is important to bring a robust policy and effectively implement the same.
- Further, duties and responsibilities should be defined clearly for smooth functioning and better

coordination among departments and stakeholders.

- Awareness: A periodic awareness campaign by the government and big private organizations should be conducted to aware people about cyber security threats.
- Strengthening Private Partnership: It is important to strengthen the public- private partnership on cyber security.

6.2 Exercise Kakadu 2022

Recently, a P8I Long Range Maritime Patrol Aircraft of the Indian Navy participated in the Multinational Maritime Exercise Kakadu 2022.

About the Exercise:

- It was hosted by the Royal Australian Navy in Darwin along with INS Satpura.
- It is a biennial maritime exercise that brings together around 3,000 personnel, 15 warships and more than 30 aircraft from 22 countries.
- It would cover both the sea phase and the harbour phase.
- The harbour phase would witness participants being involved in operational planning interactions and supportive activities.
- The maiden participation of the P8I provided an enhanced exposure to the aircrew, augmenting the understanding of the varied nuances of collaborative Anti-Submarine and Anti-Surface Warfare operations in a complex multi-threat scenario.
- Objective: Enhance interoperability and reaffirm the Indian Navy's commitment to the Indo-Pacific.
- Theme: 'Partnership, Leadership, Friendship'

6.3 Aatmanirbhar in defence production

- According to a recent study released by the Stockholm International Peace Research Institute (SIPRI), India ranks fourth among 12 Indo-Pacific nations in self-reliant arms production capabilities.
- The 12 countries in the study were selected because they have the highest military spending in the region- Australia, China, India, Indonesia, Japan, South Korea, Malaysia, Pakistan, Singapore, Taiwan, Thailand and Vietnam.
- China tops the list, Japan is second, South Korea is in third place, and Pakistan is at number 8.
- India is ranked as the second largest importer of arms for its armed forces in 2016-20.

Indian Companies & suppliers:

- Hindustan Aeronautics Ltd, Indian Ordnance Factories, Bharat Electronics, Mazagaon Docks and Cochin Shipyard are among the major Indian arms servicing companies.
- Ashok Leyland, one of the largest suppliers of trucks to the Indian Army, is the only company ranked in the top 50 in the Indo-Pacific.

Aatmanirbhar in defence production:

Make-I Category:

- Under the Defence Acquisition Procedure 2020, 'Make' Category aims to achieve self-reliance by involving greater participation of Indian industry.
- Projects involving design and development of equipment, systems, major platforms or upgrades thereof by the industry can be taken up under this category.

Financial Support:

- The Ministry of Defence will provide financial support up to 70% of the total cost of prototype development.

Make-II Category:

- It is funded by industry with assured procurement. The following platform has been listed – Anti-jamming Systems for Multiple Platforms.

Special Purpose Vehicle (SPV) Model:

- Under this, private industry will be encouraged to take up the design and development of military platforms and equipment in collaboration with the Defence Research and Development Organisation (DRDO) and other organisations.
- Following two platforms have been identified under this category.
- Long Range Unmanned Aerial Vehicles (UAVs) [High Altitude Long Endurance (HALE)].
- Indian Multi Role Helicopter (IMRH).

iDEX:

- Projects of Start-ups, MSMEs etc. involving high-end innovation would be pursued under the iDEX category and the following platform has been selected under this category –
- Low Orbit Pseudo Satellites.

7. Social issues

7.1 Adoption rules

New adoption rules create confusion over implementation as they require transfer of adoption papers from courts to District Magistrates.

Background:

- The parliament passed the Juvenile Justice (Care and Protection of Children) Amendment Bill 2021 and it came into effect on September 1 2021.
- The objective was to prevent court-related delays during adoptions because of a large no. of pending cases by transfer of adoption papers from courts to District Magistrates. This was to ensure speedy disposal of cases and enhance accountability.

Adoption and its Procedures

- Adoption means the process through which the adopted child is permanently separated from his biological parents and becomes the lawful child of the adoptive parents with all the rights, privileges. and responsibilities that are attached to a biological child.
- A child can be adopted if
- an orphan, abandoned or surrendered (OAS) child has been declared legally free for adoption as per the provisions of the JJ (C&PC) Act 2015
- a child of a relative (a relative means the child's paternal uncle or aunt, a maternal uncle or aunt or paternal and maternal grandparents)
- a child or children of spouse from earlier marriage surrendered by the biological parent(s) for adoption by the step-parent
- Adoptions in India are governed by two laws: The Hindu Adoption and Maintenance Act, 1956 (HAMA) and the Juvenile Justice Act 2015 (JJA). Both laws have separate eligibility criteria for adoptive parents
- Those applying under JJA, have to registers for adoption by filing application on Central Adoption Resources Authority (CARA) portal > An assessment through home study report is done > The parent(s) is then referred a child and subsequently allowed to take a child in pre- adoption foster care > Formal adoption order from the court gives a legal status to the adoption.
- Under HAMA, a "dattaka hom" ceremony or an adoption deed or court order is sufficient to obtain irrevocable adoption rights.

Challenges:

- Lack of awareness among the parents, the judges and the DMs regarding the process creating confusion and delay. Delay in the transfer process to be amplified due to requirement of a fresh petition.
- Such a delay in the above-mentioned process implies problems in school admissions due to absence of birth certificate of the child or inability to claim health insurance, etc.
- There are no rules for monitoring adoptions and verifying sourcing of children and determining whether parents are fit to adopt, under HAMA.
- Under CARA, there are only 2188 children in its registry while there are more than 31,000 prospective parents. This leads to long wait which further allows human traffickers to take advantage of loopholes – this issue was further verified by a Parliamentary Panel "Review of Guardianship and Adoption Laws"
- The question of whether an order passed by DM will pass muster when an adopted child's entitlements on succession & inheritance are contested before a court
- Nearly 3500 adoptions are completed every year while 1000 pending cases in limbo across the country

CARA

- It is a specialised adoption agency and a statutory body of the Ministry of Women & Child Development.

- It functions as the nodal body for adoption of Indian children and is mandated to monitor and regulate in-country and inter-country adoptions.
- CARA is designated as the Central Authority to deal with inter-country adoptions in accordance with the provisions of the Hague Convention on Inter-country Adoption, 1993, ratified by Government of India in 2003.
- CARA primarily deals with adoption of orphan, abandoned and surrendered children through its associated /recognised adoption agencies.
- Parliamentary Panel “Review of Guardianship and Adoption Laws”
- In India, there are only 2,430 children available for adoption while the number of parents desiring to bring home a child is growing rapidly.
- There were 27,939 prospective parents registered with the Child Adoption Resource Authority (CARA) as of December 2021, up from nearly 18,000 in 2017.
- The waiting time for adoption has increased to three years from one year in the past five years.

7.2 Scheduled Tribes

Cabinet approves addition of four tribes in Himachal, Tamil Nadu, Chhattisgarh to ST list.

What are the tribes added to the Scheduled Tribes list?

- The Hatti tribe in the Trans-Giri area of Sirmour district in Himachal Pradesh.
- The Narikoravan and Kurivikkaran hill tribes of Tamil Nadu.
- The Binjhia in Chhattisgarh, who were listed as ST in Jharkhand and Odisha but not in Chhattisgarh, were the communities newly added to the list.
- ‘Betta-Kuruba’ as a synonym for the Kadu Kuruba tribe In Karnataka.
- In Chhattisgarh, the Cabinet approved synonyms for tribes like the Bharia (variations added include Bhumia and Bhuyian), Gadhwa (Gadwa), Dhanwar (Dhanawar, Dhanuwar), Nagesia (Nagasia, Kisan), and Pondh (Pond), among others.

Process to include tribes in the ST list:

- It will start with the recommendation from the respective State governments, which are then sent to the Tribal Affairs Ministry, which reviews and sends them to the Registrar General of India for approval.
- This is followed by the National Commission for Scheduled Tribes’ approval before the list is sent to the Cabinet for a final decision.
- Note: The Cabinet approved a proposal to bring the Gond community residing in 13 districts of Uttar Pradesh, under the ST list from the Scheduled Caste list. This includes the five subcategories of the Gond community (Dhuria, Nayak, Ojha, Pathari, and Rajgond).

7.3 The consequences of declining fertility

- Though the global population, in terms of numbers, has been steadily increasing — some reports suggest that it could grow to around 8.5 billion in 2030 — there is an interesting aspect to this: average global fertility has been consistently declining over the past 70 years.
- The average number of children per woman in the reproductive age group has declined by 50%, from an average of 5 children per woman in 1951 to 2.4 children in 2020, according to the World Population Prospects (WPP) 2022 by the United Nations population estimates and projections, and prepared by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat (UN-DESA).

WPP 2022 Findings Related to India:

- India’s growth rate stood at 3 % in 1972, which has dropped down to less than 1% now.

- In this period, the Total Fertility Rate (TFR) has come down from about 5.4 to less than 2.1 now.
- This means that India has attained the Replacement Level Fertility (RLF) Rate, at which a population exactly replaces itself from one generation to the next.

Reasons for changing trend of population:

- This is the result of speeding up the social phenomenon of demographic transition.
- Demographic transition refers to the historical shift from high birth rates and high death rates in societies with minimal technology, education (especially of women) and economic development, to low birth rates and low death rates in societies with advanced technology, education, and economic development, as well as the stages between these two scenarios.
- Poorer countries seem to be speeding up the transition ladder a lot faster than the richer ones.
- The newly released World Population Prospectus also notes that the global fertility rate fell from three in 1990 to 2.3 in 2021. Sub-Saharan African countries are expected to contribute more than half the population growth after 2050 and grow through 2100. Most advanced economies have their fertility rate below the replacement rate of 2.1.

Indian scenario:

- The Indian setting is no different, with its fertility rate falling below the replacement level for the first time to 2.0 in 2021, according to the latest National Family Health Survey 2021 (NFHS- 5). The rate has dipped 10% in just five years.
- At the time of Independence, India's fertility rate (TFR) was 6 per woman, and it had taken 25 years to reach 5, with the government launching the first ever family planning programme in the world in 1952.
- As reported by the NFHS 2021, only five States have a fertility rate above the replacement rate: Bihar, Meghalaya, Uttar Pradesh, Jharkhand, and Manipur.

Advantages of having low fertility rates:

- Lower fertility impacts women's education positively, which in turn lowers the fertility of the next generations.
- With better infrastructure development, better health care, and education, fertility drops and income rises.
- Demographic Dividend— The spiral of lower fertility leads to a window of time when the ratio of the working-age population is higher than that of the dependent age groups.
- This high proportion of people in the workforce boosts income and investment, given the higher level of saving due to lower dependence.
- The falling fertility rate will also lead to lower pressure on land, water and other resources and would also contribute to achieving environmental goals.

However, A fall in fertility rate beyond replacement level would have a negative effect on the proportion of the working population:

- $TFR < RLF$ will negatively affect output in an economy.
- A rise in education and independence among women would enhance their labour participation, which could arrest the fall in labour participation up to a limit.
- An influx of immigrants from countries with higher population growth could also play a positive part but this would change local demography, leading to political unrest.
- A paper, "The End of Economic Growth? Unintended Consequences of a Declining Population", by Stanford economist argues that falling fertility could diminish the creative capacity of humankind. He points to the need for ideas in technological advancement and productivity boost, which even artificial intelligence is still not capable of.
- An ageing population will also affect global interest rates negatively as the share of people over 50 years will form almost 40% of the population by 2100.
- In their book The Great Demographic Reversal, economists explain how falling fertility will have a positive

effect on inflation through higher wages due to lower labour supply and a change in the nature of unemployment inflation trade-off, as now low inflation can be maintained even with low unemployment.

Way forward: Dealing with fertility decline

- The fall in fertility around the globe has been a result of decades of demographic process, and hence needs scientific and sustainable policies for mitigation.
- The advancement in health care and better nutrition around the world have increased the life expectancy and productivity of older citizens.
- Countries across the globe are experimenting with policies to boost fertility.
- Germany found success in boosting births through liberal labour laws, allowing more parental leave and benefits.
- Denmark offers state-funded IVF for women below 40 years, and Hungary recently nationalised IVF clinics.
- Poland gives out monthly cash payments to parents having more than two children, whereas Russia makes a one-time payment to parents when their second child is born.
- Liberal labour reforms, encouraging higher female labour force participation rate, and a higher focus on nutrition and health would ensure sustained labour supply and output despite lower fertility.

7.4 Operation Megh Chakra

The Central Bureau of Investigation (CBI) conducted searches as part of a pan-India drive against the circulation and sharing of child sexual abuse material. The operation was code-named “Megh Chakra”.

About Operation Megh Chakra:

- Operation Megh Chakra is one of the CBI-led global operations in recent times for rapid response to online child sexual exploitation cases with international linkages and organized cyber enabled financial crimes.
- It is aimed at identifying and acting against the individuals and gangs involved in circulating child sexual abuse material and blackmailing minors.
- The operation is targeted at cloud storage — therefore the codename ‘Megha Chakra’ — used by peddlers to circulate audio-visual material on illicit sexual activities with minors.
- It sought to collate information from various law enforcement agencies within India, engage with relevant law enforcement agencies globally and coordinate closely through INTERPOL (International Criminal Police Organization) channels to combat online child sexual exploitation and such organized cyber-criminal activities.
- Coordination meetings were organised with INTERPOL and foreign law enforcement agencies for sharing critical information to dismantle such cybercrime networks.

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