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- Polycrisis
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February - 2023 Current Affairs

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M.S.Shashank
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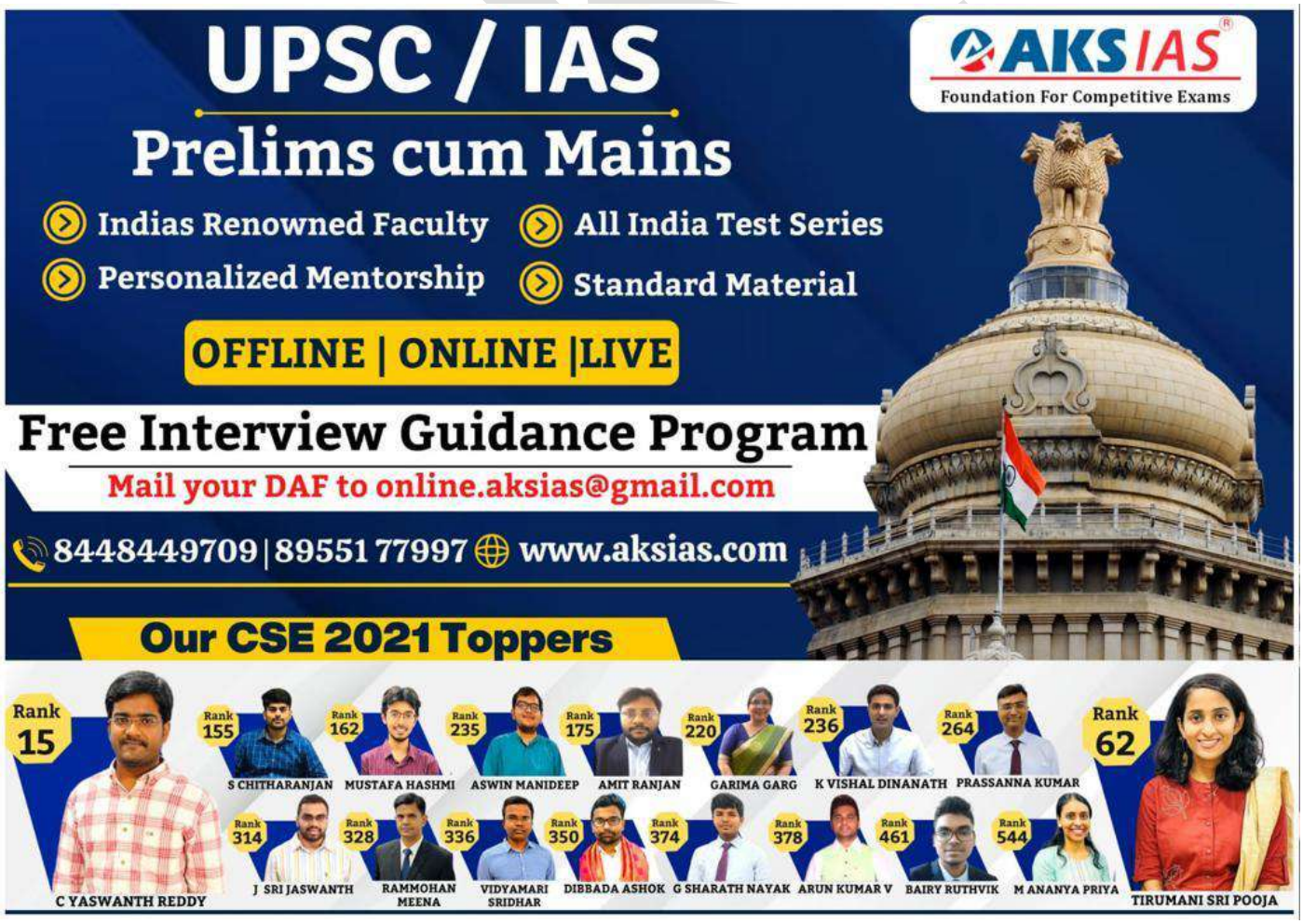
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1.Polity & Governance

1.1. All India Annual State Ministers' Conference on Water

Why In News?

- Recently, **the first** All India Annual State Ministers' Conference on Water began in Bhopal, Madhya Pradesh.

About

- **Background:**
  - The inter-state water disputes between several states are going on harming the water sharing scenarios.
- **Water is a State Subject:**
  - Although water is a state subject, it was the responsibility of all to make water a subject of collaboration, coordination, and cooperation between states.
- **Theme of Conference:**
  - 'Water Vision @ 2047'.
  - It is an important dimension of the journey of 'Amrit Kaal' for the next 25 years.
- **Whole of Government Approach:**
  - All governments should work like a system wherein there should be constant interaction and dialogue among different departments of state governments, such as those handling Water, Irrigation, Agriculture, Rural and Urban Development and Disaster Management.
- **Public participation will lead to more responsible behavior:**
  - When the public is associated with a campaign, they also get to know the seriousness of the work.
  - Due to this, a sense of ownership also comes in the public towards any scheme or campaign
- **Water Treatment:**
  - When treated water is reused, fresh water is conserved, it benefits the entire ecosystem.
  - That's why water treatment and recycling is essential.
- **Post COVID:**
  - The Indian economy has continued its growth trajectory despite COVID pandemic and it is estimated that by 2027, India will become the third largest economy in the world ahead of Germany and Japan.
- **Economy:**
  - There is a direct correlation between economic growth and the consumption of electricity and water.
  - From becoming a 3 to 5 trillion dollar economy and further a 10 trillion dollar economy, there is a need to discuss the water requirements and its availability at a macro level through such conferences.
- **Government Efforts:**
  - The 'Per Drop More Crop' campaign that began under the Pradhan Mantri Krishi Sinchai Yojana (PMKSY) has helped bring more than 70 lakh hectares of land in the country under micro-irrigation so far.
- **State Efforts:**
  - The State of Madhya Pradesh is making a comprehensive water Policy which will be implemented soon.

Significance

- Awareness has increased through the efforts and initiatives taken by the Union and State governments.
- The Jal Shakti Abhiyan launched by the Prime Minister, which brought together various organizations, Panchayats, NGOs, Celebrities etc., has started showing good results as can be seen through the ground water report released.
- This has led to a reduction in the over exploited, critical and semi critical number of blocks while safe blocks have increased because more work needs to be done in this field with a focused approach.

Challenges/Issues

- India's water availability of 4,000 BCM through rain, glaciers or international basins, out of which, total **harvestable component** which is usable is half of this.
- Climate change has **changed rainfall patterns** with scanty and erratic rainfall which has and continues to negatively impact this harvestable component.
- **Rapid urbanization**, increased **demand of water and water pollution** together have reduced the per capita availability of water from 5000 CM to 1500 CM and by 2047 it might further reduce to 1200 CM.
- By 2047, our requirement is likely to **surpass the availability of water** and that is why there is a need for this conference to be held with all the States to holistically discuss this issue, chalk out a roadmap to ensure preparedness and contingency planning.
- Just like food is being calculated now based on its nutritious value not weight, similarly water requirements need to be measured in a **more holistic manner**.
- **Increasing storage capacity** through small storage facilities on the lines of Amrit Sarovars, is also challenging.
- **Storage capacity reduction of dams** due to sedimentation of reservoirs needs to be worked on and initiatives need to be taken in this regard so as to ensure optimal utilization of reservoir capacity.
- There is a need to work on **demand side management** along with uninterrupted supply. Contamination of water resources needs to be stopped.

Way Ahead

- It is the **states' efforts for water conservation** that will go a long way in achieving the collective goals of the country.
- The states should adopt the **Centre's Namami Gange Mission** as a template and start similar campaigns for the conservation of rivers.
- The states need to adopt ways where the **water budget** is prepared at the **panchayat level based on the quantity of water** required in each village and the kind of work that can be done for it.
- The states **need to involve the public** in the campaigns related to water conservation.
- **More thrust** should be laid on **natural farming** as positive effects of water conservation have been noticed in places where natural farming is practiced.
- **Crop diversification** should be practiced but based on water availability.
- The gram panchayats should prepare an action plan for the next five years where a roadmap ranging from water supply to **cleanliness and waste management** is considered.

1.2. Litmus Test of Constitutional validity of Sedition law

Why in News?

- The Supreme Court of India is scheduled to hear a batch of petitions challenging the **colonial-era penal law on sedition.**

Background

- Last year the SC had put the penal law on sedition in abeyance till an **"appropriate"** government forum re-examined it.
- It had also directed the **Centre and states to not register** any fresh FIR invoking the offense.
- The top court had in 1962 upheld the validity of the law while attempting to restrict its scope for misuse.
- Recent cases of frequently putting charges of sedition **[Under IPC Section 124A]** against individuals have brought the focus back to a law introduced in the **Indian Penal Code in 1870.**
- The fact that this law is often used to control dissent calls for a **relook into its relevance at the present age.**
    - As the governments over the years have misused the law to put reasonable restrictions on free speech as provided in **Article 19(2) of the Constitution.**

Relevant Supreme Court judgements related to Sedition

- **Kedar Nath Singh vs State of Bihar case (1962)**

- The Supreme Court upheld the constitutional validity of the sedition law.
- While dealing with offenses laid down some guiding principles.
- The court ruled that comments- however strongly worded-expressing disapprobation of the actions of the government without causing public disorder by acts of violence would not attract penal actions.

- **P. Alavi vs State of Kerala (1982) case**
  - The court held that sloganeering, criticism of parliament or judicial set up didn't amount to sedition.
- **Balwant Singh vs State of Punjab (1995) case**
  - The SC held that merely shouting slogans, **(in this case Khalistan Zindabad),** does not amount to sedition.
  - And thus, declared that 'the sedition law is being both misunderstood and misused to muzzle dissent'.

Criticism of the Sedition law

- The sedition law became obsolete in the **UK in the 1960s and was repealed in 2009.**
  - The opponents of the law argue that when the country which imposed the law on India has **already repealed the given law** then why India is continuing with it.
- **Singapore too like** India inherited the Sedition law from Britain but it repealed it stating that a set of new laws can sufficiently address issues that were under the ambit of the sedition law.

Need of a relook into the law

- According to an estimate the number of cases of sedition under Section 124A increased by **140% from 2016 to 2019.**
- The rate of conviction dropped to **3.3% in 2019 from 33.3% in 2016.**
- In the Internet age, what can lead to public disorder has itself become **debatable, as information travels at lightning speed.**
- The U.K. repealed the offense of sedition in 2010 and India is holding onto a relic of the British Empire.
- As recently as 2018, the Law Commission of India too questioned the justification of **retaining the Section 124A.**
- The provision examines the effects of the seditious text rather than a content-based test which reviews the text alone which seems to be flawed.

Concerns with Sedition provisions

- **Against the spirit of the constitution**
  - Criticism of a Government is not the same as exciting **"disaffection towards the Government"** or inciting rebellion against it.
  - It is a medium to put constraints on the freedom of speech and expression of citizens.
- **Not in line with globally accepted practices**
  - India ratified the **International Covenant on Civil and Political Rights (ICCPR),** which increases India's liability towards protection of freedom of expression.
- **Against civil liberties**
  - Suppresses what every citizen ought to do in a democracy- raise questions, debate, disagree and challenge the government's decisions.
  - The draconian nature of this law as the crime is **non-bailable, non-cognizable and punishment** can extend for life—it has a strong deterrent effect on dissent even if it is not used.
- **Retention is not justified and prone to misuse**
  - The Law Commission of India, in its consultation paper published that while retaining the offense of sedition was essential to protect national integrity.
  - Terms used under Section 124A like **'disaffection'** are vague and subject to different interpretations to the whims and **fancies of the investigating officers.**

Way forward

- **The Kedar Nath** guidelines principles of the SC must be incorporated in Section 124A as well by amendment to IPC so that any ambiguity must be removed.

- Only those actions/words that directly result in the use of violence or incitement to violence should be termed seditious.
- The state police must be sufficiently guided as to where the section must be imposed and where it must not.
- Need to include provisions where the government can be penalized, if it misuses the section.
- This will ensure that section **124 A of IPC strikes a balance** between security and smooth functioning of the state with the **fundamental right of freedom of speech and expression.**

1.3. ECI's Remote Voting: Unaddressed Concerns

Why in News?

- Recently, the Election Commission of India (ECI) has invited political parties for a demonstration of the **Remote Electronic Voting Machine (EVM)** prototype on January 16 2023.

Key Highlights:

- The **Remote Electronic Voting Machine (EVM)** prototype can be used for up to **72 constituencies** simultaneously from a single, remote polling booth.

Advantages of RVMs:

- **Voter participation is comparatively high in India.**
    - Yet, in 2019, one in three voters did not turn up.
- Given the regional variations in demographic trends and economic opportunities, India has a **high rate of migration**, which doubled in the census decade of 2001-2011.
    - As per the 2017 Economic Survey, there are around **14 crore internal migrants in the country,** and they have to cross many hurdles to be able to vote.
    - Migrants often see their political and economic rights compromised at their place of origin and residence.
        - **Remote Electronic Voting Machine (EVM)** will help to protect their rights.

Unaddressed Concerns of RVMs:

- **Ensuing of Fair environment for Remote Voting**
    - How will it be ensured that all those who wish to apply for remote voting are able to do so without let or hindrance, and that all applications are processed fairly without inadvertent or selective exclusions?
        - It is not sufficient just to define a protocol as it needs to be ensured that all applications and the decisions on them are publicly verifiable, from both remote and home locations.
        - This can only be done with verifiable zero-trust technology that is crucially linked to digitisation of the electoral rolls, which, by itself, requires a thorough examination.
- **Issue of Invalidation for Voting**
    - How will it be ensured that a person allowed to vote remotely is invalidated for **local voting and also that nobody** is incorrectly invalidated?
        - Since the two lists will be at different locations, the correctness will not be easy to **demonstrate in a publicly verifiable way.**
- **Consolidation and Counting place Issue**
    - How will the votes - both the electronic votes and the VVPAT slips - be consolidated and counted? Will the counting and the VVPAT audit happen at the remote location, or at the home constituency after consolidation?
        - If it is the latter, then how will it be ensured, **verifiably, that the consolidation has happened correctly?**
        - If it is the former, then disclosing the remote voting results for a small number of remote voters at any one

location will compromise vote secrecy.

- **Issues related to Polling agent**
  - Who will be the polling agents at the remote locations? How will it be ensured that in a different political environment at the remote site, a remote voter will not be coerced?
- **Lack of Public Trust**
  - While there is no technical basis for allegations of fraud in the current, single-constituency, non-networked EVMs, public trust in them has never been lower than it is today.
  - Public trust is the only strength of any electoral process.
  - With EVMs, the voter has no way to see whether the vote is recorded as it is cast.
    - The ECI's ambitious plan comes against this backdrop of public skepticism about its own impartiality and, less justifiably, about the reliability of the EVMs.
- **Defining the Migrant and Resident**
  - Defining a migrant who is eligible to vote remotely is going to be controversial - for instance, when does a migrant at a place become a resident?
    - Even the ECI had expressed doubts about the practicality of **remote voting rights for migrants in the past.**

Way Forward:

- This is not to say that software cannot be used in electronic voting, but that an undetected change or error in the software should not cause an undetectable change or error in an election outcome.
- It is well known that a standalone **EVM, whichever way its components are internally connected,** cannot be software-independent, which is a necessary condition for verifiability.
- While usability demonstrations are essential for public acceptability, they do not **ensure safety or security.**

Conclusion:

- In an era of unprecedented human mobility, **the idea of portable voting rights is worth considering,** but it will have far-reaching ramifications that should be accounted for.

1.4. The Case Against State Control Of Hindu Temples

Why in News?

- State management of temples is often justified as a way of ensuring access to temples for worshippers and archakas (priests).
- **Regulating secular activities** associated with **religious practice** can be traced to **Article 25(2)(a)** of the Constitution. **Temple control legislation** is purportedly justified by this Article.

Temple control and temple entry:

- **Constitutional provisions:**
  - **Article 25(2)(a)** empowers the state to regulate "economic, financial, political or other secular activities which may be associated with religious practice".
  - **Article 25(2)(b)** empowers the state to enact laws "providing for social welfare and reform or the throwing open of Hindu religious institutions" to "all classes and sections of Hindus".
  - Hence, the issue of regulating secular aspects of religious practice is distinct from providing access to worship.
  - This is why there are separate laws for temple control and temple entry. They co-exist; one does not depend on the other.
- **The Shirur Mutt judgment (1954):**
  - Speaking for a unanimous bench of seven judges, the supreme court substantially obliterated the **Madras Hindu Religious and Charitable Endowments (HR&CE) Act, 1951,** terming the impugned provisions as "extremely drastic" in character.
  - So violent were the provisions against religious faith that the then Advocate General of Madras stated that he

"could not support the legality of these provisions".

- **Amendment Act:**
  - As a result of the judgment in Shirur Mutt, the legislature of the erstwhile Madras State enacted in 1954 an amendment Act with the purpose of removing the defects pointed out by the Supreme Court.
  - Again, the Act was challenged in Sudhindra Thirtha Swamiar v. Commissioner, H.R.C.E. (1955) before the Madras High Court.
  - This Act too was struck down as it suffered from the same defects as the original enactment.

- **Orissa Hindu Religious Endowments Act:**
  - The Orissa Hindu Religious Endowments Act, 1939 also has the distinction of being struck down by the Supreme Court twice — first in Sri Jagannath v State of Orissa (1954) and then in Sadasib Prakash Brahmachari v. The State of Orissa (1956).

The effect of temple control legislation:

- **Interference in religious affairs:**
  - In the guise of administering Hindu religious endowments, the state is trenching upon religious affairs.
  - In Tamil Nadu temples cannot even conduct pujas as the state has depleted their income.
- **Misappropriation of funds:**
  - The large-scale loot and plunder of temple resources at the hands of state officials would put to shame the colonial government.
  - Such misappropriation of funds has been unearthed by temple activists and is now a matter of public record.
- **Depletion of Income:**
  - As per the HR&CE policy note of 2012-13, Hindu temples own 4,78,545 acres of prime agricultural land; 22,599 buildings; and 33,627 'sites' covering 29 crore sq. ft in area, whose estimated value would be almost ₹10 lakh crore.
  - But the income realized by the Tamil Nadu HR&CE Department is a meagre ₹120 crore per year.
  - This is less than the amount collected from temples as 'administrative fee'.
- **Forcible collection:**
  - In addition, the HR&CE Department collects hundreds of crores as 'Common Good Fund', though the courts have frowned upon such forcible collection.
- **Land Usurp:**
  - As per the Department's own admission, almost 47,000 acres of Hindu temple land have been usurped since 1986 under its "watch".
- **No proper records:**
  - The Tamil Nadu HR&CE Department does not even have records of its own executive notifications justifying its management of certain temples.
  - The Madras High Court has lamented on this deplorable state of affairs brought to its notice by temple activists.
  - On May 12, 2022, in a Public Interest Litigation seeking the removal of executive officers functioning in 47 temples without any orders of appointment, a Division Bench ordered the production of records.
  - The Department has still not produced a single record to the court.
- **No external Audit:**
  - Meanwhile, no external audit, as required by law, is being conducted for temples under HR&CE, and there are 1.5 million audit objections pending resolution since 1986.

Direction from the High court:

- **In a scathing indictment of the HR&CE Department, the Madras High Court in a 2021 judgment gave 75 directions covering:**
  - heritage conservation,
  - safeguarding and realizing due income from temple properties,
  - audit, the safety of vigrahams,
  - appointment of trustees and
  - formation of tribunals for speedy dispute resolution.
- Not one of them has been complied with.

Way Forward:

- A long line of judicial precedents, post the 42nd Amendment, emphasize that secularism means the state cannot mix with religion.
- Whatever brand of secularism people subscribe to, nothing justifies a state official dictating to a religious functionary how worship is to be conducted.
- There are suggestions that handing over the temples to the community will strengthen class hierarchies. The colonial law, the **Religious Endowments Act (Act XX of 1863)** has similar provisions for handing over religious institutions to society.
- The purpose is to involve the community, which has been **excluded by the state.** The objective is not to replace one bureaucracy with another.
- The participation of different stakeholders and the building of consensus among them will determine who will take over temples.
- However, the evils of the state perpetuated in the name of 'secular management' must be remedied first.

1.5. Making Panchayats Responsive

Why in News?

- A report on 'Performance-Based Payments for Better Outcomes in **Rural Development Programmes'** which looked into human resources available with panchayats has suggested means by which these resources could be augmented and organised for better delivery of programmes.

Key Highlights:

- The annual ranking of **Gram Panchayats on 143 parameters** across human development, economic activity and infrastructure is captured each year as part of the People's Plan campaign called '**Sabki Yojana, Sabka Vikas'.**
- It is organised by the Ministry of Panchayati Raj and Rural Development, in partnership with all the States, districts, blocks, Gram Panchayats and villages. The States have owned the initiative and find it useful.
- However, the actual use of the **village/panchayat level data is still low in planning.**

Increasing Participation of Gram Sabha:

- Mission Antyodaya is a participatory framework developed in 2017, to assess and plan for every Gram Panchayat each year, on the basis of its deficits.
- The calendar of Gram Sabha meetings is displayed and any Indian citizen can choose to go on a surprise visit to a **Gram Sabha meeting.**
- Each of the 29 sectors where Gram Panchayats have a role, is requested to send their frontline worker to the meeting.
- The performance of each Department is reported to the Gram Sabha, progress is displayed on flex boards, and photographs of the meeting are uploaded on the public website.
- These meetings have become an annual feature and attendance is **increasing in the Gram Sabhas.**
- **The Socio-Economic Census 2011** has given the details of deprived households therefore special efforts to provide pre-populated data of deprived households through an app have been made for the data collectors, who are local frontline workers/leaders

Regional variations:

- Of the 2.67 lakh GPs surveyed in 2020, only **31.27 percent** secured more than 60 percent in the annual ranking of Gram Panchayats on 143 parameters.
- There are large regional variations, with **83.31 percent of panchayats** securing over 60 percent in Kerala compared to only 13.75 percent in Bihar and 18.86 per cent in UP.
- Southern and **Western region Gram Panchayats** generally have better scores. The decline of poverty in southern States happened on account of-
    - Adolescent girls in higher education,
    - Decline in fertility,
    - Improvement in health services,
    - Formation of SHGs,
    - Access to skills and vocational courses,
    - Bank loans to SHGs without collaterals.

Way Forward:

- With every Gram Panchayat having a **Local Government Directory (LGD)** code, it is possible to collect LGD-compliant data village institution-wise and through Application Programming Interface (API) sharing, ensure a full profile of the village and its performance.
- The **SECC Household Temporary Identification Number (TIN)** could be the identifier for deprived households.
- The DISHA platform for Members of Parliament provides real-time analysis on over **50 programmes that have become LGD compliant. DISHA** data can be made public for greater accountability.

Conclusion:

- The groundwork for the effective decentralisation of funds, functions and functionaries for the 29 sectors listed in the Eleventh Schedule of the Constitution has been prepared.
- Human resource support to panchayats, as envisaged by the **Sumit Bose Committee,** needs immediate focus in States.
- Use of community owned data will need funds, functions and functionaries with local governments. The Budget can announce that major step.

1.6. Parliamentary panel to focus on strengthening Regulatory Framework

Why in News?

- After recommending sweeping changes to India's bankruptcy framework and competition regulation, the Parliament's Standing Committee On Finance will now examine the issue of state finances, the working of market and banking regulators, **and the menace of cybercrimes.**

Why is there a need to strengthen the regulatory framework?

- Rapid digital transformation of India's economy—**one of the fastest-growing major economies**—warrants stronger regulators.
- Dominant digital market players need to be identified as digital gatekeepers, will have to file annual compliance reports to the regulator under a proposed forward-looking legal framework called Digital Competition Act that will set fair conduct norms for these entities.
- Experts suggest that both the **Competition Amendment Bill, 2022,** and the proposed **Digital Competition Bill** be passed immediately to strengthen the regulatory requirements.
- Moreover, a regulatory framework for news publishers to enter into fair advertisement contracts with digital market gatekeepers, such as dominant online search engines, should be set in the proposed **Digital Competition Act.**

What are the key areas identified by the Parliamentary panel to strengthen competition regulatory framework?

1. **Areas of cybercrime need to be addressed comprehensively:**
    - Issues like fraud loan apps, various kinds of ponzi schemes easily scam people.
    - Cybercrime, particularly these fraud apps, is a very high priority.
2. **Area of state finances need to be addressed comprehensively:**
    - Many states now, post-covid, are dealing with a lot of challenges in terms of their finances.
    - The switch from the **National Pension System (NPS) to the Old Pension System (OPS)** is going to aggravate some of these public finance issues.
3. **Strengthening of regulatory framework:**
    - Regulators **like CCI, SEBI and RBI** need to review to make them ready for a **$5 trillion or $10 trillion economy** so that India can expand into that comfortably.
    - India has got to build regulatory capacity, skills, and expertise.
4. **Require to be very vigilant in terms of regulations and innovation:**
    - India has a very sophisticated financial system now, particularly as far as the digital infrastructure is concerned.
    - Currently, direct benefits transfer, UPI, fintech proliferation, with digital currency coming in, all of these require us to be very vigilant in terms of regulations and innovation.

What are the panel recommendations on the Competition Amendment Bill?

1. **Firstly, mandatory transaction threshold limit:**
    - it will be mandatory to notify the Commission of any transaction with a deal value in excess of ₹2,000 crores and if either of the parties has substantial business operations in India.
    - This led to developing of very important technologies or market shaping impact—within the purview of CCI.
2. **Secondly, very important from the ease of doing business perspective, was the question of settlement and commitments.**
    - Introducing much more flexibility in the adjudication process with settlements and commitments now proposed for all parties.
    - It could be possible to get to a negotiated settlement quickly without allowing appeal so that justice could be delivered quickly.
3. **A very important aspect of the settlement and commitment process is that it is non-appealable.**

Why should India have two laws on competition— Competition Amendment Bill & Digital Competition Act?

- The reason to have two laws is that one (Competition Act, 2002) deals with **'ex-post'** cases of anti-competitive practices (where the investigation is initiated after a breach is committed).
- While the **Digital Competition Bill** deals with 'ex-ante,' that is, 'before the fact' anti-competitive practices (or forward-looking regulations).
- By putting in place an ex-post and ex-ante framework, India will have a **competition framework** in India that is world-leading.
- **The Digital Competition Bill** is proposed to function by identifying the small handful of systemically important digital intermediaries that do have a dominant role in certain markets.
- These companies are going to have to play by the rules, and they will also file a compliance report annually to make sure that these rules are followed. This is the ex-ante regulation.

Way Forward:

- The **Parliamentary committee** has unanimously made a certain set of recommendations so the government can take whichever of the recommendations they think are suitable, and these Bills will be passed with support from everyone both in the **Lok Sabha and Rajya Sabha.**
- The **Competition Amendment Bill** should get passed absolutely in the Budget session, and if the Digital Competition Bill can be introduced in the Budget session, then there will be a chance to refine it. It can be passed in the monsoon session later.
- After both bills passed, India will then have the most well-thought-out, fairest and most open set of competition laws in the world.

1.7. Rules made by Centre, State cannot exceed powers granted by Parent Statute

Why in News?

- Recently, the Supreme Court held that delegated legislation, including rules and regulations formed by State and Central authorities, should **not supplant but supplement the parliamentary statute** from which it draws power.

Background

- The Supreme Court was hearing an appeal filed by the **Kerala State Electricity Board against a State High Court** decision which upheld Regulation 153(15) of the Kerala Electricity Supply Code, 2014.
- This Regulation provided that **'unauthorized additional load'** in the same premises and under the same tariff shall not be reckoned as 'unauthorized use of electricity' except in cases of consumers billed on the basis of the connected load.

What is the Current Supreme Court Verdict?

- **Court observations**
    - **The SC held that** "If a rule goes beyond the rule-making power conferred by the statute, the same has to be declared invalid. If a rule **supplants any**

provision for which power has not been conferred, it becomes invalid".
    - A delegated power to legislate by making **rules or regulations cannot be exercised** so as to bring into existence substantive rights, obligations or disabilities not contemplated by the provisions of the parent statute.
    - **Since a body** making rules or regulations has **no inherent power of its own to make rules,** but derives such power only from the statute, it has to necessarily function within the purview of the statute.
    - The delegated legislation should not **travel beyond the purview of the parent Act.** If it does, it is ultra vires and cannot be given any effect.
- **Court's verdict**
    - The court held that overdrawal of electricity is **prejudicial to the public at large,** it will impact the entire supply system, undermining its efficiency, efficacy and even-increasing voltage fluctuations.
    - The apex court reversed the High Court decision while holding that the **Regulation 153(15) was inconsistent with Section 126(6)** of the Electricity Act, 2003.
    - Section 126 of the 2003 Act was enacted with a **specific purpose to restrict** such unauthorized consumption of electricity.

Constitutional Provisions on Delegated Legislation

- Although the concept of delegated legislation is **not explicitly mentioned in the Indian Constitution,** it can be understood by interpreting Article 312.
- Article 312 gives the right to the **Rajya Sabha to open a new branch of All India Service** with a majority of two-thirds majority vote.
- In the **D. S. Grewal v. State of Punjab,** the Supreme Court held that **Article 312** of the Constitution of India deals with the powers of delegated legislation.
- The Indian Constitution does not give **unlimited or uncontrolled** powers for delegated legislation in India.
- The SC has specified the following circumstances where a delegated legislation **would be invalid-**
    - If the delegated legislation **violates any of the fundamental rights** or any other provision of the Indian Constitution.
    - The Rules / Regulations are **ultra vires the provisions of the parent Act** and fail to conform to the substantive provisions of the statute.
    - The Executive **did not have** the legislative **competence** to frame the said rule or regulation.
    - The delegated legislation **exceeds the limits** of the authority conferred by the enabling statute.
    - A delegated legislation can also be struck down on the **ground of manifest arbitrariness,** and unreasonableness.
    - The SC has held that the Legislature **cannot delegate its 'essential legislative functions'** to the executive branch.

Merits of Delegated legislation

- **Reduces the workload of Parliament**
    - The Parliament has to pass several legislation within a short span of its life.
    - So there arises the need to overcome the workload constraints and it can be possible through **delegating legislative authority** to the subsidiary or the executives.
- **Brings in Technical Expertise**
    - It is difficult for the Members of Parliament to have all the knowledge needed for making laws in various fields like **controlling technology, ensuring environmental safety,** dealing with various industrial problems which need basic knowledge.
    - Thus, delegates authorities with extra skills, experience, and knowledge are more suitable for making law.
- **Decentralized decision making**
    - The local bodies can make **better laws for their area** that a Parliament cannot do so because they know their locals need and what they want.
- **Rapid Action during Emergencies**
    - Quick action is needed in times of emergencies like war, internal disturbances, floods, epidemics, strikes, lock-outs, bandhs, etc. and lengthy legislation process of Parliament is just **not suited for such situations.**

- If the executive is armed with special powers, the situation can be kept under control very quickly.

- **Enables flexibility**
  - Delegated legislation allows the **executive to overcome practical difficulties** by exercising the power conferred on it by the parent act.

Challenges associated

- **No parliamentary deliberation**
  - Parliament does not get a chance to debate rules, regulations, etc. made by the executive.
  - Also, non-elected people cannot make much delegated legislation as it would be **against the spirit of democracy.**
- **No prior publicit**
  - Prior publicity is not always possible in case of **rules and regulations** and the benefits of public discussion and criticism are lost.
- **Possibility of overreach and or overlapping**
  - Delegated legislation can often be **confusing, complex and difficult** to understand and thus leading to confusion and lack of uniformity.
- **Misuse for political gains**
  - The executive makes law according to the political heads of the organizations.
  - Hence, it results in the misuse of the legislation made by the Executive by the ruling party.

Conclusion

- The SC has observed in St **Johns Teachers Training Institute v. Regional Director, NCTE, (2003)** that delegated legislation can be considered as a "necessary evil", and an unfortunate but inevitable infringement of the doctrine of separation of powers.
- However, given the complexities and the practical considerations involved, delegated legislation is here to stay.

1.8. Chargesheet is not a "Public Document": SC

Why In News?

- The SC bench declared chargesheets to be private documents.

About

- The Supreme Court said that the state is not obliged to provide the public free access to chargesheets by uploading them on police or government websites.
- The Court said that putting up chargesheets for public viewing would violate the rights of the accused, victims, and the investing agency.

What is a Chargesheet

- A charge sheet refers to a formal police record showing the names of each person brought into custody, the nature of the accusations, and the identity of the accusers. The charge sheet contains majorly 4 parts
  - Information about the accused and the witnesses
  - The charges and specifications
  - The preferring of charges and their referral to a summary
  - For the trial record
- The charge sheet is to be filed within 60 days from the date of arrest of the accused in cases triable by lower courts and 90 days in cases triable by the Court of Sessions.
- No case for grant of bail will be made under **section 167(2) of the CrPC** if the charge sheet is filed before the expiry of 90 days or 60 days, as the case may be, from the date of first remand.
- The right of **default bail** is lost, once the charge sheet is filed.
- A charge sheet is distinct from the FIR, which is the core document that describes a crime that has been committed.
- Chargesheet usually refers to one or more FIRs and charges on an individual or organization for the crimes specified in those FIR.
- Once the charge sheet has been submitted to a court of law, prosecution proceedings against the accused begin in the judicial system.

What is the First Information Report?

- F.I.R. means any information recorded by an on-duty officer given by an aggrieved person or any other person either in writing or made orally about the commission of a **Cognizable Offence**.
- Based on the information provided F.I.R. can be registered by the **Judicial Magistrate** by giving direction to the concerned jurisdictional area of the Police Station.
- **Zero F.I.R.**: With the help of zero F.I.R., a complaint can be lodged at any police station irrespective of the jurisdiction of the Police Station. It is an amendment that came after **Nirbhaya Rape Case.**

1.9. Women in Command Roles of Indian Army

Why In News?

- For the first time, the Indian army promoted **women officers to command units** in their respective arms and services.

About

- 80 women officers in the Indian Army **have been cleared for the rank of Colonel (selection grade)**, making **them eligible to command units** in their respective arms and services for the first time.
- The Women Officers were selected by the **Special No. 3 Selection Board** for promotion from the rank of **Lt Colonel to Colonel** to bring them on **a par with their male counterparts**.
- Women officers were selected from the **batch of 1992 to 2006** in **various arms and services**, including Engineers, Signals, Army Air Defence, Intelligence Corps, Army Service Corps, Army Ordnance Corps and Electrical and Mechanical Engineers.
- The **Corps of Engineers has the maximum vacancy** followed by the Army Ordnance Corps and Electrical and Mechanical Engineering.

Women Induction in Army: A battle long fought

- **1992**: Women were **first inducted into the Indian Army** as officers in **non-medical roles while the** Indian Army Medical Corps started inducting them from 1993.
- **2010**: Delhi High Court ruled that the Indian **Army's policy of not allowing women** to serve in combat roles was **discriminatory and violative** of the Constitution.
- **2013:** Supreme Court **upheld the decision of the Indian Army to exclude women** from certain **combat roles**, stating that the Indian Army was not ready for women in combat roles due to societal attitudes and lack of infrastructure.
- **2016**: Indian Army announced that it would begin inducting women into combat roles in select military units, starting with the **Corps of Military Police.**
- **2017**: **Supreme Court** stated that **women should be given equal opportunities** in the Army, **including in combat roles.**
- **2020:** Indian Army announced that it **would open up all positions** to women, including those in **combat roles**
- **2021**: The Indian army starts to induct women in **short service commission as fighter pilots**.

Violation of Rights

- **Right to equality(Article 14)**: The exclusion of women from certain roles in the Indian Army has been seen as a violation of this right, as it discriminates against women on the basis of their gender.
- **Right to work(Article 15)**: The exclusion of women denies them the opportunity to work in certain roles based solely on their gender.
- **Right to non-discrimination(Article 16)**: The exclusion of women from certain roles in the Indian Army is a violation of the right to non-discrimination, as it discriminates against women on the basis of their gender.
- **Right to life and personal liberty(Article 21)**: The exclusion of women is a violation of the right to life and personal liberty, as it denies women the opportunity to serve their country and defend their rights and liberties.
- **Right to education(Article 21)**: Exclusion from certain roles in the Indian Army is a violation of the right to education, as it denies women the

opportunity to pursue education and training in certain fields.

- **Right to freedom of expression(Article 19)**: The exclusion of women denies women the opportunity to express themselves and their capabilities through their work.

Way Ahead

- Although allowing women on equal footing in the army is a progressive step, the Indian Army should take steps to **create a more supportive environment** for women, such as increasing the number of **women-only barracks** and **providing childcare facilities.**
- While there have been challenges with the induction of women into the Indian Army, there is a need to promote the overall trend as **many women have succeeded** in their roles and made **valuable contributions to the military.**

2. Economy

2.1. How the International Year of Millets will boost Indian millets

Why in News?

- As proposed by India, United Nations General Assembly (UNGA) has declared 2023 as the International Year of Millets (IYM).
- Prime Minister aims to make IYM 2023 a 'People's Movement' and also to position India as the 'Global Hub for Millets'.

How has the Indian government taken a lead in spearheading this?

- **Rebranding:**
  - In April 2018, millets were rebranded as **"Nutri Cereals"** and the same year, the government declared it the National Year of Millets to generate more production and demand.
- **Opening ceremony:**
  - On December 6, 2022, the **Food and Agriculture Organization (FAO)** organized the opening ceremony for the IYM 2023 in Rome.
  - A delegation of senior government officials from India also participated.
- **Millet Luncheon:**
  - The Department of **Agriculture and Farmers Welfare** last month hosted a special **'Millet Luncheon'** for the Members of the Parliament, which was attended by the Vice-President and the Prime Minister.
- **G20 Meetings:**
  - Millets have been made an integral part of the **G-20 meetings and delegates** will be given a true millet experience through tasting, meeting farmers, and interactive sessions with start-ups and FPOs.
- **Promotion through various activities:**
  - The Ministry of Sports and Youth Affairs has planned 15 activities in January — **engaging sportspersons, nutritionists, and fitness experts through video messages,** and conducting webinars on millets with leading nutritionists, dieticians, and elite athletes.
- **Fairs and exhibitions:**
  - The Ministry of Food Processing Industries will be organizing Millet Fair-cum-exhibitions in **Andhra Pradesh, Bihar, and Madhya Pradesh.**
  - FSSAI will organize **Eat Right Melas in Punjab, Kerala, and Tamil Nadu.**
  - Chhattisgarh, Mizoram, Rajasthan, Maharashtra, Uttarakhand, and Punjab are scheduled to carry out specific activities for sensitization and promotion of IYM besides conducting millet-centric activities including Mahotsav/melas and food festivals, training of farmers, awareness campaigns, workshops/ seminars, placement of hoardings and distribution of promotional material in January.
- **Showcasing the diversity of Indian millets:**
  - The **Agricultural and Processed Food Products Export Development Authority**

(APEDA) will be participating in a trade show in Belgium where it will showcase the diversity of Indian millets.

- **Global celebration:**
  - Indian embassies across more than **140 countries will be participating in the celebration of IYM** during 2023 by conducting side events involving the Indian diaspora through exhibitions, seminars, talks, and panel discussions.

The positives of millets:

- **Nutrition:**
  - Nutritionally superior to wheat and rice owing to their higher levels of protein with a more balanced amino acid profile, crude fibre and minerals such as iron, zinc, and phosphorous, millets can provide nutritional security and protect against nutritional deficiency, especially among children and women.
  - **Anaemia (iron deficiency), B-complex vitamin deficiency, and pellagra (niacin deficiency)** can be effectively tackled with an intake of less expensive but nutritionally rich food grains like millets.
  - Millets are Nutri-cereals which are highly nutritious and known to have high nutrient content which includes protein, essential fatty acids, dietary fibre, B-Vitamins and minerals such as calcium, iron, zinc, potassium and magnesium.
- **Health:**
  - Millets can also help tackle health challenges such as obesity, diabetes and lifestyle problems as they are gluten-free, have a low glycaemic index and are high in dietary fibre and antioxidants.
  - They help in rendering health benefits like reduction in blood sugar level (diabetes), blood pressure regulation, thyroid, cardiovascular and celiac diseases.
- **Low input requirements:**
  - **Additionally, millets do not require high-quality soil to grow** and hence can easily cater to the need of the growing population.
  - Millets are hardy and drought-resistant crops. This has to do with their short duration **(70-100 days, against 115-150 days for rice and wheat),** lower water requirement (350-500 mm versus 600-1,250 mm) and ability to grow even on poor soils and in hilly terrain.
  - They can withstand higher temperatures, making them the perfect choice as **'climate-smart cereals'.**
- **Livelihood:**
  - Millet's production has great potential to generate livelihoods, increase farmers' income and ensure food and nutritional security, not only in India but also in other parts of the world.
  - Unless consumption is increased, the demand will not be generated to **motivate farmers for shifting to millets.**

Can government policies, (eg MSP) play a role in increasing millet production and use in India?

- Even though the MSP of millets **(ragi, bajra, and jowar)** has been raised by 80-125 percent between 2013-14 and 2021-22, their combined production has dropped by 7 percent to 15.6 million tonnes during the last eight years.
- While Bajra output has been stagnant, both **jowar and ragi production has declined.**
- This points to the requirement of policy-level intervention so that farmers get remunerative prices for millets and their returns become higher than that of crops such as paddy.

The export market for Indian millets:

- The $470-million (in 2021) global millets market is projected to register a CAGR of 4.5 percent during the 2021-2026 period.
- APEDA has set a target of $ 100 million in millet exports by **2023-24 from $64.28 million in 2021-22.**

Way Forward:

- The International Year of Millets-2023 would provide an opportunity to globally promote millets as nutritious cereals.
- A combination of central funding with decentralised procurement linked to nutrition goals — specifically the eradication of hidden hunger among school-age children — can do for

millets what the **Food Corporation of India achieved with rice and wheat.**

- Accelerating the **Incubation of Millet Start-ups** is an essential forward linkage for catering to various dynamic segments in domestic and global markets.
- Customer's mindfulness and the focus on health & well-being should be correctly captured and in demand for superfoods and functional foods should be fuelled with millet-based products.
- Roping in the private sector for inclusive investment will go a long way in taking millets not only a **Pan-India but also mainstreaming** in export markets as a run-up for the International Year of Millets-2023.

2.2. India's slowing Exports: Concern for India

Why in News?

- Recently, India's goods exports **rebounded from a nearly 17% dip in October to a mild 0.6% uptick in November.**
- While the value of exports recovered to $32 billion from $29.8 billion in October, it is still significantly below the $39 billion averaged between April 2022 and September 2022.

Key Highlights:

- **Imports growth moderated to 5.4%** with the value of shipments slipping to $55.9 billion - a level last seen in February 2022, which was followed by seven months of import bills of around $60 billion.
- The **merchandise trade deficit eased below $25 billion** for the first time in five months.
- As per the recently released **CARE Ratings research paper,** having grown 11.1% in the first eight months of 2022-23, goods exports could still fall 2.3% over the full year.
- While the **WTO expects global goods trade to grow just 1%** in 2023, CARE expects India's exports may rise 1.5% in 2023-24.

What are the Major Concerns for India's Foreign Trade?

- **Non-oil Exports' Performance**
    - A part of the import bill dip was triggered by lower non-oil cargo, signaling slowing domestic demand, but **non-oil exports' performance is a greater worry.**
        - Their share in exports growth has been shrinking since June, with the contraction accelerating for many sectors from September to November- engineering goods that drove much of India's record $422 billion goods exports in 2021-22, contracted 11.3% while textiles fell a steeper 25%.
- **Key Markets heading towards Recession**
    - December's pending festive orders may still lift export numbers month-on-month, but the **onset of 2023 would spell greater pressures for India's trade story,** with key markets heading into a recession.
- **Fall in the Export of Engineering Goods**
    - Engineering goods, which form a larger part of India's goods exports in recent years, **slid 21%.**
        - This slowdown is attributed to **high inflation** in developed regions, **falling demand** in China, **slowdown** in the EU and the U.S. and the **Russia-Ukraine war.**
        - The Commerce Ministry explained that for October, a decline of $2 billion worth of exports was seen in steel and allied products **because of removal of export duty** which was levied on these products earlier.
        - The Ministry also highlighted that in the month of **Diwali** every year, workers tend to take leave, thus impacting output.
- **Not a Healthy Import Cover**
    - Import Cover measures **the number of months of imports that can be covered with foreign exchange reserves available** with the central bank of the country.
    - For the week ended December 2, foreign exchange reserves stood at about $561 billion.

- If we take October imports at $56.7 billion (an eight-month low) as a benchmark, then we have **roughly about 9-10 months' worth of import cover** which isn't as healthy as the 14-to-15-month cover that we had seen during the pandemic.

What about other exporting nations?

- Vietnam, an **export-dominated country**, recorded **a 4.5% growth** in exports from a year earlier to $29.18 billion amid 'sustained foreign demand'.
- Similarly, exports by the **Philippines grew 20% in October.**
  - The government there had said that exports rose for the first time in three months in September amid what it calls 'signs of reviving foreign demand'.
- **China is an outlier this year** because of stringent lockdowns that are impacting manufacturing output.

Is domestic demand enough?

- The monthly Finance Ministry review for October acknowledges **a slowing export scenario but emphasizes that domestic demand will carry through.**
  - The report states that the global slowdown is driven by a 'confluence of stubbornly high inflation, rising borrowing costs and geopolitical tensions', but cites local demand as being 'resilient'.

Way Forward:

- The **easing of some commodities' prices may help** curb the import bill and deficit to some extent, but this could cut both ways as the value of some exports that boomed because of global price trends earlier, will also decline.
- **Services exports and remittance inflows may cushion India's current account deficit** from the goods trade imbalance and restrict the economy's external vulnerabilities, but **policy makers need to focus on ensuring a soft landing for factories in export-intensive sectors** that are also massive employers so that the global gloom does not hit domestic sentiment.
- Vietnam, Cambodia, Bangladesh and China saw their share rise even when global trade growth itself slowed in the years before COVID-19.
  - India too, **should aspire to emerge stronger from the brewing storm.**

Conclusion:

- **Keeping an eye on market realities to respond deftly to emerging challenges is vital** for Indian exporters to **sustain through the coming turmoil and perhaps,** even expand their share in the global trade pie.

2.3. Draft New Industrial Policy

Why In News?

- Recently, the draft - **Statement on Industrial Policy 2022 Make in India for the world** - has been circulated to different ministries for their views and comments.

Key Points of Draft New Industrial Policy

- **Prepared By:**
  - The Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry
- **Various ways for wider access to finance for the industry:**
  - Setting up of a development finance institution to provide finance at competitive rates
  - Considering using some part of foreign exchange reserves for such funding.
- **Aim:**
  - Addressing issues and challenges of industry through certain policy measures to foster and create an innovative and competitive industrial ecosystem in the country.
- **objectives:**
  - Focus on competitiveness and capability;
  - Economic integration and moving up the global value chain;
  - Promoting India as an attractive investment destination;

  - Nurturing innovation and entrepreneurship; and
  - Achieving global scale, and standards.
- **Made in India brand:**
  - The scheme could serve as a platform for manufacturers to demonstrate local value addition which can enhance the country's credibility as a source of quality products.
  - It is making finance accessible to industry and for marketing the Made in India brand.

Evolution of India's Industrial Policy

- The quest for industrial development started soon after independence in 1947.
- This will be the **third industrial policy** after the first in 1956 and the second in 1991. It is likely to replace the industrial policy of 1991 which was prepared against the backdrop of the balance of payment crisis.
- The **Industrial Policy Resolution of 1948** defined the broad contours of the policy delineating the role of the State in industrial development both as an entrepreneur and authority.
- This was followed by comprehensive enactment of **Industries (Development & Regulation) Act, 1951 (referred as IDR Act)** that provides for the necessary framework for implementing the Industrial Policy and enables the Union Government to direct investment into desired channels of industrial activity inter alia through the mechanism of licensing keeping with national development objectives and goals.
- **Economic reforms** initiated since 1991 envisages a significantly bigger role for private initiatives.

Issues

- The potential role of industrial policy has been consistently downplayed in developing countries outside of East Asia ever since the early 1980s after the growing dominance of the orthodox paradigm with well-known consequences in much of India, Latin America and also sub-Saharan Africa.
- Industrial policies are more focused on large firms and many of the industries currently chosen to be under PLI (production linked incentives) are highly **capital- and skill-intensive**.
- Even in Japan and South Korea, where industrial policy has been otherwise successful, it has often mainly helped large firms.
- In a world of **geo-political conflicts and supply chain disruptions**, national security is often considered a major goal.
  - Hence sometimes resources are less allotted to the industrial sector .
- Indian politicians and bureaucracy are more comfortable with "top-down" over-**centralised policies**.
- The government had failed to instill confidence even as its policies till now had crippled the construction, manufacturing, real estate, pharma and other major contributors to the economy.
- Lakhs of workers have **lost job opportunities** because of the retrogressive policies.
- The role of industrial policy is **not only to prevent coordination failures** but also to **avoid competing investments** in a capital-scarce environment.
- Excess capacity leads to price wars, adversely affecting profits of firms — either leading to bankruptcy of firms or slowing down investment, both happening often in India (witness the aviation sector)
- Imperfect information with respect to firm-level investments in learning and training; and **lack of information and coordination** between technologically interdependent investments.
- Industry's **inadequate expenditure on research and development (R&D)** and micro, the small and medium enterprises sector facing tough competition from cheap imports from China and other countries
- **Lack of human capital** has been a major constraint upon India historically being able to attract foreign investment (which Southeast Asian economies succeeded in attracting).

Way Ahead

- The implementation of an **integrated investment promotion strategy** by involving district, state, national and international market synergies is needed.
- Providing **performance-based loans and incentives** for innovation and green growth.
- Leveraging fintech and **encouraging MSMEs** to choose the corporate bond market.

- Accepting **intellectual property rights** as collaterals for loans.
- Rolling out social security schemes for women workers, and inclusion of labour-intensive industries under the production-linked incentive scheme.
- Enabling **supply chain financing**.
- Encouraging microfinance institutions to form cooperative groups and finance micro-enterprises at affordable rates.
- **Incentivising public procurement** to promote Make in India, creating a national digital grid, developing a robust data protection regime, setting up of a technology fund, and creating a task force to continuously identify skill gaps.
- On nurturing innovation, the **creation of innovation zones** at the level of urban local bodies and the formulation of a national capacity development program should be done.

2.4. Bad Loans

Why In News?

- Recently, the Parliament has been informed by the Finance Minister that banks had written off bad loans worth ?10,09,511 crore during the last five financial years.

More about the news

- Out of the total ?10.1 lakh crore, only ?1.32 lakh crore has been recovered.
- This comes to only about 13% as a percentage of write-offs.

What's the difference between Non-performing Asset (NPA) and Non-performing loan (NPL)?

NPA	NPL
NPAs are documented on a bank's balance sheet after the borrower fails to clear the dues for a prolonged period	The borrower has defaulted and hasn't cleared any dues or installments for some time
NPAs place financial burden on the lender	In the banking sector, loans are declared non performing if the borrower has missed payments for 90 days
NPAs also showcase the financial wellbeing of a bank	The International Monetary Fund (IMF) will consider loans as non performing if the chances of recovering money is uncertain and are less than 90 days past due
The classification of NPAs depends on the repayment length	NPLs are also sold by banks to other banks, and maybe, investors
NPAs can be classified as substandard, doubtful and loss asset	
Lenders can recover their losses by taking possession of any assets that belongs to the borrower	

Background

- **2009**: The RBI brought out norms that set out categories of NPAs and what banks must do as these bad loans age.
    - The RBI's master circular in 2009 started off the journey on NPA recognition.
        - It states that if an asset has been 'doubtful' for a certain period, the value of that asset must be provided for in parts, as the asset ages.
- **2014-15:** India became more stringent in recognising loans as 'bad' in the 2014 to 2015 period.
    - The periodic asset quality review was introduced.
    - RBI stepped in to prevent evergreening of loans.
        - It means lending more to an already stressed asset in the hope that it could be brought back to its feet.
- **2021:** There was a revision in 2021 which made recognition far more stringent.
    - Even if the asset is standard and there is no problem with it, banks are expected to make provisions depending on the risk element for that sector.
    - Like home loans with teaser rates are at greater risk than those that are not. Hence provisions have to be made for such loans.
- **A National Asset Reconstruction Company Ltd. (NARCL)** was announced in the Union Budget for 2021-2022 to resolve stressed loans amounting to about ?2 lakh crore in phases.

What is a Bad loan and NPA?

- **What is a Bad Loan**?
    - A bad loan is that which has **not been 'serviced'** for a certain period.
        - **Servicing a loan is** paying back the interest and a small part of the principal depending on the agreement between bank and borrower.

- Bad loans are where there is less certainty that the loan would be paid back in full.

- **What is NPA?**
  - A non performing asset (NPA) is a loan or advance for which the principal or interest payment remained overdue for a period of 90 days.
  - **Types of NPA:**
    - **Sub Standard:** A sub-standard asset is one that is classified as an NPA for a period not exceeding twelve months.
    - **Doubtful:** A doubtful asset is one that has remained as an NPA for a period exceeding twelve months.
    - **Loss**: A loss asset is one where loss has already been identified by the bank or an external institution, but it is not yet completely written off, due to its recovery value, however little it may be.

What is the need to recognise NPAs?

- **Health of the financial system**: In the banking system, the government and regulatory authorities need to have a good view of how healthy the financial system is.
  - **A weak financial system** can eventually ruin lives and livelihoods.

Causes and challenges related to Non-Performing Assets (NPA)

- **Lack of SWOT analysis**: The bank lends to the corporations/persons etc. whose creditworthiness is not guaranteed and thus taking a lot of high risks.
- **Lack of understandability:** The banks are not able to diminish their losses by a complete understanding of the sufficiency of the bank in terms of the loan or capital loss at a specific time frame.
- **Redirection of funds**: The funds are being redirected elsewhere by the promoters of the companies.
- **Investing in non viable projects**: The banks that try to fund projects that are not viable results in high NPAs.
- **Lack of information:** Not enough means to collect as well as distribute credit information in between the commercial banks.
- **Non-efficient recovery of the debts** from the overdue borrowers.
- **Delay in legal procedures**: Even if an NPA is fully recognised in a particular year, the fastest of legal processes may not resolve for full repayment.
- **Delays in post-haircut payments**: Not only do banks take significant haircuts when it comes to recovery but the amount to be repaid post-haircut may be delayed.
- **Provisioning:** The bad loans lead to banks having to save a part of their operating revenue to account for bad loans which is called Provisioning.
- **Downfall in the share markets:** Any reduction in the perceived valuation of the banks might lead to loss of share value of the banks, leading to general downfall in the share markets. This could result in wiping out shareholders' wealth from the financial markets.

Impact of NPAs on Financial Operations

- This **reduces the profits** of the banks.
- This reduces a bank or financial institution's **capital adequacy.**
- The banks have become averse to giving loans and taking risks of zero percent. Thus, the **creation of fresh credit is debarred.**
- The banks start **concentrating on the management of credit risk** instead of the bank becoming profitable.

Way forward

- **The transparent recognition of NPAs** caused a rise in the percentage for gross loans from 4.1% in 2014 to 11.46% in 2018.
- **The government's strategy of recognition, resolution, recapitalisation and reforms** has helped NPAs to decline to 5.9% by 2022.
- **Taking a person/corporation's CIBIL score** before lending a loan or finance to the person/corporation.
- **Usage of mechanisms for alternative dispute resolution mechanisms** for receiving the

settlements faster like the usage of Debt Recovery Tribunals and Lok Adalats.
- **The defaulters' information should be actively circulated** so that they cannot opt for any other loans/finances from elsewhere.
- Using the **Asset Reconstruction Company's services.**
- Taking **strict action** against large NPAs. Legal reforms like the implementation of the Insolvency and Bankruptcy Code to be used.
- **Other Steps:**
    - Proper implementation of **Indradhanush plan.**
    - **Strengthening of Securitization and Reconstruction of Financial Assets and Enforcement of Securities Interest (SARFAESI Act)** and Debt Recovery Tribunals
    - **Setting up of dedicated Stressed Asset Management Verticals (SAMVs)** in banks for large-value NPA accounts etc.

2.5. Additional Tier-1 (AT1) bonds

Why In News?

- Recently, the Bombay High Court Friday quashed the write-off of Additional Tier-1 (AT1) bonds issued by Yes Bank Ltd.

More about the news

- **SEBI investigation:**
    - A Sebi probe found that the bank facilitated the selling of AT1 bonds from institutional investors to individual investors.
    - It found that during the process of selling the AT1 bonds, i**ndividual investors were not informed** about **all the risks involved in the subscription of these bonds**.
- **Super FD' and 'as safe as FD':**
    - The Sebi investigation also found that Yes Bank represented these bonds as a **'Super FD'** and **'as safe as FD'** to the investors.
- **Reckless selling of the bonds:**
    - SEBI also found that the push from the managing director of Yes Bank to down-sell the AT1 bonds **led its private wealth management team to recklessly sell the bonds** to individual investors.

More about the Bonds

- **Meaning:**
    - A bond is simply **a loan taken out by a company.**
    - Instead of going to a bank, the **company gets the money from investors** who buy its bonds.
    - **Interest coupon:**
        - In exchange for the **capital**, the company pays an **interest coupon**, which is the annual interest rate paid on a bond expressed as a percentage of the face value.
    - **Interest:**
        - The company pays the interest at predetermined intervals (usually annually or semiannually) and returns the principal on the maturity date, ending the loan.
- **Significance:**
    - The bond market **can help investors diversify beyond stocks**.
    - Some of the characteristics of bonds include their **maturity, their coupon (interest) rate, their tax status, and their callability**.
- **Stock vs. Bonds:**
    - **Safer:**
        - When bonds and stocks are compared, bonds are considered to be a safer investment.
            - It is important to note that bonds are **not completely risk-free** and only receive preference in case of bankruptcy.
    - **Less volatility:**
        - Owning a stock offers more potential for returns, but bonds come with much less downside volatility.
        - Bond investments play a key role in balancing and reducing the short-term volatility associated with stocks.
    - **Larger market:**
        - The bond market is actually much larger than the stock market, in terms of aggregate market value.
- **Risks:**
    - Several types of risks associated with bonds include **interest rate risk,**

credit/default risk, and prepayment risk.

- **Bond Ratings:**
  - Most bonds come with a rating that outlines their quality of credit.
  - That is, how strong the bond is and its ability to pay its principal and interest. Ratings are published and are used by investors and professionals to judge their worthiness.
  - **Rating agencies:**
    - The most commonly cited bond rating agencies are **Standard & Poor's**, **Moody's** Investors Service, and **Fitch** Ratings.
    - They rate a company's ability to repay its obligations.
  - **Ratings range:**
    - Ratings range from **AAA to Aaa** for high-grade issues very likely to be repaid to **D** for issues that are currently in default.
- **Types of Bonds:**
  - **Central Government Bonds:**
    - As they are issued by the government, central government bonds carry the sovereign guarantee.
    - This makes them one of the safest types of bonds. However, these bonds are exposed to inflation rate risk due to the long maturity period.
  - **State Government Bonds:**
    - State Government bonds are also known as state development loans (SDLs).
    - They are issued by state governments to fund infrastructural developments in the state or during liquidity crunch etc.
  - **Public Sector Bonds:**
    - These bonds are mostly issued by top public sector companies or institutions to fund their growth and expansion needs.
    - They are relatively less risky than corporate bonds.
  - **Corporate Bonds:**
    - Corporate bonds are issued by private companies. They represent a large portion of the bond market in India.
    - By issuing corporate bonds, companies can raise capital at a low cost.

2.6. RBI's report on state govt Budgets

Why In News?

Reserve Bank of India has released its report **'State Finances: A Study of Budgets'** on state government budgets for 2022-23.

About the Report

- It is an **annual report** by the Reserve Bank of India which provides data and analysis of the **fiscal position of State governments in India.**
- It examines the role and impact of **capital outlay** of State governments in India and the challenges they have to confront in this regard with the theme **'Capital Formation in India – The Role of States'.**
  - Capital formation refers to the process by which resources are invested in assets like plants, equipment, machinery, transportation assets, electricity and other **physical assets** as well as in **human capital** through education, health, skill development, scientific advancement, and research.
  - These investments increase the economy's productive capacity, ensure fuller absorption of unutilized labour and other natural resources, and promote efficiency raising innovation.

The salient findings of the report

- **The fiscal health of the States** has improved from a sharp pandemic-induced deterioration in 2020-21 due to economic recovery and resulting high revenue collections.
  - States' **gross fiscal deficit (GFD)** is budgeted to decline from 4.1 per cent of **gross domestic product (GDP)** in 2020-21 to 3.4 per cent in 2022-23.
- **Receipts:** States' **revenue collections** declined in 2020-21 on account of the pandemic-induced slump in own tax revenue, non-tax revenue and tax devolution from the Centre.

    - For 2021-22, States budgeted a sharp **rise in revenue receipts** led by own tax and non-tax revenues and grants from the Centre.
    - States have budgeted for **higher revenue receipts** in 2022-23, driven primarily by SGST, excise duties, and sales tax collections.
- **Expenditure:** States' revenue expenditure had **increased** sharply in 2020-21, reflecting the response to the COVID-19 pandemic.
    - The revenue expenditure of States increased by 20.7 percent in 2021-22 (RE), mainly on account of **increase in developmental spending** on medical and public health, water supply and sanitation and social security and welfare.
    - For 2022-23, States have budgeted an increase in revenue spending, mainly led by **non-developmental expenditure** such as pension and administrative services.
- **Capital Expenditure:** States' capital outlay recorded a **robust growth** of 31.7 per cent in 2021-22, partly supported by the Centre's budgetary allocation for States under the 'Scheme for Financial Assistance to the States for Capital Investment', providing the necessary support to the recovering economy.
    - In 2022-23, they have budgeted for an increase in capital outlay by 38.4 per cent.
- **Debt-to-GDP:** The state debt-to-GDP ratio **remains high.** The debt-to-GDP ratio has fallen from 31.1 per cent in 2020-21 – a year when states had struggled to manage the economic fallout of the pandemic — to 29.5 per cent in 2022-23.
    - It is still higher than 20 per cent recommended by **FRBM Review Committee, 2018.**
    - Punjab, Tamil Nadu, Haryana and West Bengal have the highest interest payments to revenue receipts ratio.
    - This implies that in these states, interest payments account for a sizable portion of the states' revenues, leaving them with less room to spend on other areas of priority such as health or education.
- **Contingent liabilities:** State governments have also seen a **significant expansion** in their contingent liabilities.
    - Contingent liabilities here refer to the obligations of a state government to repay the principal and interest payments in case a state-owned entity defaults on a loan.
- **Old Pension Scheme:** Lastly, new risks have emerged with some states now opting to return to the old pension scheme.
    - In the early 2000s, there was a growing realisation that financing the old pension scheme would prove to be challenging.
    - Shifting back to the old pension scheme will only end up **increasing pension liabilities**, leaving even less room for more productive spending.

Recommendations

- State governments can **promote investment** through both **direct and indirect channels.**
    - The **direct channel** involves spending on physical infrastructure and human capital.
    - **The indirect channels** act by crowding in private investment, promoting good governance, and attracting foreign direct investment (FDI).
- In 2022-23, States have budgeted **higher capital outlay** than in 2019-20, 2020-21 and 2021-22. Going forward, increased allocations for sectors like **health, education, infrastructure and green energy transition** can help expand productive capacities.
- It is worthwhile to consider creating a **capex buffer fund** during good times when revenue flows are strong so as to smoothen and maintain expenditure quality and flows through the economic cycle.
- To crowd in **private investment**, the State governments may continue to focus on creating a congenial ecosystem for the private sector to thrive.
    - States also need to encourage and facilitate higher inter-state trade and businesses to realise the full benefit of spillover effects of State capex across the country.

2.7. Changes to the Insolvency and Bankruptcy Code (IBC)

Why In News?

- Recently, the Ministry of Corporate Affairs MCA proposed a broad range of **changes to the Insolvency and Bankruptcy Code (IBC)**.

Key Proposed Changes

- **Empowering National Company Law Tribunal:**
  - The ministry has proposed to empower the National Company Law Tribunal (NCLT) to slap hefty fines on those that contravene IBC rules.
  - NCLT's discretion has been increased in the new measures, so focus will be on strengthening NCLT for effective implementation.
- **Fast-tracking the Process:**
  - It has also explicitly clarified that the adjudicating authority must admit an insolvency case if the default is established and need not get into other specifics like the reason for the default, etc, which was delaying the admission of applications.
- **Electronic Platform Minimal Human Interface:**
  - The ministry has suggested developing a state-of-the-art electronic platform that can handle several processes under the Code with minimum human interface.
  - This e-platform may provide for a case management system, automated processes to file applications with the Adjudicating Authority (AA), delivery of notices, enabling interaction of IPs (Insolvency Professionals) with stakeholders, storage of records of CDs (Corporate Debtors) undergoing the process, and incentivising participation of other market players in the IBC ecosystem.
- **Recasting Liquidation Process:**
  - The liquidation process is also sought to be made more open, flexible and equitable to provide comfort to the creditors
- **Redesigning the Fast-Track Corporate Insolvency Resolution Process (FIRP):**
  - The ministry has also proposed redesigning the Fast-Track Corporate Insolvency Resolution Process (FIRP) to allow financial creditors to drive the insolvency resolution process for a CD outside of the judicial process while retaining some involvement of the Adjudicating Authority (AA) to improve the legal certainty of the final outcome.
  - Further, the resolution plan approved through this procedure will have the same sanctity as a regular plan approved during the CIRP (Corporate Insolvency Resolution Process).
- **Special framework for real estate:**
  - The ministry has pitched for a special framework for real estate to limit bankruptcy proceedings to only insolvent projects.
- **Transfer of the Ownership:**
  - Another proposal is to enable a resolution professional to transfer the ownership and possession of a plot, apartment or building to the allottees with the consent of the CoC (Committee of Creditors).
- **Multiple Resolution Plans:**
  - It will allow multiple resolution plans for a single stressed firm (in all sectors).
  - The ministry proposed a change in the mechanism to distribute resolution proceeds.
- **New Waterfall Mechanism:**
  - The MCA has proposed a new waterfall mechanism under which creditors will receive proceeds up to the stressed firm's liquidation value in the order of priority already stipulated (secured financial creditors gets precedence over usually unsecured operational creditors).
  - But any surplus over such liquidation value will be proportionately distributed among all creditors in the ratio of their unsatisfied claims.
- **Extension of Insolvency Framework:**
  - It extended the so-called prepackaged insolvency framework–meant for only MSMEs–to larger entities.

Significance of Changes

- The changes will **streamline** various processes and procedures by the **introduction of**

technology and bringing out clarity in relevant clauses to **ensure smoother implementation.**
- It will help **cut delays** in the resolution process.
- It will **prevent erosion** of stressed asset value, somewhat discipline errant stakeholders.
- The recommendations on **prepack and out-of-court resolution** (fast track resolution) with optional moratorium and NCLT sanction will take India **closer to overseas prepack regimes**.

Conclusion

- Based on the past hurdles faced in various provisions and clauses, the **ground level issues** have been identified and proposed to be **rectified step by step**.
- Such recommendations, once implemented properly, would result in **effective resolution of insolvency.**
- However, insolvency regulator Insolvency and Bankruptcy Board of India (IBBI) should be conscious that these recommendations **should not pave way for further litigations**, which will stall the entire process of resolution.

2.8. Polycrisis

Why In News?

- The **World Economic Forum** in its **'Global Risks Report 2023'** warned that the world could see a polycrisis emerging from the **Russia-Ukraine war.**

What is Polycrisis?

- The term polycrisis was **first used in the 1990s by French** theorist of complexity **Edgar Morin.**
- When multiple crises in **multiple global systems become causally entangled** in ways that significantly **degrade humanity's prospects**. These interacting crises produce harms greater than the sum of those the crises would produce in isolation, were their host systems **not so deeply interconnected.**
- The **'polycrisis'** was first used by former **European Commission president Jean-Claude Juncker** to describe Europe's combustible situation in 2016 which combined indebtedness with Brexit, climate change and a refugee crisis.

World Economic Forum on Polycrisis

- The report has mentioned that the world is facing a set of risks that feel both wholly new and eerily familiar.
- There are older and familiar risks which are getting entangled with the new and emerging risks which collectively can lead to a polycrisis.
- **Older risks:** These include inflation, cost-of-living crisis, trade wars, capital outflows from emerging markets, widespread social unrest, geopolitical confrontation and the spectre of nuclear warfare.
- **New developments:** These include unsustainable levels of debt, a new era of low growth, low global investment and de-globalisation, a decline in human development, and the growing pressure of climate change.

The report categorises these global risks into short term and the long term risks.

- **Short term risks:** These include the rising cost of living, slow economic growth, and tight global food and energy supplies.
- **Long term risks:** These are failure to mitigate climate change, failure to adapt to climate change, extreme weather events, and the threat of biodiversity collapse.
- The report further goes on to state that these risks may converge into a polycrisis by the end of the decade.

Reasons for these Risks

- **Recent Events:** The war in Ukraine sent energy and food prices soaring. The resulting inflationary pressures ignited a global cost-of-living crisis which has led to social unrest.
    - Reverberating impacts of the COVID-19 pandemic to global wars and conflict, from high inflation and sluggish economic growth to increasingly extreme climate events, the world is facing a remarkably diverse range of crises all at the same time.
    - On top of all that, carbon emissions continued to rise as economies reopened after the pandemic.
- **Persistent events:** Demand for food, water and energy are rising as a result of population growth and socioeconomic advancement.

  - The expansion of renewable energy systems is creating an unprecedented demand for rare minerals and metals.
  - The gap between demand and supply of these resources could have catastrophic consequences, including biodiversity loss, ecosystem collapse, trade wars and armed conflict between nations.
- **The report describes four potential futures** centred around food, water and metals and mineral shortages, all of which could spark a humanitarian as well as an ecological crisis – from water wars and famines to continued overexploitation of ecological resources and a slowdown in climate mitigation and adaptation.

Recommendations as per the Report

- Given uncertain relationships between global risks, similar foresight exercises can help anticipate potential connections, directing preparedness measures towards minimizing the scale and scope of polycrises before they arise.
- In such a situation, many governments have refocused their priorities towards short-term risks such as countering food shortages or energy shortfalls at the cost of ignoring climate change and global development when they are most needed.
- It asks world leaders to address the issue of erosion of trust. "Addressing the erosion of trust in multilateral processes will enhance our collective ability to prevent and respond to emerging cross-border crises and strengthen the guardrails we have in place to address well-established risks,".
- It further calls on leaders to act collectively, decisively and with a long-term lens to shape a pathway to a more positive, inclusive and stable world.

2.9. Sovereign Green Bonds (SgrBs)

Why In News?

- For the first-time, the Reserve Bank of India (RBI) will issue **Sovereign Green Bonds (SgrBs)** worth Rs 16,000 crore in two tranches of Rs 8,000 crore each in the current financial year.

About

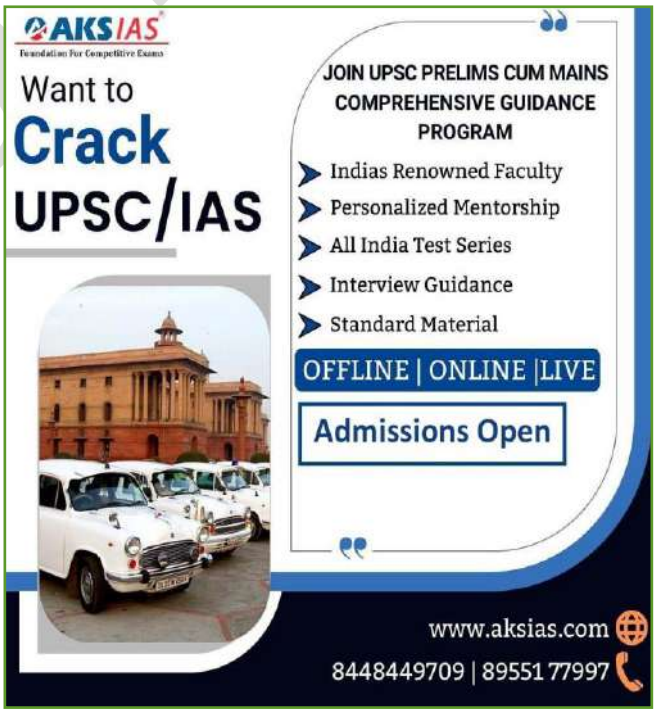
- RBI will issue 5-year and 10-year green bonds of Rs 4,000 crore each on January 25 and February 9.
- The framework for the sovereign green bond was issued by the government in November 2022

What are Green Bonds?

- Green bonds are bonds issued by any **sovereign entity or corporates whose proceeds are utilised for funding environmentally sustainable projects** such as renewable energy, clean transportation, energy efficiency, sustainable water and waste management etc.
- The only difference between **Green Bonds and other ordinary government-issued** bonds is that the funds raised from investors are only used to support initiatives that have a good influence on the environment.

Significance

- Green Bonds have emerged as an important financial instrument to **deal with the threats of climate change.**
- They offer investors a platform to **engage in good practices** while achieving at least similar, if not better, returns on their investment.



3. International Relations

3.1. India And The New Global Order

Why in the News?

- The Voice of the Global South summit that Delhi convened last week did not produce any spectacular outcomes it was not supposed to.
- The forum, however, marks an important effort by India to make global governance work for developing nations, whose concerns tend to get minimal attention in international forums.

Voice of the Global South Summit:

- The Voice of the Global South Summit, a **unique endeavour started by the Indian government** after it assumed the G20 presidency, was **recently held in India.**
- The summit's goal was to **launch a brand new and enthusiastic approach to realpolitik,** while also **providing a coordinated strategy for emerging economies.**
- The forum is also about **India reconnecting with a global group of nations** that had fallen off the Indian foreign policy radar since the end of the Cold War.
- Leaders from Bangladesh, Cambodia, Guyana, Mozambique, Mongolia, Papua New Guinea, Senegal, Thailand, Uzbekistan, and Vietnam attended the conference.

Relevance of the Summit:

- The virtual forum has provided valuable inputs from the Global South that could facilitate India's ambition to steer the G20 summit in Delhi to success later this year.
- India emphasised that **developing countries should work together to restructure global political and financial governance** so that **they are not excluded from advancement, and can eliminate disparities.**

The North-South divide

- The **system of economic, political, and social differences** between the developed nations of the Northern Hemisphere and the parts of the developing world of the Southern Hemisphere is known as the global North-South divide.
- The global North-South divide has serious consequences for global development and poverty alleviation. **The bulk of the world's poor live in the South, and reducing this disparity is critical to meeting the UN's Sustainable Development Goals.**
- To eliminate poverty and encourage development in the South, the global economic system must evolve toward more justice and fairness. This may be accomplished through a variety of measures, including increasing aid and investment in the South.

Need for a Global South Leadership: Why Now?

- The goal of the present summit, which has the theme **"Unity of Voice, Unity of Purpose,**" is to bring together nations from the global south to discuss a wide variety of topics from their points of view and objectives. The summit's timing reveals a lot about the purpose of the alliance.
- The need for a new **international order that is more inclusive, representational, and fundamentally more stable** has been supported by various events like
- Growing military tensions among the great powers between Russia and China on one side and the US, Europe and Japan on the other.
    - Breakdown of the world trading rules and the weaponisation of global finance.
    - COVID-19 epidemic
    - Increasing Chinese expectations
    - The Russia-Ukraine conflict
    - The Taliban takeover of Afghanistan, and various other events.

- The Global South Summit aims to give voice to that endeavour and help in making the transformations manifest.

India Reclaiming Leadership of Developing World:

- Over the last three decades, Indian diplomacy's focus has been on reordering its great power relations, bringing stability to the neighbourhood and developing regional institutions in the extended neighbourhood.
- The meeting attended by 120 nations underlines the **willingness across the Global South to support Indian leadership in addressing the global challenges** that have had a massive impact on the condition of many developing countries.
- While the future of this particular forum is not clear, the idea that India must reclaim the leadership of the developing world appears to have gained much currency during the forum.
- India thus, **plans to reorient the G20, take charge of the Global South and become the voice of developing economies across the world.**

Challenges in Representing Collective Interests of Global South:

- Representing the presumed collective interests of the Global South has become harder today given the **deep economic differentiation and sharp political divisions** among the developing nations.
- India's own experience with the Non-Aligned Movement and the Group-77 developing nations points to the **real difficulty of uniting the Global South in pursuit** of common goals.
- India's own **enduring developmental challenges,** despite its impressive aggregate GDP and growing economic, industrial, and technological capabilities

Way Ahead:

- Given the size of its population, transforming India towards greater prosperity and sustainable development would automatically improve the condition of the Global South.
- Yet, a large nation and rising power like India can't simply be self-centred nor should it abandon its long-standing equities in the Global South.
- India certainly needs to **contribute in more significant ways in modernisation and democratization of the global order.**
- It needs a **careful balance between nationalism and internationalism,** a practical sense of what is feasible in today's world, and a **well-defined crafted hierarchy of Indian priorities on the global stage.**

3.2. Indo-French Strategic Dialogue

Why in News?

- Recently, the National Security Advisor (NSA) of India held the **36th round of** the **Indo-French Strategic Dialogue** with his French counterpart.

Key Outcomes of the 36th round of the Indo-French Strategic Dialogue

- Both participants agreed to intensify efforts **"towards strategic autonomy"**.
- The two sides held discussions on a variety of issues:

- The current global security situation in the context of the conflict in Ukraine
- Regional security in the context of Afghanistan
- Counter-terrorism
- Cyber security
- Defence cooperation in the Indo-Pacific
- Other issues of mutual concern.

- PM Modi and Diplomatic Adviser to the President of France also discussed areas like "energy and culture".
- The discussions reflected closeness in views of both India and France on all major international issues.
- The France-India strategic partnership is key to tackling the pressing challenges of 2023.
- France's "full support" for India's G-20 Presidency.

India- France Relations

- **Strategic Relationship:**
  - **Genesis**: After India's 1998 nuclear tests, France was the first country to initiate a Strategic Dialogue with India. By displaying a greater understanding of India's security compulsions as compared to other countries, France refused to impose bilateral sanctions on India.
  - **India-France strategic partnership** is based on "exceptional mutual trust, shared democratic values and a joint vision for a multipolar, rules-based world order"

- **Economic Relationship**:
  - **Bilateral trade with France** has witnessed a steady rise in the last decade reaching USD 10.75 billion in 2020.
  - **Investment:** France ranks 9th in foreign investment in India.The two sides have recognised the importance of fast tracking the discussions on an **India-EU trade and investment agreement.**
  - **Companies:** More than 150 Indian companies are operational in France & more than 1000 French companies are present in India with turnover of $20 billion

- **Defense Relationship:**
  - India-France conducts a defense dialogue at the ministerial level.
  - **Joint defense exercises** between the Air forces (Garuda series) and the Armies (Shakti), Navies (Varuna) are conducted regularly.
  - **P-75 Scorpene Dea 2005**: An agreement for building six Scorpène submarines under technology transfer at Mazagaon Docks Ltd. in India with French help.
  - **Technology sharing and acquisitions of short-range missiles** and radar equipment were concluded.
  - **Rafale deal:** The government-to-government agreement for 36 French Rafale multi-role combat aircrafts has taken place.
  - **Proposals in line:**

    - India is close to taking a decision on a fighter jet to fly off the Navy's aircraft carriers (Boeing's F-18 Super Hornet or Dassault Aviation's Rafael-M)
    - India is also mulling over procuring 26 jets (probably Rafale, as per official sources).
    - Safran of France is competing with other global engine manufacturers to co-develop a fighter jet engine with the DRDO.

- **Energy Sector Cooperation:**
  - **Nuclear Reactors**: An agreement was signed a decade ago for building six European Pressurized (Nuclear) Reactors (EPR) with a total capacity of 9.6 GW.
  - **The International Solar Alliance** was launched jointly by India and France.

- **Science & Technology:**

  - **Gaganyan Mission:** Both the countries have signed a cooperation agreement for the Gaganyan Mission of India.
  - The French space agency will support India's scientific experiments by providing French equipment and medical instruments for Indian astronauts.

  - **Joint Satellite Mission TRISHNA:** TRISHNA is meant for ecosystem monitoring and water use monitoring and it is the 3rd joint mission of ISRO and CNES.

- **Maritime cooperation:**

- India and France share concern about China's growing presence in the Indian Ocean Region. France showed more willingness to cooperate with India after the launch of AUKUS.
- **French overseas territories in the Indian and the Pacific Oceans** provide it with the second-largest exclusive economic zone globally. It has long maintained bases in Reunion Islands and Djibouti and established one in Abu Dhabi in 2009.

- **Strengthening cooperation with France** (the western Indian Ocean Region) makes eminent strategic sense even as India develops its presence in Oman (Duqm) and Seychelles (Assumption Island).
- **Indo-French Naval Cooperation**: Naval cooperation in the Gulf area where France has a base (in Abu Dhabi) for securing sea lanes of communication, and combating piracy, transnational crime & terrorism by fostering capabilities in the Indian and Pacific oceans.

Significance of India-France Relationship

- **Support to India's vision of Atmanirbhar Bharat** by France along with reiteration of support for defense industrialisation, joint research and cutting edge technology development in India.
- **Post-Brexit**, Indian companies can look at France as an entry point to Europe.
- **No Money for Terror**-an international conference on fighting terrorist financing is ardently advocated by both India and France at UN Platform.
- **Shared Vision of multipolar world order.**
- **India's claim to UNSC Permanent membership** has been continuously backed by France.
- India's membership to the **Multilateral Export Control Regimes** like NSG, MTCR has been always supported by France.
- **Reciprocal Logistics Support Agreement** to facilitate fuel replenishment and maintenance of each other's warships, military aircrafts and troops during port calls and disaster relief.

3.3. EAM Visits to Maldives

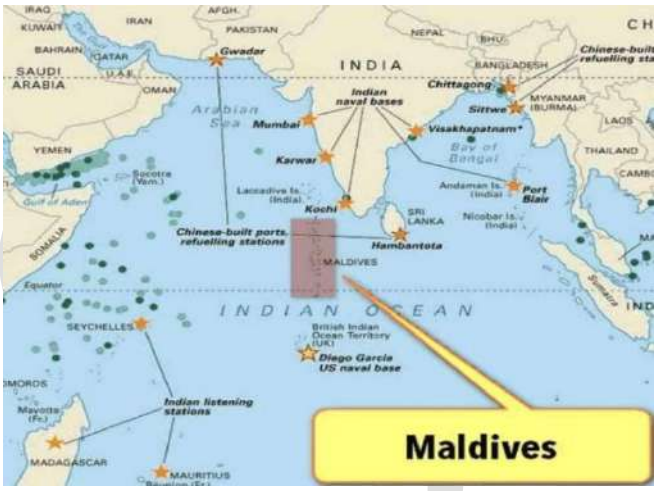
Why In News?

- Recently the Indian Foreign minister visited Maldives in a bid to strengthen ties.

About

- In recent years, the relationship has been strained, with the Maldives seeking closer ties with China and India's concerns over Chinese influence in the region.
- In this regard, India and Maldives have signed several **pacts including development projects** as External Affairs minister **S Jaishankar** visited the Maldives to hold talks with the top leadership in the country.

Major highlights



- Both countries have signed a pact to grant **assistance of 100 million Rufiyaa** [currency of Maldives] for the **High Impact Community Development Project (HICDP) scheme.**
- Under this funding, several socio-economic development projects to be implemented throughout the country to improve basic necessities.
- Development of a **sports complex in Gahdhoo**, and academic collaboration between Maldives National University **and Cochin University** of Science and Technology.
- India to **hand over two sea ambulances** to the Ministry of Defence of Maldives for emergency needs and humanitarian crisis.
- India will send 10,000 school books to be distributed in 260 schools in the Maldives.

India & Maldives

- India and the Maldives have a **long-standing relationship,** with **historical and cultural ties** dating back centuries.
- India was among the **first to recognize Maldives** after its **independence in 1965** and to establish diplomatic relations with the country.
- India has traditionally been **one of the Maldives' closest allies** and partners.

- India has provided **economic, technical, and military assistance** to the Maldives.
- India has **extended a $1.4 billion financial assistance package** to Maldives for socio-economic development.
- India has also **agreed to provide a $800 million line of credit to Maldives** for infrastructure development.
- India and Maldives have been c**ooperating in areas of defense and security,** with regular exchange of high-level visits and joint exercises e.g., **Exercise EKUVERIN**
- India has also been a **major tourism market for Maldives** with a current **share of nearly 14.4 percent** of its tourism market share**.**

Way ahead

- Although India should try to assert its regional leadership in the Indian Ocean region, but not at the cost of Maldives aligning itself with the interests of China.
- Considering the rise in India's economy and diplomatic area of influence, there is a need to revisit India's role in regional politics.

3.4. Reshuffling in China's Foreign Policy

Why In News?

- In recent weeks, China launched a **personnel reshuffle on the foreign policy front**.

Key Points

- **Change in China's Foreign Administration:**
  - China appointed the former Chinese ambassador to the US as the **new foreign minister** and a former foreign ministry spokesperson was transferred to the department of boundary and ocean affairs.
  - The new foreign minister is seen in some foreign policy circles as someone who is a **wolf warrior** but a much **more tactful one.**
- **Expected Implications:**
  - Some political analysts view these changes as possible signs that China may be **pivoting from the hardline "wolf-warrior diplomacy"** that has characterized China's foreign policy over the last few years.
  - China is **buying time to stabilize** the situation at home while **strengthening itself** for the ongoing rivalry with the United States and its allies.
  - Through this appointment, China is trying to **rebalance the earlier era** of wolf warrior diplomacy.
  - Some experts say the personnel reshuffling **doesn't necessarily change the trajectory** of China's diplomatic approach.
- **Predictability for Western Countries:**
  - The new appointment will provide greater stability and predictability in China's diplomacy going forward
  - For western countries, that will probably be a good thing, since China's wolf warrior diplomats have been rather unpredictable over the last few years.

Challenges

- **China- US Rivalry:**
  - Despite the optimism expressed, tensions between China and the US remain high.
- **Isolation of China:**
  - Over the last three years, China has largely isolated itself from the rest of the world, as its top officials, including the President, were consistently absent from major international events.
- **Enhanced Military Activities:**
  - Since the former US House Speaker's visit to Taiwan last year, China has increased its military activities around the island.
  - The US, meanwhile, is also seeking to strengthen security and military **ties** with countries like Japan and the Philippines.

China's Focus in Future

- **Strengthening Economy:**

- China needs to strengthen its economy and break out from the relative isolation the zero-COVID policies have put it in.

- **Focus on Western Europe:**
  - As China tries to recalibrate its foreign policy approach under Xi's third term, experts think the personnel reshuffling seems to suggest that western European countries, Australia and Canada are going to be the major focus of China's foreign policy efforts in the coming years.
  - China will make Western Europe and by extension, some western countries the major focus of their diplomatic engagement in the coming years.
- **No Change in Stance:**
  - Even though China and the US are trying to restart bilateral dialogue, China and the US are not going to make any fundamental changes to their positions on key foreign policy issues.
  - On the issues of the international system, the rules-based order and the position of Taiwan, there is not much of a shift on either side.

Current Chinese Discourse on India

- **Not Underestimating India:**
  - Chinese observers believe that China should not underestimate an otherwise adversary, that is India's potential for accelerated development in the coming years and prepare for a situation where it emerges as the world's second or third-largest economy, challenging China's primacy in Asia and threatening its national security.
- **Development Competition:**
  - It is interesting to note that at a time when all eyes in India are fixed on the volatile border, the Chinese side seems to be of the opinion that the real conflict between China and India is not at the LAC but in the development competition, particularly in India's ambition to catch up with China.
- **Challenging India's Manufacturing Industry:**
  - China is acting on the risks and challenges arising from the rise of India's manufacturing industry and in turn taking effective measures to safeguard China's critical economic and geopolitical interests.
- **United States (US) Disturbing China-India Game:**
  - China does not like India adding the US power to the China-India game" to neutralize China's existing economic and military superiority vis-à-vis India.

Way Ahead

- The China-US relations **shouldn't be a zero-sum game** and the world is wide enough for China and the United States to both develop and prosper.
- At the same time, it would be ideal if major European countries would keep or even **deepen their dependencies on China** and thus make them less likely to stand by the US in the time of potential conflict.

3.5. India and the New Eurasia

Why In News?

- Japan's Prime Minister Fumio Kishida is looking beyond his country's alliance with the U.S. to deter China, bolstering security ties with democracies from Australia to Europe.

Russia's Approach

- Russia saw itself as both a **European and Asian power** but had trouble becoming a part of either.
  - it developed "**Eurasia" and "Greater Eurasia" as new geopolitical constructs.**
  - The occupation of Crimea in 2014 and the invasion of Ukraine are a product of what Putin sees as his historic mission of reuniting the "Russkiy Mir" or the Russian world.

        - He was determined to pursue it despite the massive costs associated with the strategy.

Various Developments Linked to New Eurasia

- **Japan**: It is determined to build strong military partnerships with Europe.
    - Japan's Prime Minister Fumio Kishida's message was simple: The security of Europe and the Indo-Pacific is indivisible.
        - Japan will also build a large missile arsenal to deter China (and North Korea, whose missile capabilities have grown).
- **US:** At the instance of the US, the NATO summit in Madrid in June invited key Asian partners to participate.
    - The prime ministers of Australia, Japan and New Zealand as well as the president of South Korea joined the summit.
        - This is the first time that Asian leaders joined NATO deliberations.
- NATO's engagement with Indo-Pacific issues and East Asia's engagement with European security will continue to be new features of Eurasian geopolitics.
    - In its National Security Strategy released in 2022, the Biden Administration articulated the desire to see its allies and partners in Europe and Asia collaborate more with each other.
        - It is eager to encourage its partners, including India, to build their capabilities and strengthen regional balances of power in Europe and Asia.
- **South Korea** is also joining the party by raising its profile in Europe.
    - It is selling major weapons platforms in Poland.
- **Australia**, which has joined the US and UK in the AUKUS arrangement, is equally eager to bring Europe into the Indo-Pacific.
- **China -Russia Cooperation:** Before Japan and South Korea turned to Europe, it was china and Russia who altered the geopolitical dynamic in Eurasia.
    - Days before he ordered his armies into Ukraine, Putin travelled to Beijing in February 2022 to sign an agreement declaring an alliance "without limits" and no "forbidden areas".
        - Together, Putin and Xi unveiled a Eurasian alliance that they might have hoped would deliver the long-awaited coup de grace to the global hegemony of the West.

Implications for India

- For India, the rise of Eurasia is making it harder to ride on two boats at the same time.
- Until now, India could easily hunt with the maritime coalition — the Quad — in the Indo-Pacific and run at the same time with the continental coalitions led by Russia and China.
    - This was possible so long as the maritime and continental powers were not at each other's throats.
- But the **conflict between the US, Europe, and Japan** on the one hand and China and Russia on the other is now acute and shows no signs of immediate amelioration.
- **On the downside**, then, India's mounting security challenges from China on the Himalayan frontier and the tightening embrace between Moscow and Beijing will mean the shadow over India's continental strategy will become darker in the days ahead.
- **On the upside,** the possibilities for strengthening India's strategic capabilities in partnership with the US and Europe as well as Japan, South Korea and Australia have never been stronger.

Conclusion

- The new dynamic presents challenges as well as opportunities for India and It is up to Delhi now to seize the emerging possibilities.

- India needs to maintain a balance between the USA and China and to a greater extent between the Indo-Pacific region and Eurasia.
- India can act as a bridge between the Indo Pacific region and Eurasia power block. For this India needs to maintain linkage with China and especially with Russia.

3.6. Non-NATO Ally

Why In News?

- A US Congressman has recently moved a Bill in the House of Representatives to revoke Pakistan's designation as a Major Non-NATO Ally.

Details of the Bill

- The Bill says that **Pakistan should be demoted** from the **major non-NATO ally status** till the US President can submit a **certification** that it has met **certain conditions.**
- **The conditions listed are:**
    - Pakistan continues to **conduct military operations** that are contributing to significantly **disrupting the safe haven and freedom of movement** of the **Haqqani Network in Pakistan**;
    - Pakistan has taken steps to **demonstrate its commitment to prevent** the Haqqani Network from **using any Pakistani territory as a safe haven;**
    - The Government of Pakistan **actively coordinates with the Government of Afghanistan** to **restrict the movement of militants,** such as the Haqqani Network, along the **Afghanistan-Pakistan border**; and
    - Pakistan has shown progress in **arresting and prosecuting** Haqqani Network senior **leaders and mid-level operatives**.

About the Haqqani network:

- **About:**
    - The Haqqani network is a terrorist group whose **leadership is based in Pakistan**, though it **operates majorly in Afghanistan**.
- **Origin:**
    - The network came into being during the **Soviet occupation of Afghanistan in the 1980**s and was **armed and funded by the US and Pakistan** to fight the Russians.
- **Issues of US against Haqqani network:**
    - After 9/11, Haqqani turned against the US.
    - US officials have long considered the Haqqani leadership to be among the **closest proxies for Pakistan's ISI**.

Major Non-NATO Ally status

- Designation as Major Non-NATO Ally status (MNNA) **entitles a country to some military and economic privileges**.
- According to the US Department of State website, Major Non-NATO Ally (MNNA) status is a **designation under US law** that **provides foreign partners** with certain benefits in the **areas of defense trade and security cooperation.**
- While MNNA status provides military and economic privileges, it **does not entail any security commitments** to the designated country.

Way ahead

- Before it can turn into a law with a signature from the President, the **Bill has to be passed by the House and the Senate**.

3.7. Asian Pacific Postal Union (APPU)

Why in News?

- India takes over leadership of the **Asian Pacific Postal Union.**

Key Facts

- India will take over the leadership of the **Asian Pacific Postal Union from January 2023.**

- Dr. Vinaya Prakash Singh will assume the **charge of Secretary General** of the Union during India's four year tenure there.

Asian Pacific Postal Union (APPU)

- Asian Pacific Postal Union (APPU) is an **intergovernmental organisation** comprising **32 member countries in the Asia-Pacific region**.
- It is **headquartered in Bangkok, Thailand.**
- It is the **only restricted union of the Universal Postal Union (UPU) in the region**, which is a specialised agency of the United Nations.
- It is the **Secretary General who leads the activities of the Union**. It is made up of three bodies namely, Congress, Executive Council and APPU Bureau.
- Asian Pacific Postal Union (APPU) aims to **extend, facilitate and improve postal relations** between the member countries and promote cooperation in the field of postal services.

3.8. India-Egypt Relations: Latest Developments

Why In News?

- India has invited Egypt as a special guest for the G-20 summit which shows our age-old relationship.
    - The President of Egypt, Abdel Fattah el-Sisi, was the chief guest at the 74th Republic Day parade.

India-Egypt relations

- **Historical:** 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 the Egyptian revolutionary Saad Zaghloul** shared a common goal on independence from British colonial rule, and the two nations made a joint announcement of the **establishment of diplomatic** relations at the ambassadorial level three days after India became free.
    - The two countries are celebrating the 75th anniversary of establishing diplomatic ties.
- A **Friendship Treaty** was signed between Prime Minister Jawaharlal Nehru and President Gamal Abdel Nasser in 1955.
    - The **Non-Aligned Movement** was a natural concomitant of this relationship.

- **Relationship since 2014:** The year 2015 has seen more intense political cooperation between the two countries with regular interactions at the leadership and Ministerial levels.
    - PM Shri Narendra Modi met President Sisi on the sidelines of UNGA, New York in September 2015.
    - Their talks focussed on counter-terrorism, deepening economic engagement, and regional issues.
- The ties have been on an upswing in the recent past and both delegations supported reform of the UN Security Council, where Egypt was a non-permanent member during 2016-17 and India had a similar stint during 2021-22.

Latest Developments

- India and Egypt signed five MoUs covering culture, cooperation on youth matters, cyber security, information and technology (IT) and public broadcasting.
- They reaffirmed their commitment to multilateralism, the principles of the **United Nations Charter, international law**, the founding values of the **Non-Aligned Movement,** and **respect** for the **sovereignty** and **territorial integrity of all states**.
- They agreed to "initiate new engagements to intensify **military-to-military engagements**" and **planned more joint exercise**s between the armed forces of the two countries.
- They agreed to **fight terrorism in all forms**, "including cross-border terrorism" and intensify consultation between their respective National Security Councils.

- They have expressed exploring the possibility of land allocation to Indian Industries at the Suez Canal Economic Zone.
    - The Suez Canal connects the Mediterranean Sea with the Red Sea.
    - It is one of the world's biggest trade routes. As of now, the trade route is essential to keep alive around 12 percent of the global trade that passes through it each day.

Significance

- Egypt, the most populous country in West Asia, occupies a crucial geo-strategic location — 12% of global trade passes through the Suez Canal — and is a key player in the region.
    - It is a **major market for India** and **can act as a gateway to both Europe and Africa.**
    - It also has bilateral trade pacts with important West Asian and African nations.
- Egypt's relationship with India was also helped by its display of pragmatism especially in the backdrop of the Nupur Sharma controversy of 2022 when Cairo maintained silence while certain Gulf countries were vocal in India's criticism.
- The joint cooperation will help eliminate violence because the spread of violence, terrorism, and extremist ideology represents a serious threat not only to the two countries but also to all countries around the world.

Concerns

- India and Egypt are "worried about the spread of terrorism happening around the world" and they are "unanimous" that terrorism is the "most serious security threat" to humanity.
- **Misuse of cyberspace to spread** extremist ideologies and radicalisation is a growing menace.
- Egypt's economy has been in shambles over the past few years. It was battered by the collapse of tourism during the pandemic, and the Russia-Ukraine war has impacted its supply of food — almost 80% of Egypt's grain came from these two countries — and hit its foreign exchange reserves.
- Despite restrictions on the export of wheat, India had last year allowed shipments of 61,500 metric tonnes to Egypt.
    - But the country needs more.

- **China's bilateral trade with Egypt** is currently at $15 billion, double that of India's $7.26 billion in 2021-22.
    - Sisi has been wooing Chinese investments, and has travelled to China as many as seven times in the last eight years.

Conclusion and Way Forward

- Concerted action is necessary to end cross-border terrorism" and they will have to together alert the international community.
- More than six decades ago, the two countries founded the NAM. They now have an opportunity to forge a new path ahead, not just for their strategic and economic interests, but as the voice of the Global South.

3.9. China's Dam Diplomacy

Why in News?

- China is constructing a new dam on the Mabja Zangbo river in Tibet, close to the tri-junction which is a matter of concern for both India and Nepal.
- The new dam is located around 16 km north of the tri-junction and is opposite the Kalapani area of Uttarakhand.
- The Mabja Zangbo river originates in Nagari county of Tibet and flows through Nepal into the Ghaghara River before joining the Ganga in India.

About

- China's upstream actions like dams (on Brahmaputra, Indus, tributaries of the Ganga), diversion of water, hydropolitics, and power asymmetry poses a security threat to India and water scarcity downstream.

- There is no legally binding international treaty on water sharing between India and China.
- Under CPEC, China plans to build two mega-dams on the Indus, named Bunji Dam and Bhasha Dam.
- In 2021, China announced that it would construct a massive dam on the lower reaches of Yarlung Zangbo (also known as Brahmaputra) to generate up to 70 GW of power, three times that of the country's Three Gorges dam, which is the world's largest hydropower plant in terms of installed capacity.

Impact of Building Dams on India

- Used as a tool in Hydropolitics: China is a critical player in the hydro-politics of the region. Its hydrological position is one of complete upper riparian supremacy giving it enormous latitude in shaping larger political equations with its riparian neighbours.
- India is an upper, middle, and lower riparian. India's middle riparian position increases its dependency (water insecurity) on the headwaters of the rivers such as the Indus, Sutlej, and Brahmaputra which originate in the Tibetan plateau.
- China wants to maintain continuous pressure on India be it all along the Himalayan range or the Indian Ocean region through building dams alongside border areas.
- India and its Neighbourhood: China was one of the three countries that did not approve of the 1997 UN Convention on the Law of the Non-Navigational Uses of International Waterways.
- China has built eleven mega-dams on the Mekong River, causing water levels there to fluctuate widely without prior notice in Myanmar, Laos, Thailand, Cambodia, and Vietnam.
- Impact on earlier signed Treaty: Treaties have been signed to provide definite amount of water to lower riparian states like the 1960 Indus Water Treaty with Pakistan and the 1996 Ganga Treaty with Bangladesh.
- Military threat to India from Border Infrastructure: China's rapid build-up of infrastructure along the Line of Actual Control (LAC) with India is alarming and adds to overall destabilising and corrosive behaviour along the entire India-China border.
- The satellite images of the dam on Mabja Zangbo river shows the formation of an embankment type dam with a reservoir leading to a possibility of military establishment by China near the tri-junction already witnessed from Yarlung Zangbo dam.
- From the multiple intrusions into Indian territory in eastern Ladakh, China has assiduously built and consolidated its military positions and border infrastructure along LAC as well upgraded its air bases facing India. E.g., China construction of a bridge across Pangong Tso in Khurnak Fort Area.
- Impact on people lives Downstream: China projects alongside Brahmaputra will impact lower riparian states local economy and ecology due to future plans of water diversion and dam projects.
- China's construction of hydroelectricity dams in ecologically and seismically active areas shows reassertion of its aggressive 'supply-side hydraulic' approach of increasing storage capacity by building dams and reservoirs.
- These steps can impact food and water security needs of people living in low riparian regions as well increase disaster risk.
- Water Resources of North-East: Even running of the river hydroelectric dams can reduce water flow downstream, especially during the dry season.
- India is also worried about the release of water during the monsoons, when north-eastern states such as Assam experience floods.
- Several species of flora and fauna are endemic to the North-East part of India and some of them are critically endangered. The ecosystem in the Himalayan region is already on the decline.
- Seismological Impact: The Himalayan region is vulnerable to earthquakes and other seismic activities. The sheer size of the infrastructure projects undertaken there poses a significant threat to the populations living downstream.
- Chins building hydrological projects along geographical fault lines. E.g., Projects on Yarlung Zangbo river are along the collision boundary of Indian plate and Eurasian plate.

- The glaciers have been retreating due to climate change. Deforestation, soil erosion and landslides are some of the other issues.
- Water as a Weapon during Standoff: Being an upstream area, China has a clear advantage in building dams and other infrastructure to store or divert the flow of the river system.
- There is the potential to significantly change the flow rate during times of standoff between the countries.
- During the 2017 Doklam border standoff between India and China, China stopped communication of water flow levels from its dams.

Way Forward

- By terming water resources in Tibet as a 'commons', India can draw international attention. China should be pressurized to reconsider signing of 1996 UN Convention on Non- Navigation Use of Water which requires watercourse states to cooperate on the equitable and reasonable use and management of international watercourses.
- India needs to strengthen agreements with China that require the latter to share hydrological data of the river during monsoon season between May and October to alert downstream areas in the event of floods.
- India to articulate its middle riparian position, first to change the perception in the neighbourhood that India is a 'water hegemon'.
- India to draw China into the South Asian water equation through a multi-lateral basin approach, thereby sensitising China to downstream concerns and upstream responsibilities.
- Water Treaty on lines of Indus and Ganga Treaty need to be devised with China for rivers originating from Tibet region.
- India should initiate a lower riparian coalition, stretching from the Ganga Brahmaputra Meghna basin to the Mekong, in order to draw China into a water dialogue.
- Tibet has an essential influence over Asia, providing sustenance to some of the world's most productive agricultural zones, so it is the collective responsibility of all riparian states to preserve the ecology of this region.

4. Science & Technology

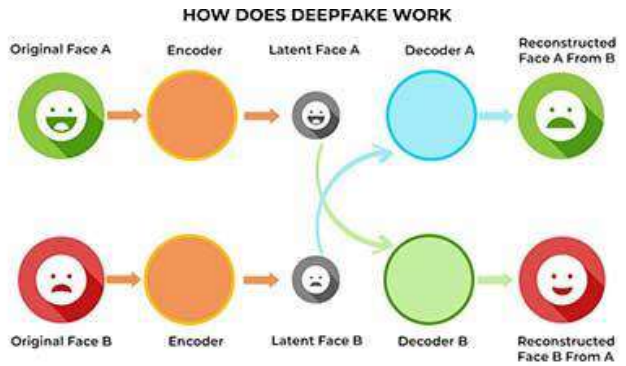
4.1. Take a step to regulate Deepfakes

Why in News?

- The lack of **proper regulations and oversight** may lead to misuse of **Artificial Intelligence (AI)** by individuals, firms and even non-state actors.
- The legal ambiguity, coupled with a lack of accountability and no regulation can be disastrous at times and calls for regulation of Artificial Intelligence (AI) in India, specifically 'Deepfakes' which is an application of AI.

How does Deepfake technology work?

- Deepfake techniques rely on a deep learning technique called **autoencoder,** which is a type of **Artificial Neural Network (ANN)** which contains an encoder and a decoder.
- The input data is first decomposed into an encoded representation then these encoded representations are reconstructed into new images which are close to input images.
- Deepfake software works by combining several autoencoders, one for the original face and one for the new face.



Issues with deepfakes

- **Spread misinformation and propaganda**
  - Since they are **compelling, deepfake videos** can be used to **spread misinformation and propaganda.**
  - They seriously compromise the public's ability to distinguish between **fact and fiction.**
- **Defamation using elicit contents**
  - Deepfakes Can depict someone in a compromising and embarrassing situation.
  - For instance, deepfake pornographic material of celebrities not only amounts to an invasion of privacy, but also to harassment.
- **Financial fraud**
  - Deepfakes have been used for financial fraud, intimidation or blackmailing people in recent times.
  - Scammers recently used **AI-powered software** to deceive the CEO of a U.K. energy company into thinking he was speaking with the CEO of the German parent company over the phone.
  - As a result, the CEO transferred a large **sum of money (€2,20,000)** to what he thought was a supplier.
- **Threats to National Security of nations**
  - **Deepfakes can be used to influence elections at a large scale**
    - Recently, Taiwan's cabinet approved amendments to election laws to punish the sharing of **deepfake videos or images.**
    - Taiwan is becoming increasingly concerned that China is spreading false information to influence **public opinion and manipulate election outcomes,** and this concern has led to these amendments.
    - This could also happen in India's elections too.
  - **Use in Espionage**
    - Deepfakes can also be used to **carry out espionage activities.**
    - Doctored videos can be used to blackmail government and defense officials into divulging state secrets.
    - For instance, in March 2022, **Ukrainian President Volodymyr Zelensky** revealed that a video posted on social media in which he appeared to be instructing Ukrainian soldiers to surrender to Russian forces was actually a deepfake.
  - **Production of hateful and inflammatory material**
    - In India, deepfakes could be used to produce inflammatory material, such as videos purporting to show the armed forces or the police committing 'crimes' in areas with conflict.
    - These deepfakes could be used to **radicalize populations, recruit terrorists, or incite violence.**
- **Misuse by nonstate actors**
  - Deepfakes can be used by non-state actors, such as insurgent groups and terrorist organizations, to show their adversaries as making inflammatory speeches or engaging in provocative actions to stir anti-state sentiments among people.
- **Leading to the 'Liar's Dividend'**
  - Another concern from **deepfakes is the liar's dividend;** an undesirable truth is dismissed as deepfake or fake news.
  - The mere existence of deepfakes gives more credibility to denials. Leaders may **weaponize deepfakes** and use fake news and alternative-facts narrative to dismiss an actual piece of media and truth.

Why is there a need for legislation?

- Currently, very few provisions under the **Indian Penal Code (defamation) and the Information Technology Act, 2000 (punish sexually explicit material)** can be potentially invoked to deal with the malicious use of deepfakes.
    - **Section 500 of the IPC** provides punishment for defamation. **Sections 67 and 67A of the Information Technology Act** punish sexually explicit material in explicit form.
    - **The Representation of the People Act, 1951,** includes provisions prohibiting the creation or distribution of false or misleading information about candidates or political parties during an election period.
    - The Election Commission of India has set rules that require registered political parties and candidates to get pre-approval for all political advertisements on electronic media, including TV and social media sites, to help ensure their accuracy and fairness.
- All of the aforementioned are insufficient to adequately address the various issues that have arisen due to AI algorithms, **like the potential threats posed by deepfake content.**

Possible Solutions to counter menace of deep fakes

- **Media literacy efforts** must be enhanced to cultivate a discerning public. Media literacy for consumers is the most effective tool to combat disinformation and deepfakes.
- We also need meaningful regulations with a collaborative discussion with the **technology industry, civil society, and policymakers** to develop legislative solutions to disincentivizing the creation and distribution of malicious deepfakes.
- Social media platforms are taking cognizance of **the deepfake issue, and almost** all of them have some policy or acceptable terms of use for deepfakes. We also need easy-to-use and accessible technology solutions to detect deepfakes, authenticate media, and amplify authoritative sources.

Way ahead

- **Enact a separate legislation for AI**
    - The Union government should introduce separate legislation regulating the nefarious use of deepfakes and the broader subject of AI.
    - Legislation should not hamper innovation in AI, but it should recognize that **deepfake technology** may be used in the commission of criminal acts and should provide provisions to address the use of deepfakes in these cases.
- **The proposed Digital India Bill can also address this issue.**

Conclusion

- To counter the menace of deepfakes, we all must take the responsibility to be **critical consumers** of media on the Internet, think and pause before we share on social media, and be part of the solution to this **'infodemic'.**

4.2. JUICE (JUpiter ICy moons Explorer) Mission

In News

- The JUICE mission will be **the first time** that the European Space Agency (ESA) has sent a spacecraft beyond the asteroid belt.

JUICE (JUpiter ICy moons Explorer)

- **About:**
    - JUICE is the **first large-class mission** in the ESA Cosmic Vision 2015-2025 programme.
    - The spacecraft will launch on an **Ariane 5 in April 2023** on an **eight-year** journey including gravity assist flybys of Earth and Venus before arriving in the Jupiter system in 2031.
- **Goals:**
    - It will spend at least three years making detailed observations of the giant gaseous planet **Jupiter** and three of its largest moons, **Ganymede, Callisto and Europa**.

- It will understand if the oceans of these icy moons could have ever been suitable habitats for life.

- **Components & Different Experiments:**
  - JANUS - Camera system
  - MAJIS - Moons and Jupiter Imaging Spectrometer
  - UVS - UV imaging Spectrograph
  - SWI - Sub-millimeter Wave Instrument
  - GALA - GAnymede Laser Altimeter
  - RIME - Radar for Icy Moons Exploration
  - J-MAG - A magnetometer instrument for JUICE
  - PRIDE - Planetary Radio Interferometer & Doppler Experiment

4.3. Etalin hydroelectric project

Why In News?

- The Etalin hydroelectric project in Arunachal Pradesh has been rejected in its present form by the **Forest Advisory Committee** in the face of overwhelming opposition to its construction.

About

- The Forest Advisory Committee has asked the Arunachal Pradesh government to file a fresh proposal for forest diversion and the construction of the **Etalin hydroelectric project (EHEP)** due to non-compliance to conditions stipulated by the FAC and the overwhelming pushback against the project in the region.

the Etalin project

- The project was being executed through the Etalin Hydro Electric Power Company Limited, a JV company of Jindal Power Limited and Hydro Power Development Corporation of Arunachal Pradesh Limited (A Govt of Arunachal Pradesh Undertaking).
- The installed capacity of the project is 3097 MW as per the detailed project report.
- It is envisaged as a run-of-the-river scheme on rivers Dri and Tangon in the Dibang Valley District of Arunachal Pradesh.
- **Controversy**: It ran into several controversies since its inception in 2008 over concerns of ecological damage, forest invasion, and tribal displacement.

4.4. Giant Metrewave Radio Telescope (GMRT)

Why In News?

- Recently, astronomers have **used data** from the **Giant Metrewave Radio Telescope (GMRT)** in Pune to **detect a radio signal originating from atomic hydrogen** in an extremely distant galaxy.
  - **Atomic hydrogen** is the basic fuel required for **star formation in a galaxy**.

About

- This is the **first confirmed detection** of strong **lensing of 21 cm emission from a galaxy.**
- The astronomical distance over which such a signal has been picked up is the **largest so far.**
- The research was **funded** by **McGill** University in Canada and the Indian Institute of Science (**IISc**).

Giant Metrewave Radio Telescope (GMRT)

- **About:**
  - It is an array of **thirty** fully steerable parabolic radio telescopes of 45 meter diameter.
- **Concept:**
  - It functions at the meter wavelength part of the radio spectrum because man-made radio interference is considerably lower in this part of the spectrum in India and there are many outstanding astrophysics problems which are best studied at meter wavelengths.
- **Indigenous Project:**
  - Its design is based on the `**SMART'** concept - for Stretch Mesh Attached to Rope Trusses.
- **Built and operated by:**
  - National Centre for Radio Astrophysics - Tata Institute of Fundamental Research, (NCRA-TIFR), Pune.

Gravitational Lensing

- It is a phenomenon in which the light emitted by the source is **bent due to the presence of another massive body**, such as an early type elliptical galaxy, between the target galaxy and the observer, effectively resulting in the magnification of the signal.
- It **probes** the distribution of matter in galaxies and clusters of galaxies, and enables observations of the **distant universe.**
- It allows researchers to **study the details of early galaxies** too far away to be seen with current technology and telescopes.

4.5. Venus mission 'Shukrayaan'

Why In News?

Indian Space Research Organisation (ISRO) is yet to receive approval from the Indian government for the Venus mission and the mission could, as a result, be postponed to 2031.

- ISRO received an allocation of ?13,700 crores in the 2022-2023 budget, marginally higher than the year before. The bulk was diverted to the human spaceflight mission, Gaganyaan.

About the mission,

- **Timeline:** ISRO had originally hoped to launch Shukrayaan I in mid-2023 but cited the pandemic when it pushed the date to December 2024.
    - Other ISRO missions, including **Aditya L1 and Chandrayaan III**, have also been affected by manufacturing delays and commercial launch commitments.
    - The idea was born in 2012; five years later, ISRO commenced preliminary studies after the Department of Space received a 23% hike in the 2017-2018 budget.
- **Overview of Mission:** Shukrayaan I will be an orbiter mission. Its scientific payloads currently include a high-resolution synthetic aperture radar and a ground-penetrating radar.
    - The mission is expected to study Venus's geological and volcanic activity, emissions on the ground, wind speed, cloud cover, and other planetary characteristics from an elliptical orbit.

Progress of other countries

- Both the U.S. and the European space agencies have Venus missions planned for 2031 — referring to VERITAS and EnVision, respectively — while "China might go anytime: 2026, 2027.

4.6. Starlink Project

Why In News?

- According to a recent **report published by The Economist**, Starlink has become an essential part of Ukraine's bid to fight the Russian invasion.

More about the news

- **SpaceX's Starlink** is helping Ukraine in the **fight against Russia** by providing thousands of **Starlink satellite internet devices** to **Ukraine without any charge**.
- It also emerged as a **crucial communication tool for Ukraine's armed forces** because their own mediums of communication were compromised by Russian hackers.

More about the Starlink Project

- **About:**
    - Starlink is a satellite constellation that comprises thousands of small satellites in low-Earth orbit.
    - SpaceX first began sending them into space in 2019.
    - Currently, there are more than 3,000 of these satellites that send internet signals to designated ground receivers.
- **Required infrastructure:**
    - Unlike traditional internet providers, Starlink doesn't require any ground infrastructure.
    - One just needs to have a small satellite dish or a receiver device to access high-speed internet, much like satellite TV.

- **Accessibility:**
  - The company also has a mobile **application for Android and iOS** that uses **augmented reality** to help **customers choose the ideal location and position** for their receivers.
- **Expansion plans:**
  - According to a report published by DW, SpaceX plans to "expand the network to **up to 12,000 satellites, with a possible extension to 42,000**".
- **Issues of space debris:**
  - The satellites of Starlink work **only for five years** and once they are dysfunctional, they remain in space and **contribute to space debris**.
  - SpaceX's ambitious plan of launching 42,000 more satellites in the next few years **might lead to overcrowding in our orbit,** which in turn would impede astronomers from making observations from Earth.
- **Accessibility in combat environment:**
  - According to the report, what makes Starlink easily accessible even in the combat environment is the fact that the **dishes and terminals used for providing the internet are portable** and can be **rigged to run off a car battery**.
    - In an area which has an **unreliable supply of electricity**, this is a huge advantage.
  - Apart from this, because Starlink consists of thousands of satellites that orbit around the Earth and **aren't too far from the ground,** they are able to **provide high bandwidth without many glitches**.
    - This has also made **drone warfare** much easier.

4.7. Local Bubble

Why In News?

- Researchers from the Center for Astrophysics (CfA) have generated a 3D magnetic map of the cavity called Local Bubble.

About Local Bubble

- The Local Bubble is a 1,000-light-year-wide cavity or a superbubble.
  - Other superbubbles also exist in the Milky Way
  - Space is full of these superbubbles that trigger the formation of new stars and planets and influence the overall shapes of galaxies
- The Local Bubble is thought to have originated from supernovae roughly 14 million years ago.
  - Supernova is a cosmic explosion occurring when stars meet their end.
- **Relevance :**It has been that this map is a starting point for expanding our understanding of the superbubbles throughout our galaxy,
  - New research on a giant cosmic cavity that surrounds the solar system could reveal the universe's secrets, including questions about the origins of stars.

4.8. 108th Indian Science Congress

Why In News?

The Prime Minister of India addressed the 108th Indian Science Congress (ISC).

- The focal theme of this year's ISC is "Science and Technology for Sustainable Development with Women Empowerment" which will witness discussions on issues of sustainable development, women empowerment, and the role of science & technology in achieving this.

About Indian Science Congress

- It is a one-of-its-kind event in the country, bringing together scientists and researchers not just from the premier institutions and laboratories but also science teachers and professors from colleges and universities.
- It offers a platform for their interaction with students and the general public on matters related to science.
- It is organized by the **Indian Science Congress Association (ISCA)**, an independent body functioning with the support of

the **Department of Science and Technology (DST) in the central government.**

- **The decline of Science Congress:** It has attracted attention for all the wrong reasons — lack of serious discussion, the promotion of pseudoscience, outlandish claims by random speakers, and the absence of useful outcomes.
    - Most credible scientists now avoid the event.
- **Suggested Reforms:** A better way to reform the Science Congress could be to develop an alternative forum where top Indian and global scientists could be invited to talk about the latest developments in the scientific world and their impacts on our lives.
    - Such events are already being organised in many countries, and are extremely popular.

4.9. Generative Artificial Intelligence (AI)

Why In News?

- There are rising applications and ethical concerns in **Generative Artificial Intelligence (AI).**

What is Generative AI?

- It is a cutting-edge technological advancement type of artificial intelligence that involves creating new, original content or data using machine learning algorithms.
- It can be used to generate text, images, music, or other types of media.
- **Generative AI** works by **training a model on a large dataset** and then using that model to generate new, previously unseen content that is similar to the training data.
- This can be done through **techniques** such as:
    - Neural machine translation,
    - Image generation, and
    - Music generation.

Applications of Generative AI

- **Revenue generation:**
    - Generative AI can craft sales, marketing, and brand messaging.
- **Blogging and reach:**
    - Agencies can generate personalised social media posts, blogs, and marketing text and video copies by providing a text prompt to a Generative AI service, like ChatGPT.
- **Efficient communication:**
    - The service can quickly iterate different text by simply tweaking the prompt to effectively communicate with the audience.
- **Logo and imagery:**
    - DALL.E, a generative image generation service, can also generate original imagery to align with the branding.
    - Many startups are exploring services like DALL.E2, Bing Image Create, Stable Diffusion, and MidJourney to create their brand logo and to align the same with Generative AI text messaging.
- **Copywriter:**
    - Instoried is using Generative AI for marketers to become better copywriters.
- **Coding:**
    - GitHub, Copilot6 and ChatGPT1 can generate code and help with developer productivity.
    - It can suggest entire functions, snippets, and even fully functioning modules and generate code in real-time right in your editor.
    - ChatGPT can also help you write code to build a technology service or integration quickly.
- **Synthetic Data:**
    - Generative AI can also be used for generating synthetic data for data augmentation and creating additional training data to train and test AI models to experiment at scale.
- **Summary of data:**
    - It can sift through numerous legal research materials and produce a pertinent, specific, and actionable summary.
- **Medical history and related important data:**
    - It can also help health professionals with their medical diagnosis. AI can generate potential and alternative treatments personalised to patients' symptoms and medical history. For instance, DeepMind AlphaFold can predict the shape of protein.
- **Simplifying complex queries:**
    - ChatGPT can also assist in providing answers to complex queries and augment search algorithms to generate responses to complex search queries.
- **Monitoring and reviewing:**
    - AI is being used to generate media reviews to help parents to monitor and steer their children's content consumption habits.

- **Complex design creation:**
    - It can help create and simulate complex engineering, design, and architecture.
- **Testing:**
    - It can help speed up the iterative development and testing of novel designs.
- **Interior 3D Plans:**
    - Architecture, machine design, and even house floor plans are all be made by Generative Image and video technology.
    - A Generative AI service, for instance, can let engineers and consumers design and iterate over floor plans and architectures with as little as a text prompt or vocal command.

Significance

- Generative AI has the potential to revolutionise many industries by **automating the creation of content** and enabling the generation of new ideas and concepts.
- It can reduce the countless hours of human research and enable them to focus on more complex and exciting problems.
- It has wide use **applications**, all simplifying the job.

Concerns around AI use

- **Ethical:**
    - It raises ethical concerns about the potential for biased or inaccurate content to be generated and disseminated.
- **Responsible Development:**
    - If not designed and developed responsibly with appropriate safeguards, Generative AI can create harm and adversely impact society through misuse, perpetuating biases, exclusion, and discrimination.
- **Perpetuates biases:**
    - Generative AI systems can perpetuate and amplify existing biases and exclusion.
    - If the models are trained on biased, non-inclusive data, they will generate biased outputs, such as offensive or discriminatory language, demeaning and degrading imagery, and prejudicial content.
- **Fake news & hate words or speeches:**
    - Generative AI systems can create content for malicious purposes, such as deepfakes, disinformation, and propaganda.
    - It can also generate offensive or inappropriate content.
    - Nefarious actors may use AI-generated media to manipulate people and influence public opinion.
- **Access to privacy:**
    - These systems can potentially access sensitive information, raising concerns about data privacy and security.
- **Incorrect data and diagnosis:**
    - It may also produce low-quality and less accurate information, specifically in the context of complex engineering and medical diagnosis.
- **Accountability can not be fixed:**
    - It can be challenging to determine who is responsible for the content generated by a generative AI system — the acquisition and consent model around the training data and intellectual property issues make it difficult to hold anyone accountable for any harm resulting from its use.

Way Ahead

- It is important for developers and users of generative AI to consider the potential impacts and ensure that the technology is **used ethically and responsibly.**
- There must be rigour and responsibility to developing AI technology, **enforce ethical guidelines, conduct regular audits for fairness**, identify and address biases, and protect privacy and security.
- It is essential to carefully consider the **potential harms, threats, and concern**s of Generative AI systems and ensure that they are used responsibly and ethically.
- Countries must add **adequate policy, regulation, awareness,** and education guardrails to develop and use Generative AI services ethically and responsibly.



5. Social Issues & Justice

5.1. Child Mortality and Stillbirths

Why in News?

- UN Inter-agency Group for Child Mortality Estimation (UN IGME) recently released reports on Child Mortality and Stillbirths.

Highlights of the report:

- In 2021, approximately 2.3 million children died during the first month of life – or about 6,400 babies every day.
- These deaths constituted nearly 47 per cent of the 5 million under-five deaths in 2021.
- An estimated 2.1 million children, adolescents and youth aged 5–24 years died in 2021.
- Over half of these deaths occur among adolescents and youth aged 15–24 years.
- More than 80 per cent of under-five deaths and about 70 per cent of all deaths among 5–24-year-olds occurred in sub-Saharan Africa and Southern Asia.
- Globally, the under-five mortality rate was 38 deaths per 1,000 live births in 2021.
    - In sub-Saharan Africa, the rate was 74 deaths per 1,000 live births. Children and youth older than 5 years old also face the highest probability of dying in sub-Saharan Africa.
    - In low-income countries, the 2021 under-five mortality rate was 67 deaths per 1,000 live births, versus just 5 deaths per 1,000 live births in high-income countries.
- The under-five mortality rate in the 37 countries classified as fragile and conflict-affected situations was triple the rate in all other countries.

Child Mortality in India:

- As per the above UN report, India's share in these child mortalities was estimated at 7,09,366 under-five deaths; 5,86,787 infant deaths (death before first birthday); and 4,41,801 neonatal deaths.
- The Sample Registration System (SRS), released in September 2022, showed wide inter-State variations in child mortality in India.
- For every 1,000 live births, the infant mortality rate in Madhya Pradesh was six-fold the rate in Kerala.
- Children in rural areas in any age subgroup have much higher mortality rates than their urban areas.

Reasons behind these deaths:

- ***Preterm births:*** The first challenge is children being 'born too early' (preterm births), which means they are born alive before 37 weeks of pregnancy are completed.
- 'Preterm babies' are two to four times at higher risk of death after birth in comparison to those born after 37 weeks of gestation. Globally, one in every 10 births is preterm.
    - In India, one in every six to seven births is preterm. India has a high burden of preterm births.
    - Studies have shown that preterm births contribute to one in every six under-five child deaths. However, three out of every four deaths due to preterm birth-related complications are preventable.
- ***Stillbirths*:** A baby who dies any time after 22 weeks of pregnancy, but before or during the birth, is classified as a stillborn.
    - Globally, an estimated 1.9 million stillbirths happened in 2021.
    - In 2021, the absolute estimated number of stillbirths in India (2,86,482) was greater than the death amongst children in 1-59 months of age (2,67,565).

- One of the reasons preterm births and stillbirths do not get due attention is the lack of granular and reliable data. Over decades, while countries have strengthened the mechanisms for tracking child mortality, the data on stillbirths and preterm births are scarce.
- Even at the global level, the first-ever report on stillbirths was released only in October 2020. Experts believe that the problem is the lack of timely, granular data on stillbirths from the block, district and State levels.
- ***Lack of basic rights*:** Children are deprived of their basic right to quality health care, vaccinations, proper food and clean water and sanitation. Too many children continue to die because efforts to address preventable communicable and infectious diseases remain inadequate.
- ***Conflict and emergencies*** including the COVID-19 pandemic also continue to threaten the survival of children.

Way Forward:

- The proposed SDG target for child mortality aims to end, by 2030, preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 deaths per 1,000 live births and under-5 mortality to at least as low as 25 deaths per 1,000 live births.
- Quality data is vital to monitoring the survival of children.
    - Investing in data collection mechanisms and systems, particularly in conflict-affected situations is an essential component of realising children's rights and achieving the SDGs.
- For reducing both stillbirths and preterm births, the focus must be on: increasing access to family planning services; improving antepartum services such as health and nutrition, including the intake of iron folic acid by pregnant mothers, providing counselling on the importance of a healthy diet, and optimal nutrition; and identification and management of risk factors.
    - The measures to prevent, detect early and manage diseases which put mothers at high risk, such as diabetes, hypertension, obesity and infections, will also help in reducing preterm births and stillbirths.
- Monitoring labour and functional referral linkages and improving the quality of healthcare services will prevent stillbirths.
- The maternal and perinatal deaths surveillance guidelines need to be effectively implemented and the International Classification of Diseases' definition for perinatal mortality must be adopted.
- India should also identify the hot spot clusters of stillbirths and preterm births for local and targeted interventions.
- The Union government shall focus on reaching the target set by the National Health Policy of 2017 of investing 2.5% of the GDP on health by 2025.

5.2. A reminder of the flaws in India's urbanisation policies

Why in News?

- Release of a report by the World Bank to finance India's Urban needs.

More Details:

- As per the report of the World Bank (November 2023), the financing of India's urban structure through private investments ameliorates the urban problem.
- Urban finance is majorly funded by government sources. The funds are derived from Central (48%), State (24%), and city (15%) governments. On the other hand, public–private partnership projects contribute 3% and commercial debt 2%.
- Several reports have estimated the huge demand for Urban Infrastructure. For instance,
- As per the report of Isher Judge Ahluwalia, approximately ₹39.2 lakh crore would be required by 2030.
- The 11th Plan puts also estimates nearly ₹1,29,337 crore for four basic services,

₹1,32,590 crore for urban transport, and ₹1,32,590 crore for housing.

- Similarly, a McKinsey report on urbanisation estimates $1.2 trillion (or ₹90 lakh crore).

Details of World Bank Report:

- According to the World Bank, around $840 billion (₹70 lakh crore) investment would be required in urban India to meet the growing demands of the population. Moreover, $55 billion would be required every year.
- It should be noted that the flagship programmes of the government of India such as the Smart City mission, the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), the Pradhan Mantri Awas Yojana (PMAY), etc., together are less than ₹2 lakh crore (for a period of 5 years).
- The core idea of the report is to improve the fiscal base and creditworthiness of Indian cities. For instance, increasing user fees, service charges, and property taxes.
- However, despite highlighting that 85% of government revenue is from the cities (implying that urban citizens are contributing large revenues), the report emphasizes levying more taxes on utilities.
- The basic issue with the report (and other similar reports) is that they follow a top to bottom approach and focus more on technocentric solutions that involve high capital-intensive technologies.

Alternative Approaches:

- The urban plans should be made from below by engaging the citizens and identifying their needs.
- The national task force chaired by K.C. Sivaramakrishnan suggested the following measures:
    - Empower the people
    - Transfer subjects to the city governments,
    - 10% of the income tax collected from cities should be given back and it should be ensured that this corpus fund was utilized only for infrastructure development.
- Another important step is to improve urban governance. Regular elections should be held in cities and finances, functions, and functionaries(3 Fs) should be transferred.

World Bank's report made the following suggestions:

- State-level management of urban water and sewerage functions should be devolved in a timely manner.
- An improved framework should be formulated for a stable fiscal transfer regime.
- The accordance of financial powers to urban local bodies (ULB) with proper rules and regulations.

Case Study of Shimla:

- In 2016-17 Shimla Water Works was made a single utility and was called the Greater Shimla Water Supply and Sewage Circle (GSWSSC) under the Shimla Municipal Corporation.
- A soft loan was provided by the bank ensuring an adequate supply of water and proper distribution under the Shimla Municipal Corporation.
- However, in 2017-18, the character of GSWSSC was changed to a company known as Shimla Jal Prabandhan Nigam Limited. It is now run by a board of directors outside the ambit of the municipality.
- It is argued that such steps might prove to be perilous for urbanisation in India.



6. Health

6.1. Elimination of Kala Azar

Context

- The Union Health Ministry reported that India is committed to **eliminating Kalaa-azar** from the country by 2023.

About Kala Azar:

- **Kala-Azar or Visceral Leishmaniasis** is a slow progressing indigenous condition that is caused by a protozoan parasite.
- Kala-azar is one of the most lethal and neglected tropical diseases (NTDs).
- The parasite infects the reticuloendothelial system and may be found in abundance in bone marrow, spleen, and liver.
- **Kala-azar** is the second deadliest **parasitic** killer in the world after Malaria.

- **Distribution:**
  - **Global:** About 90% of global cases of Kala-azar were reported from eight countries: Brazil, Eritrea, Ethiopia, India, Kenya, Somalia, South Sudan and Sudan in 2021.
  - **India:** Contributing 11.5 pc of total cases reported globally.

- **Symptoms**:
  - Recurring fever with a double rise in temperature.
  - Loss of appetite and weight loss.
  - Weakness and fatigue.
  - Dry, thin, scaly skin, and hair loss.
  - Grayish discoloration of the skin of hands, feet, face, and abdomen in light-skinned people, hence the name kala-azar or black fever.
  - Rapid deficiency in red blood cells or hemoglobin.
  - Enlargement of the spleen.
  - Liver enlargement.

Government Efforts:

- The World Health Organisation (WHO) Neglected Tropical Diseases Road map has the target set for **Kala-azar elimination in 2030.**
- Government of India (GOI) launched a centrally sponsored **Kala-azar control programme** in the endemic states in the year 1990-91.
- GOI is directly working with development partners such as Bill Melinda Gates Foundation (BMGF), National Centre for Disease Control (NCDC) and World Health Organization (WHO) to eliminate Kala Azar from India.
- On a monthly basis Kala-azar elimination is being reviewed by the Prime Minister's Office (PMO) as well as higher officials of the Ministry of Health and Family Welfare.
- The Centre is supporting the states in active case detection, surveillance, treatment, and supply of diagnostic kits, medicines, sprays, etc.

Success:

- **Elimination status**: Less than one case per 10,000
- **Progress:** 98.7 per cent decline in cases of Kala-azar (2007 to 2022) in India.
- **Kala Azar endemic states**: Bihar, Uttar Pradesh, Jharkhand and West Bengal.

- Currently, more than 90% of the cases are contributed by Bihar and Jharkhand.
- Uttar Pradesh (2019) and West Bengal (2017) states have achieved their elimination targets at the block level.
- Only one block (Littipara) of Pakur district, Jharkhand is in the endemic category (1.23 cases/10,000 population).

6.2. Hybrid Immunity

Why In News?

- A recent study in the journal the **Lancet Infectious Diseases** held that **"hybrid immunity"** provides better protection against severe Covid-19.

What is Immunity?

- Immunity refers to the body's ability to **prevent the invasion of pathogens**. Pathogens are **foreign disease-causing substances**, such as bacteria and viruses.

Types of Immunity

There are broadly two types of immunity: **active and passive.**

- **Active Immunity:** It develops from the exposure to a disease thereby triggers the immune system to produce antibodies to that disease.
  - Active immunity can be acquired through **natural immunity or vaccine-induced immunity.**
  - **Infection-induced immunity** is defined as the immune protection in an unvaccinated individual after one or more infections.
  - **Vaccine-induced immunity** is acquired through the introduction of a killed or weakened form of the disease organism through vaccination. For Example COVID-19 vaccine.

- **Passive immunity:** It is provided when a person is given antibodies to a disease rather than producing them through his or her own immune system. For example, A newborn baby acquired passive immunity from its mother through the placenta.

Hybrid Immunity

- Hybrid immunity is defined as the immune protection in individuals who have had one or more doses of a COVID-19 vaccine and experienced at least one SARS-CoV-2 infection before or after the initiation of vaccination.

7.education

7.1. Foreign Universities can now set up Campuses in India

Why in News?

- Recently, the University Grants Commission (UGC) announced the draft regulations for 'Setting up and Operation of Campuses of Foreign Higher Educational Institutions in India'.
- The final regulations will be notified by the end of the month after considering feedback from all stakeholders.

What are the terms and conditions for foreign universities?

1. **Only full-time programmes in offline mode:**
   - Foreign universities with campuses in the country can only offer **full-time programmes in offline mode.**
   - Online or distance learning will not be allowed.
2. **Need of University Grants Commission (UGC) nod**
   - The foreign universities and **Higher Education Institutions (HEIs)** will need a nod from the UGC to set up their campuses in India.
3. **Limited period approval with strict quality control:**
   - Initial approval will be for 10 years and will be renewed in the ninth year

subject to the meeting of certain conditions.
    - The foreign universities shall not offer any such study programme which jeopardizes the national interest of India or the standards of higher education in India.
4. **Functional autonomy to Foreign Universities:**
    - Foreign universities will have the freedom to decide their admission criteria and fee structure.
    - However, the commission can advise on keeping the fees **"reasonable and transparent".**
5. **Matters related to funds and funding as per FEMA,1999:**
    - The cross-border movement of funds will be according to the Foreign Exchange Management Act.
    - Cross-border movement of funds and maintenance of Foreign Currency Accounts, mode of payments, remittance, repatriation, and sale of proceeds, if any, shall be as per FEMA, 1999.
    - An audit report shall be submitted annually to the **commission certifying the operations of the FHEIs.**
6. The operation of foreign HEIs shall not be contrary to the sovereignty and integrity of India, the security of the state, friendly relations with foreign states, public order, decency, or morality.

What does the National Education Policy [NEP], 2020 say about Foreign universities' establishment?

- The **National Education Policy** [NEP], 2020, has envisioned that top universities in the world will be facilitated to operate in India.
- A legislative framework facilitating such entry should be brought by the Government.
- Foreign universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India.

What are the benefits in establishing the foreign universities in India?

- **Such Foreign Higher Educational Institutions will provide:**
    - International dimension to higher education in India.
    - Enable Indian students to obtain foreign qualifications at affordable cost.
    - It will make India an attractive global study destination.
- **Diverse types of foreign universities** will be able to set up their campuses in India with sufficient functional autonomy to decide the admission process, fee structure and repatriate their funds back home.
- The foreign institution will recruit the top international faculty and staff and strengthen the quality of higher education in India.

What is the mechanism for the selection of the foreign universities?

- There will be two categories of foreign institutions eligible to apply for setting up their campuses in India:
    - The universities that have secured a position within the top 500 of overall or subject-wise global ranking.
    - A reputed institution in its home jurisdiction.
- **UGC will be the regulatory body:**
- The UGC shall constitute a standing committee to examine matters related to the setting up and operation of campuses of foreign HEIs in India.
- **The standing committee shall assess each application on:**
    - The credibility of the educational institutions.
    - The programmes to be offered.
    - Potential to strengthen educational opportunities in India.
    - Proposed academic infrastructure.

What is the way forward suggested by the experts?

- The need to ensure that the foreign faculty appointed to teach at the Indian campus shall stay at the campus in India for a reasonable period.
- Foreign varsities will also have to ensure the quality of education imparted at their Indian campuses is on par with their main campus.

7.2. Artificial Intelligence in Our Classrooms

Why in News?

- Artificial intelligence (AI) has the potential to revolutionize the way to teach and learn. By utilizing AI technology, teachers can personalize instruction for each student, provide immediate feedback, and offer a wider variety of learning materials.
- However, with any new technology, there are also concerns and challenges that must be addressed.

Key Highlights:

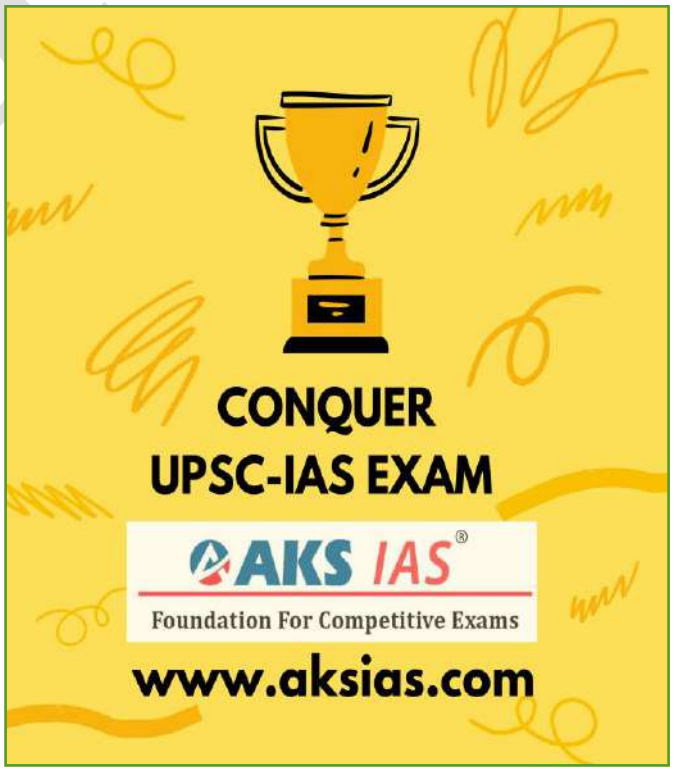
- Students around the world have been using AI to complete their work and **teachers have been reporting about how they doubt the credibility** of the work being submitted to them.
- AI tools, in the near visible future, are going to change the way one lives his/her lives. One of the major areas to be at the receiving end of this change **will be education.**
- **The education sector needs to quickly catch up** and adapt to the changing environment. With **Artificial Intelligence and Deep Learning-based tools,** the skill of just knowing an answer is becoming increasingly less important.

Need For the Change:

- The **model school structure,** where a teacher gives instructions to numerous students and teaches them to follow those instructions with efficiency, needs to change.
    - The focus on the skill of memorising information **will need to shift now.**
- Students are being taught to be mere **"rule followers"**, people who follow instructions properly and get a task done efficiently. As with AI, this skill **runs the risk of turning irrelevant.**
    - **Human beings cannot compete with a machine** when it comes to following instructions and carrying out a task with efficiency and accuracy.
- **Creative thinking is where the focus needs to shift.** Students should be helped to form their own opinions and perceptions that are individualistic.
- **An important skill** is to learn how to ask the right questions or an inquiry-based approach. With AI, we still need to know **what to ask the machine.**

What Needs To Be Done?

- **It should be considered whether our education system** provides ample opportunities for the cultivation of this skill
    - **Are schools equipped** with a comfortable student-teacher ratio where each student gets a chance to ask questions and nurture their curiosity?
    - **Do we have enough infrastructure** and budget allocation to ensure these setups?
- **The culture of asking questions** seems to be on the decline in our social fabric too, and that **poses a major concern.**
- One skill that gives **Human Intelligence an upper hand** is our ability to adapt to change in circumstances.
    - **The need is to focus on learning, how to adapt** and apply the learnt knowledge rather than finding a direct solution.
- The national curriculum is still not allowing secondary school students to use calculators.
    - **Current generation** is not prepared to let students be independent learners,who are not just being trained to know the answer can create their own paths.



8. Agriculture

8.1. How AI can help the agriculture sector

Why in news?

- The agriculture sector has come a long way with technology intervention bringing a paradigm shift in how farmers cultivate their crops.
- As the world population continues to proliferate at a fast pace and land becomes scarcer, people have to become more efficient in increasing their productivity and farm yield.

Scope of AI in agriculture:

- Considering the population size, the **UN Food and Agriculture Estimate** reveals that the global agricultural yield has to expand by **70 per cent** by **2050.**
- To assist the farmers in meeting the **ever-growing food demand,** the **$5 trillion** global agriculture industry is inclining towards **artificial intelligence (AI) technologies.**
- This is helping farmers adopt **market-specific solutions** for innovation, growth, and impact by improving a wide range of agriculture-related tasks imperative in the food chain.

Significance of artificial intelligence (AI) in the agriculture sector:

- **Analysing farm data:**
    - Traditionally, a myriad of tasks was required to be handled by farmers manually, including pest control, soil monitoring, forecasting weather conditions, etc.
    - Before the integration of AI, it was challenging for farmers to analyse data points on the ground daily.
    - With the help of AI, it has become **easier to predict several real-time factors** such as weather, temperature, water usage, and soil conditions to make better decisions.
    - For instance, AI enables farmers to make **better farming choices** from the planning stage to create more bountiful yields.
- **Precision Farming**
    - In addition, AI-based technologies aid farmers in **precision agriculture**, further improving quality and accuracy in farming. The AI technology analyses data for **detecting diseases** in plants, pests, and poor nutrition in crops.
- **Detecting weeds and toxins:**
    - The **sensors** also play a crucial role in **detecting and targeting weeds** and then deciding the appropriate herbicides to apply. This keeps **excessive toxins** at bay and results in healthy food production.
- **Better forecasting:**
    - **AI's predictive models** help farmers forecast significant factors influencing yield productivity. These models **predict upcoming weather patterns** to assist farmers in decision-making and attain agricultural accuracy.
    - Seasonal and weather forecasting plays a crucial role in farming, especially in small farms with limited data and knowledge, and farmers cannot burn their money in experiments or guesswork.
    - Small farms contribute to the agricultural economy and produce income for most of the farming community. Hence, AI

implementation is necessary to keep such farms operational.

- **Monitoring:**
  - Besides, AI enables farmers to **monitor the fields more professionally** than ever.
  - The data captured through drones flying over the fields help farmers monitor the field in real-time with better efficiency.
  - Through AI-enabled **drone** cameras, farmers can **identify problematic areas** in larger fields that are difficult to monitor by humans in lesser time.

Tackling labour shortages:

- **Automation:**
  - Agriculture is a **labour-intensive activity** that traditionally required seasonal workers to harvest crops and monitor farms.
  - With more people moving from an agrarian society to cities, farmers are facing a **shortage of labour** for the upkeep and output of their farms.
  - As AI technology is transforming each business sector with **automation,** agriculture is not immune from its willingness to lend a helping hand to the farmers.
  - AI bots can be used in multiple ways, from harvesting crops at a higher volume to locating problem areas in the field.
- **Dissemination of information:**
  - Farmers can also use **AI chatbots** for technical assistance. Many **agritech start-ups** are taking initiatives to equip farmers with the technical know-how of **modern farming practices.**
  - As a result, they help farmers with answers to various questions and provide **advice and recommendations** based on their queries.
- **Cost efficiency:**
  - **The deployment of technology** also helps farmers acquire greater cost efficiency.
  - Technology replaces several mundane and time-consuming human-oriented tasks with automation.
- **Reducing labour and labour costs:**
  - Farmers can monitor their crops more accurately by **eliminating laborious tasks** and reducing errors and labour costs.
  - Therefore, with **less labour workforce,** farmers can still meet the world's ever-growing food demand with **more efficiency and yield productivity.**

Conclusion:

- The fundamental need to grow food will never fade away. In fact, it will increase with the growing population's needs.
- Fortunately, AI will allow farmers to operate their farms at larger sizes with greater cost and time efficiency. With **cognitive technologies**, they can produce food with **better productivity.**

8.2. How Carbon Trading can benefit the Agriculture Sector

Why in News?

- Recently, The Union Ministry of Power has notified the implementation of the **Energy Conservation (Amendment) Act, 2022,** from January 1.
- The amendment **empowers the Union government to lay down a carbon credit certificates trading scheme in India.**

Key Highlights:

- Many corporations around the world have set themselves the **target of addressing climate change by reducing greenhouse gas (GHG)**

emissions to a certain extent or achieving net zero emissions.
    - The reduction in GHG emissions can be achieved by such corporations directly from their own operations.
- The **carbon credit system** was ratified in conjunction with **Kyoto protocol** and is aimed at **reducing greenhouse gas emissions.**
- The **Paris Agreement** validates the application of carbon credits and sets the provisions for the further facilitation of the carbon credits markets.
- As per the **Food and Agriculture Organisation,** agriculture and related land use activities **contribute more than 18 percent of global carbon dioxide emissions.**

What is Carbon Trading and Carbon Credit?

- Carbon trading is the **buying and selling of the right to emit a tonne of CO2 or equivalent (CO2e).**
    - The right to emit a tonne of CO2 is often referred to as a **carbon 'credit'** or carbon 'allowance'.
- It reflects an instrument received by a person whose activity has sequestered, reduced, or avoided one tonne of carbon dioxide emissions from the atmosphere.
- These credits can then be **traded with other entities on regulated (global or national) or voluntary carbon markets** and the amount received thereon can be **utilized for further promoting such sustainable activities.**

What is the Significance of Carbon Credit?

- Carbon credits **allow carbon dioxide emissions to be traded as a commodity** in the market which compensates sellers for investing in emission reduction practices and thus **incentivises the net reduction of carbon dioxide** in the atmosphere.
- Corporations that cannot directly reduce their GHG emissions **can offset their emissions indirectly by purchasing carbon credits** from other individuals and entities.
- As the significance of climate and sustainability increases for countries, investors (especially ESG-driven investments), employees, and customers' **demand for these credits is also expected to significantly increase.**

Which activities are eligible for Carbon Credit?

- Various practices could be eligible for earning carbon credits, including **renewable energy, afforestation, ecological restoration, agriculture, waste management,** etc.

How can carbon trading benefit the agriculture sector?

- Agriculture is also the **biggest contributor to GHG emissions within the entire food** system.
    - Being a major source of emissions, agriculture **could also serve as an important sink to store carbon** and thus reduce, avoid or sequester carbon dioxide emissions.
- Carbon credits could be generated in agriculture based on carbon dioxide sequestered and stored **by the soil from the atmosphere** as well as the reduction in carbon dioxide emissions **during the cultivation process** from ploughing to the management of stubble.
    - For instance, various activities related to agriculture such as **tilling of fields before sowing seeds, use of chemical fertilizers, stubble burning,** etc. result in carbon dioxide emissions.
- Encouraging activities like **zero-tilling agriculture, agroforestry, improved water management, crop diversification and reduced use of chemical fertilizers** can improve soil health and its capacity to store carbon.
    - It is estimated that **soil carbon sequestration is a cost-effective measure to mitigate climate change** and can sequester around 2.6 gigaton emissions per year.
- The improvement in the carbon-storing capacity of the soil could **improve fertility, crop yields, farmers' income, water conservation**, etc., thereby aiding in making agriculture resilient in the long run.
    - As an example, the use of the **direct-seeding method to cultivate rice** instead of transplantation of saplings in flooded fields **can reduce methane emissions** (generated from bacteria in flooded fields) and **water**

consumption, and also improve soil nutrition.

- The promotion of similar practices **could help in reducing emissions and providing carbon credits to farmers.**
    - Farmers can then **sell these credits in the market and earn additional income,** thus further incentivising them to implement such activities and improve soil carbon.

What are the challenges?

- **Low Participation of Agriculture Sector**
    - The carbon credits **conceptually seem encouraging** for climate change and agriculture **but there is low participation** of the agricultural sector in carbon trading markets.
        - For example, as per the **Berkeley Carbon Trading Project,** agricultural activities **accounted for only 1 per cent of all carbon credits issued** for emissions reduction projects in 2021.
- This **nascent level of agricultural carbon trading** can be attributed to various reasons such as -
    - Low level of stakeholder awareness
    - Low level of methodology for determination of emissions reduced, avoided, or sequestered due to agriculture activities
    - Non-permanence of carbon sequestered in the soil
    - Verification of the quality of carbon credits
    - Monitoring of underlying projects,
    - Determination of the fair value of carbon credits to incentivise farmers to adopt sustainable practices etc.
- The **average landholding size of an Indian farmer is just over one hectare.**
    - Thus, the amount of carbon credits received may not be enough for a small farmer to adopt regenerative agriculture practices.

Way Forward:

- Farmers **need to be made aware of the existence and benefits of carbon credit** programmes, so that all farmers practicing regenerative agriculture can benefit from it.
- Need of a **streamlined policy to address these challenges** which will help in expanding the currently under-**utilized space for carbon credit** trading from commercial agriculture.
- Governments at the state and central level **could attempt to align existing natural farming, regenerative farming, and organic farming schemes** so as to nudge farmers to participate in carbon credit programmes.

Conclusion:

- With countries across the world making climate commitments, the **interplay of carbon credit markets with farmers is likely to evolve over the coming years.**
- However, given the multifaceted benefits of an increase in soil carbon levels, it may be the nudge that **leads to the proliferation of regenerative agriculture practices and helps combat climate change.**

9. Environment

9.1. Protests over Eco-Sensitive Zones

Why in News?

- Several farmers' outfits and church bodies in Kerala have announced protests against a satellite survey of eco-sensitive zones, conducted by the state government, in tune with a Supreme Court order.

What are Eco-Sensitive Zones?

- As per the **National Wildlife Action Plan (2002-2016)**, issued by the Union Ministry of Environment, Forest and Climate Change, land within 10 km of the boundaries of national parks and wildlife sanctuaries is to be notified as eco-fragile zones or Eco-Sensitive Zones (ESZ).

- While the 10-km rule is implemented as a general principle, the extent of its application can vary.
- Areas beyond 10 km can also be notified by the **Union government as ESZs,** if they hold larger ecologically important **"sensitive corridors."**

Why are Eco-Sensitive Zones created?

- ESZs are created as **"shock absorbers"** for the protected areas, to minimize the negative impact on the "fragile ecosystems" by certain human activities taking place nearby.
- Furthermore, these areas are meant to act as a **transition zone from areas** requiring higher protection to those requiring lesser protection.
- The guidelines also state that the ESZs are not meant to hamper the daily activities of people living in the vicinity, but are meant to guard the protected areas and **"refine the environment around them".**

Activities allowed in ESZs:

- **Prohibited activities:**
  - Commercial mining, sawmills, industries causing pollution (air, water, soil, noise, etc), the establishment of major hydroelectric projects (HEP), commercial use of wood, Tourism activities like hot-air balloons over the National Park, discharge of effluents or any solid waste or production of hazardous substances.
- **Regulated activities:**
  - Felling of trees, the establishment of hotels and resorts, commercial use of natural water, erection of electrical cables, drastic change of agriculture system, e.g. adoption of heavy technology, pesticides, etc, widening of roads.
- **Permitted activities:**
  - Ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, use of renewable energy sources, and adoption of green technology for all activities.

What is the recent SC judgment that has caused an uproar in Kerala?

- On June 3, a three-judge bench of the Supreme Court heard a PIL that sought to protect forest lands in the Nilgiris in Tamil Nadu but was later expanded to cover the entire country.
- In its judgment, the court while referring to the 2011 guidelines as **"reasonable",** directed all states to have a mandatory 1-km ESZ from the demarcated boundaries of every protected forest land, national park, and wildlife sanctuary.
- It also stated that no new permanent structure or mining will be permitted within the ESZ.
- If the existing ESZ goes beyond **1-km buffer zone** or if any statutory instrument prescribes a higher limit, then such extended boundary shall prevail, the court.

Why are people protesting against it?

- Due to the high density of human population near the **notified protected areas,** farmer's groups and political parties have been demanding that all human settlements be exempt from the ESZ ruling.
- Several farmers fear that the regulations that may accompany the ESZ delineation would make farming impossible. They worry that they could be gradually evicted from their holdings.
- The creation of a **buffer zone would lead** to the setting up of a parallel administrative system run by the State Forest Department.
- Once the buffer zone is notified, forest officers will call the shots and cause unnecessary hurdles for farmers and settlers.
- The State Government apprehends that the SC's notification may worsen the ground situation as it would adversely impact the interests of the State besides upsetting the lives of millions living near the protected areas.

'Faulty report':

- In its order, the apex court had directed the **Principal Chief Conservator of Forests** of each State and Union Territory (UTs) to draw up a list of subsisting structures and other relevant details within the respective ESZs and furnish a report within three months.
- The court had indicated that the States/UTs could take the assistance of any governmental agency for satellite imaging or photography using drones for the purpose of preparing the list.
- The Kerala government engaged the **Kerala State Remote Sensing and Environment Centre (KSRSEC)** for this task.

- **Findings of Report:**
    - The KSRSEC report identified **49,330 existing structures** using satellite images, including 14,771 residential buildings and 2,803 commercial buildings.
    - The KSRSEC had also reported that **115 villages in Kerala** would come under the buffer zone of the protected areas of the State.
    - According to its report, a total area of 1,588.709 sq. km would come under ESZs.
    - The sanctuaries and national parks in the State are spread over an area of 3,441.207 sq. km.
    - The assessment found that 83 tribal settlements were located within the **ESZs of the State.**
- With several organizations of farmers, factions of the Church, and political parties protesting against the **'inaccuracy'** of the study, the Kerala government was forced to appoint an expert committee headed by **Thottathil Radhakrishnan,** a former Chief Justice of the Calcutta High Court, for field verification of the report.

Conclusion:

- For a State sandwiched between the mountains and the sea, any attempt to alter or fine-tune the ecological regulatory mechanism is sure to trigger a volley of protests.
- In order to achieve **sustainable development** over the long term, the States should act as a trustee for the benefit of the general public in relation to natural resources.
- The government needs to take a middle path while taking into consideration all the stakeholders so that a win-win situation can be achieved.

9.2. Preservation of Ozone Hole

Why In News?

- A recent scientific assessment has suggested that the ozone hole is now **expected to be completely repaired by 2066**.

Key Findings

- **Recovery period:**
    - The ozone layer over Antarctica, where the hole is the most prominent, will take a **long time** to heal completely.
    - If current policies continued to be implemented, the ozone layer was expected to recover to 1980 values by **2066 over Antarctica,** by 2045 over the Arctic, and by 2040 for the rest of the world.
    - Over the rest of the world, the ozone layer is expected to be back to where it was in 1980 **by 2040 itself.**
- **How it became possible:**
    - Successful elimination of some harmful industrial chemicals, together referred to as **Ozone Depleting Substances or ODSs**.
    - Implementation of the 1989 **Montreal Protocol**.
        - Nearly 99 per cent of the substances banned by the **Montreal Protocol** have now been eliminated from use, resulting in a slow but definite recovery of the ozone layer.
- **Ozone:**
    - Ozone (chemically, a molecule having three Oxygen atoms, or O3) is found mainly in the **upper atmosphere**, an area called **stratosphere**, between 10 and 50 km from the Earth's surface.
    - It is critical for planetary life, since it **absorbs ultraviolet rays** coming from the Sun.
    - UV rays are known to cause skin cancer and many other diseases and deformities in plants and animals.

Damage to the ozone layer

- **Origin:**
    - The depletion of the ozone layer, first noticed in the early 1980s, used to be the biggest environmental threat before climate change came along.
- **Hole or just reduction?**
    - Though the problem is commonly referred to as the emergence of a 'hole' in the ozone layer, it is actually just a

reduction in concentration of the ozone molecules.
    - Even in the normal state, ozone is present in extremely low concentrations in the stratosphere. Where the 'layer' is supposed to be the thickest, there are no more than a few molecules of ozone for every million air molecules.
- **Sharp reductions in concentrations of Ozone:**
    - In the 1980s, scientists began to notice a sharp drop in its presence.
    - This drop was much more pronounced over the **South Pole**.
    - It was later linked to the unique meteorological conditions that prevail over Antarctica:
        - Temperature,
        - Pressure,
        - Wind speed and
        - Direction
- **Biggest hole during months:**
    - The ozone hole over Antarctica is the biggest during the months of September, October, and November.
- **Main cause deciphered:**
    - The use of a class of industrial chemicals that contained chlorine, bromine or fluorine.
    - The most common of these were the chlorofluorocarbons, or CFCs, that were used extensively in the air conditioning, refrigeration, paints, and furniture industries.
- **Montreal Protocol:**
    - It was with this climate change objective in mind that the Montreal Protocol was amended in 2016 to extend its mandate over hydrofluorocarbons, or HFCs, that have replaced the CFCs in industrial use.
    - HFCs do not cause much damage to the ozone layer — the reason they were not originally banned — but are very powerful greenhouse gases.
- **Kigali Amendment:**
    - The Kigali Amendment to the Montreal Protocol seeks to eliminate 80-90 per cent of the HFCs currently in use by the year 2050.
    - This is expected to prevent another 0.3 to 0.5 degree Celsius of global warming by the turn of the century.

Timeline

- **Before 1979:**
    - Scientists had not observed atmospheric ozone concentrations below **220 Dobson Units** (DU; measure of the total amount of ozone in a vertical column of air above the Earth's surface).
- **1980s and after:**
    - In the early 1980s, scientists using ground-based and satellite measurements began to realise that the Earth's natural sunscreen was thinning dramatically over the South Pole each spring.
    - This thinning of the ozone layer over Antarctica came to be known as the ozone hole.
- In 1979, the maximum depth of the hole was 194 Dobson Units (DU). In 1982, it fell to 173 DU, in 1983 to 154 DU, and in 1985 to 124 DU.
- The image below has been picked from a series published by NASA showing the size and shape of the ozone hole every year from 1979 through 2019.
- Red and yellow areas in the images indicate the ozone hole. The maps show the ozone hole on the day the lowest ozone concentrations were measured each year.
- In 1991, ozone concentration fell below 100 DU for the first time. The deepest hole was in 1994, when concentrations fell to 73 DU on Sept 30.

Significance

- It covers the entire planet and protects life on earth by absorbing harmful **ultraviolet-B (UV-B) radiation** from the sun.
- **Impact on Plants**
    - Plants cannot live and grow in heavy ultraviolet radiation, nor can the planktons that serve as food for most of the ocean life.
- **Health impact of UV-B rays**
    - With a weakening of the Ozone Layer shield, humans would be more

susceptible to skin cancer, cataracts and impaired immune systems.
- Without it, life may have been impossible on earth due to harmful UV-B rays.
- **Ozone-Depleting Substances:**
  - Their elimination has an important climate change co-benefit as they are powerful greenhouse gases.
  - Several of them are hundreds or even thousands of times more dangerous than carbon dioxide, the most abundant greenhouse gas and the main driver of global warming.
  - Global compliance to the Montreal Protocol ensures the avoidance of 0.5 to 1 degree Celsius of warming by 2050.
  - That is if the use of CFCs and other similar chemicals had continued to grow the way it did before they were banned, the world would have been 0.5 to 1 degree Celsius warmer than it already is.

Concerns

- **Replacements available:**
  - The use of ODSs, though extensive, was restricted to some specific industries.
  - Their replacements were readily available, even if at a slightly higher cost initially.
  - The impact of banning these ozone-depleting chemicals was therefore limited to these specific sectors.
  - With some incentives, these sectors have recovered from the initial disruption and are thriving again.
- **Carbon footprints:**
  - Emission of carbon dioxide is inextricably linked to the harnessing of energy.
  - Almost every economic activity leads to carbon dioxide emissions. Even renewable energies, like solar or wind, have considerable carbon footprints right now, because their manufacturing, transport, and operation involves the use of fossil fuels.
- **Greenhouse gas emissions:**
  - The emissions of methane, the other major greenhouse gas, comes mainly from agricultural practices and livestock.
  - The impact of restraining greenhouse gas emissions is not limited to a few industries or economic sectors, but affects the entire economy, and also has implications for the quality of life, human lifestyles and habits and behaviours.

Way Ahead

- Ensuring that **existing restrictions** on ozone-depleting substances are **properly implemented** and global use of ozone-depleting substances continue to be reduced.
- Ensuring that banks of ozone-depleting substances (both in storage and contained in existing equipment) are dealt with in an environmentally-friendly manner and are replaced with **climate-friendly alternatives.**
- Ensuring that permitted uses of ozone-depleting substances are **not diverted to illegal uses.**
- **Reducing** use of ozone-depleting substances in applications that are not considered as consumption under the Montreal Protocol.
- Ensuring that **no new chemicals or technologies emerge** that could pose new threats to the ozone layer (e.g. very short-lived substances).

9.3. India's marine litter problem

Why In News?

- According to the Central Pollution Control Board, **India generates 55 million** tonnes of municipal waste annually, of which only 37 per cent is treated.

Reasons

- **Growing population**, **rapid urbanisation**, **shifting consumption patterns** and changing lifestyles have resulted in the mismanagement of plastic waste, leading to the accumulation of municipal solid waste.

- Most of these items, especially plastic items, contribute significantly to the **growing burden of marine debris.**
- **Land-based sources** account for most of the plastic in the water.
- **Unaccounted waste from urban agglomerations** is carried by river systems to oceans for final dumping
- **Mismanagement of plastic waste** generated in coastal cities and urban centres are leading to this reaching the water bodies

Concerns and Challenges

- Every year, thousands of tonnes of garbage, composed of plastics, glass, metals, sanitary products, clothes, etc., are dumped into the country's coastline.
- However, **plastics contribute a major portion** of about 60 per cent of the total marine debris that reaches the oceans.
- **Marine litter** is spread along the entire water column. High quantities of sediments are noticed during monsoon due to their spread into coastal water through creeks/rivers/estuaries, the research indicated.
- **Marine litter threatens ecosystems** and adversely affects **fishery and tourism** industries around the globe.
- In addition to negative economic impact, it affects public health with increased concerns about micro-plastic and risk of particles entering the food chain
- It tricks wildlife: Animals can easily get trapped in plastic bags or discarded fishing gear, or they mistake plastic for their food and it enters the food chain.

Initiatives

- The Ministry of Earth Sciences, through its attached office **National Centre for Coastal Research (NCCR),** has undertaken beach clean-up initiatives, awareness programmes and beach litter quantification studies at regular intervals.
- Attempts made by some organisations in rescuing marine species from the debris are worth mentioning. TREE Foundation, a Chennai-based non-profit, has been incessantly working on this.
- **India and Germany signed** an agreement on 'Cities combating plastic entering the marine environment'
- **The UK-India Intervention:** The Prime Ministers of the United Kingdom and India agreed a 'Roadmap 2030', which sets out an ambitious framework for UK and India partnerships in a wide range of science disciplines, including marine science.

Suggestions for managing marine litter in a better way.

- The **National Marine litter Policy of India**, announced in 2018, should be formulated.
- **Marine litter and microplastics distribution** and characterisation study should be conducted across the Indian coast.
- A **forum of coastal cities should be created** for ensuring a cross-learning ecosystem and to **build a synergetic association** of urban local bodies and local administration located on the coast.
- A **long-term vision plan should be developed** for promoting partnerships among coastal towns, cities and urban administration for the reduction of marine litter and the creation of sustainable waste management ecosystems.
- **Regular beach clean-up and awareness programmes** should be conducted instead of annual ones.

9.4. Crisis in the Himalayas

Why In News?

- Recently, **Uttarakhand's hill town Joshimath** experienced **rapid subsidence** (or ground sinking).

More about the news

- **Significance of the town:**
  - **Joshimath** serves as a gateway to popular pilgrimage sites like **Badrinath and Hemkund Sahib** as well as the popular **international skiing resort** of Auli.
- **Issue:**

- Despite a population of only about 23,000, it has been **heavily built-on**, with **hotels, resorts, and a bustling market** that caters mainly to **tourists, pilgrims, trekkers and personnel of the army** and the **Indo-Tibetan Border Police** (ITBP).
- After the incident of rapid subsidence, the town is likely to become **uninhabitable** and demonstrates the outcomes of ignoring the **key metric of the carrying capacity** of the **fragile Himalayan ecology**.

- **Other Himalayan towns:**
  - It has been reported that subsidence of the kind we have seen at Joshimath is **also evident in several other Himalayan towns**.

Ecological threats of Himalayan Region

- **Ecology under stress:**
  - Due to **population growth, industrial and commercial activity**, the fragile ecology is under a great stress.
  - The common threats are **deforestation, soil erosion and pressure on restricted land**.
- **Climate Change:**
  - Climate change is impacting people and threatening wildlife in the Himalayas.
  - Many **glaciers are melting and forming lakes** prone to **bursting and downstream flooding**.
  - **Traditional water springs** have dried up, **limiting the water supply.**
- **Unplanned Urbanisation:**
  - The **unplanned and unauthorised construction** has led to the blocking of the natural flow of water, which eventually results in **frequent landslides**.
  - **Himalayan slopes** have become extremely unstable in the last few decades due to **increased construction, hydroelectric projects**, and the widening of the **National Highway**.
- **Habitat Loss:**
  - The **conversion of forests for agriculture** and **exploitation for timber, fodder and fuelwood** threaten the biodiversity in this region.
- **Construction of Dams:**
  - The creation of numerous dams **without due environmental impact assessment** could lead to the **submergence of arable lands** and **biodiversity hotspots.**
  - Not only would valley habitats be inundated by the creation of reservoirs, but villagers would be displaced.
  - The effect of dams on **fisheries and fish ecology** is also a matter of concern.

Recommendations

- **Planning town's growth:**
  - The unplanned growth of new settlements should be discouraged.
  - It would be better to **consolidate scattered settlements** into **semi-urban clusters,** selected on the basis of stable **terrain features, availability of water and accessibility.**
  - **Facilities:**
    - These should be provided with education and health services and waste management facilities.
  - **Tourism:**
    - Tourism must take the form of homestead tourism, rather than the building of luxury eco-lodges.
    - Local aesthetics and harmony with nature should be respected.
      - In Joshimath, all these norms were violated.
- **Pilgrimage:**
  - A **state-wide inventory of pilgrim si**tes in the Himalayan zone should be undertaken and for each site, **a scientific estimation** should be made of its **carrying or load-bearing capacity** in terms of numbers of pilgrims each site may be able to handle daily and yearly.
    - The **dividing line** between **tourism and pilgrimage** should be clearly drawn.
  - **Constructions:**

- It was recommended that construction of roads should be **prohibited beyond 10 kilometres** from the protected pilgrim sites, creating an **ecological and spiritual buffer zone**, where there would be minimal human interference.
  - Within this buffer zone, no construction should be allowed.

- **Green road constructions:**
  - The concept of green road construction was introduced with **several key guidelines**.
    - No road construction plan would be approved without including the **provision of disposal of debris** from construction sites.
  - This was particularly necessary **to avoid blocking natural drainage** in the construction zone.
  - The rampant neglect of this rule has **led to water-logging in upstream areas** and **water scarcity in downstream areas** in many parts of the Himalayan region
- **Hydropower projects:**
  - It was recognised that the development of hydropower could transform the economy of the Himalayan states and bring prosperity to communities residing there.
    - It was also proposed that in the Himalayan zone, hydro projects should generally be of the **run-of-the-river variety** since **large scale water storage reservoirs** can **greatly disturb a terrain** that is **seismically unstable** and still shifting. **There have been a number of major disasters already.**
  - **The risk and benefit analysis** argues against undertaking such projects in such a sensitive and seismically unstable zone.
- **Defence constructions:**
  - Regarding defence constructions, it is important to bear in mind that **improved access in the short term** should not come at the cost of **seriously disrupted communications in the longer term** due to disasters brought on by a neglect of strict environmental norms.

Way ahead

- Denying development to populations living in remote mountain areas would be grave injustice, but the real issue has always been about p**ursuing development in keeping with environmental sustainability**.
- There is an urgent need to **undertake a detailed survey** of such settlements by **multidisciplinary expert teams**.

9.5. Cheetah project to bring in 12 big cats from South Africa

Why in News?

- India and South Africa have signed a long-pending agreement to translocate 12 cheetahs to India.

Details

- The Cheetahs from South Africa will be transported to India by February-end and reintroduced at the Kuno National Park in Madhya Pradesh.
- Eight Cheetahs were brought from Namibia in September 2022 under a similar agreement.
- According to the Environment Ministry, a Memorandum of Understanding (MoU) on the Reintroduction of Cheetahs to India was signed between India and South Africa.
- The MoU facilitates cooperation between the two countries to:
  - Establish a viable and secure cheetah population in India
  - Promote conservation and capacity building
  - Ensure sharing and exchange of expertise.

9.6. Liquified Natural Gas (LNG): Its Impacts on the Climate

Why in News?

- LNG is to compensate for lost Russian gas supplies, amid the war in Ukraine. But though touted as a short-term fix, many fear the gas is here for the long haul as the EU becomes the biggest LNG importer in the world.

What is Liquified Natural Gas or LNG?

- LNG is natural gas reduced to a liquid state (liquefaction) through intense cooling to around **-161 degrees Celsius (-259 Fahrenheit).**
- This liquid gas is 600 times smaller than the original volume and is half the weight of water.
- The compressed fossil fuel, which is constituted almost wholly of methane — **a potent greenhouse gas** —, can be transported around the world by ship.
- After arriving at its destination, the cargo is regasified in a floating terminal and redistributed through pipelines.
- But despite LNG's export potential, the high cost of liquefaction and producing LNG has limited its market.
- The cooling, liquefying and transport processes, as well as the **post-transport regasification procedures, also require a lot of energy.**

What's the Climate Impact of LNG?

1. **Large Energy Requirement:**
    - A lot of energy is required to extract natural gas from a reservoir, to transport from the gas field to the LNG facility for processing, to chill gas to such low temperatures, and to hold it at that temperature before it is warmed and regasified following a long sea or train journey.
    - Between **10-25% of the energy** of the gas is being lost during the liquefaction process.
2. **Risk of Methane Leakages:**
    - Methane loss across the supply chain risks also contributes to LNG's high emissions.
    - Because of LNG's much more complex production and transport process, the risks of methane leakages along the production, transport and regasification chain are simply much higher and therefore much more emissions-intensive.
3. **GreenHouse Gas Emissions:**
    - LNG emits "about twice as much greenhouse gas as ordinary natural gas," notes the US-based nonprofit **Natural Resources Defence Council (NDRC).**
    - Processing LNG is so **energy- and carbon-intensive** that it can create almost 10 times more carbon emissions than piped gas.
4. **Numerous stages Required:**
    - The numerous stages required to take LNG from the wellhead to the market lead to a **"very high imported emissions intensity"** in comparison to piped gas, whose emissions are limited to upstream and transport and processing.

Effects on India:

- To help ease demand for gas to heat and power homes and businesses, recently some **10 cargoes of liquefied natural gas (LNG)** that were destined for Asia were diverted to Europe.
- The sharp rise in global coal prices came as a boon for domestic suppliers such as Coal India. As the supply crunch in the key overseas markets grew and prices soared, the demand for coal from domestic sources climbed. Coal India and other **producers increased output,** yet supply remains quite tight.
- Over **70% of India's** power is generated from burning coal while the share of natural gas is just about **5%.** Thus, rising natural gas prices had a limited impact on the cost of power generation in India.

Key Concerns:

- **Increased additional costs:** By the end of the decade, additional costs for Germany's gas imports could reach up to €200bn ($212bn), doubling gas bills for consumers.
- **Fear of Stranded Assets:** There is a corresponding fear that LNG infrastructure overcapacity and long-term regasification contracts at German LNG ports will lead to stranded assets — while simultaneously delaying the phase-out of fossil fuels.

Conclusion:

- Promoting energy efficiency and renewable power is the **sustainable solution** to the shortfall in Russian gas.
- By investing in building efficiency alone, countries can save more gas than new LNG terminals offer.
- It may prove to be a major setback in the effort to **limit global heating.**

9.7. Japan to Flush Fukushima Wastewater

Why in News?

- Japan is expected to start flushing 1.25 million tons of wastewater from the embattled Fukushima nuclear power plant into the Pacific Ocean in 2023, as part of a USD 76-billion project to decommission the facility.
- The project received the Japanese cabinet's approval in 2021 and could take three decades to complete.

What is the Background?

- In March 2011, after a magnitude 9 **earthquake**, a **tsunami flooded the Fukushima Daiichi nuclear power plant in Okuma** and damaged its diesel generators.
- The loss of power **suspended coolant supply to reactors at the facility;** the tsunami also disabled backup systems.
- Soon, radioactive materials leaked from reactor pressure vessels, **exploded in the facility's upper levels,** and exposed themselves to the **ambient air, water, soil, and local population.**
- Winds also carried **radioactive material thrown up into the air into the Pacific.** Since then, the **power plant and its surrounding land have been uninhabitable.**
- The water that the Japanese government wants to flush from the plant was **used to cool the reactors,** plus rainwater and groundwater.
- It contains radioactive **isotopes from the damaged reactors and is thus itself radioactive.** Japan has said that it will release this water into the Pacific Ocean over the next 30 years.

What are the Concerns of Releasing Water?

- There is no known threshold below which radiation can be considered safe, therefore any discharge of **radioactive materials will increase the risk of cancer and other known health impacts** to those who are exposed.
- Water released can be poisonous to the fish and anyone who happens to live in the vicinity of the discharge point can be caught precarious.
- Tokyo Electric Power Company (TEPCO) **hasn't removed tritium** from the water because this is very difficult to do.
  - Tritium is **"easily absorbed by the bodies of living creatures"** and "rapidly distributed via blood.
- There were **other radionuclides in the water** that TEPCO's treatment procedure couldn't entirely remove.
  - These include **isotopes of ruthenium and plutonium,** which could persist for longer in the bodies of marine creatures and on the seafloor.

Why Flushing Instead of Treating Water?

- The TEPCO which operates the Fukushima facility, initially planned to treat the wastewater but because of lacking enough room for the water-tanks, it decided to release the water.
- Also, Japan cannot store water for longer than discharge it, because of **Tritium's half-life** (12-13 years).
  - **Half-life is the** time a radioactive material takes **for its quantity to be halved through radioactive decay.**

Way Forward

- A representative of the Pacific Islands Forum, the bloc of Oceania countries including Australia, has called it **"simply inconceivable" based on their experience with "nuclear contamination".**
- There should be more studies to understand the **precise composition of each tank before it is flushed** and for more details about TEPCO's water-treatment process.
- In addition, **the water can be stored for a longer period of time before discharging it,** due to Tritium's half-life of 12-13 years. Further, storing the water for a longer time will reduce the amount of other radioactive isotopes present in the water, thus reducing **its radioactivity**

9.8. Skyglow

Why in News?

- Recently, a new study has found that non-natural light had increased the brightness of Skyglow, by 9.2-10% every year between 2011 and 2022 with significant ecological, health and cultural implications.
- Researchers have analyzed a global database of what the dimmest star visible from a particular location is; the database had more than 51,000 entries submitted by citizen scientists.

What is Skyglow?

- The Skyglow, is an omnipresent sheet of light across the night sky in and around cities that can block all but the very brightest stars from view.
- The brightening of the night sky over inhabited areas because of streetlights, security floodlights and outdoor ornamental lights cause the Skyglow.
- This light floods directly into the eyes of the Nocturnal (active at night) and also into the skies and misleads their path.
- 'Skyglow' is one of the components of light pollution.

What is the Scenario of Skyglow?

Global

- The **Skyglow had brightened around 6.5% over Europe, 10.4% over North America**, and 7.7% over the rest of the world.
- The finding is significant because it disagrees with **satellite-based data, which has indicated that the rate of increase has been around 2% per year.**
- The discrepancy is **probably the result of the satellites being unable to 'sense' blue light** emitted by LEDs and to study light that is emitted parallel to the ground.

India:

- A 2016 study reported that 19.5% of India's population – the lowest fraction among G20 countries – experiences **a level of skyglow that would at least keep the Milky Way galaxy out of sight** and at most render "dark adaptation for human eyes" impossible.
- The effects **include stimulating the cone cells in human eyes**, which is possible only when an environment is considered to be well-lit.
- A 2017 study reported that between 2012 and 2016, **India's lit area increased by 1.07-1.09%** and the average radiance of "stably lit areas" – e.g., excluding wildfires – increased by 1.05-1.07%.

What are the Implications of Skyglow?

Wastes Energy and Money:

- Lighting that emits too much light or shines when and where it's not needed is wasteful. Wasting energy has huge economic and environmental consequences.

Disrupting the Ecosystem and Wildlife:

- Plants and animals depend on **Earth's daily cycle of light and dark rhythm to govern life-sustaining behaviors** such as reproduction, nourishment, sleep and protection from predators.
- Scientific evidence suggests that artificial light at night has negative and deadly effects on many creatures including

amphibians, birds, mammals, insects and plants.

- **Ex:** Lit beaches **deter sea turtles from coming ashore** to nest. **Skyglow keeps trees from sensing seasonal variations.**
- Clownfish eggs **don't hatch when exposed to artificial light at night,** killing the offspring.

Harming Human Health:

- Like most life on Earth, humans adhere to a **Circadian Rhythm** — our biological clock — a sleep-wake pattern governed by the day-night cycle. Artificial light at night can disrupt that cycle.
- A small 2009 review concluded that **circadian disruption** – which altered melatonin levels can cause – **increased the risk of breast cancer among night-shift workers by 40%.**
- The erasure of the night sky acts to erase Indigenous connection to the stars, **acting as a form of ongoing cultural and ecological genocide.**

What can be the Solutions?

- The researchers recommend light sources casting **light at an angle below the plane of the horizon,** capping the emissions of these sources and calibrating their output according to the total brightness at the spot being lit.
- Where lights cannot be turned off, **they can be shielded so that they do not shed light into the surrounding** environment and sky.
- The International Dark-Skies Association has **certified more than 130 'International Dark Sky Places',** where artificial lighting has been adjusted to reduce skyglow and light trespass. However, nearly all are in developed countries in the northern hemisphere.
- Less-developed regions are often both species-rich and, currently, less light-polluted, **presenting an opportunity to invest in lighting solutions before animals** there are seriously affected.

9.9. Concerns Over Aravali Safari Park

Why in News?

- Recently, some Environmental Activists have raised concerns over the 10,000-acre Aravali safari park Project proposed in Haryana.

What are the Key Points of Safari Park?

- This project will be the largest such project in the world. Currently the largest curated safari park outside Africa is in Sharjah, which opened in February 2022, with an area of about two thousand acres.



- It aims to boost tourism and employment opportunities for the local people.

What are the Concerns?

- The Aravalli safari project is being conceived and designed as a zoo safari and **not a natural jungle safari to see native Aravalli wildlife** in their natural habitat.
- Conservation of the **Aravallis does not even get a mention in the aims of the project** mentioned in the Proposition.
- Vehicular traffic and construction in the area, **the proposed safari park will also disturb the aquifers under the Aravalli** hills that are critical reserves for the water-starved districts.
  - These aquifers are interconnected and any disturbance or alterations in the pattern can significantly alter the groundwater table.
- The group has especially objected to the **'underwater zone' envisioned in the park since the site is a "water-scarce region".**
  - In Nuh district, the groundwater table is already below 1,000 feet at many places; the tube wells, borewells and ponds are running dry; Gurugram

district has many areas in the 'red zone'.

- The location falls under the category of **'forest', according to many orders by the Supreme Court and the National Green Tribunal**, and is protected under the **Forest Conservation Act 1972**. As such, cutting of trees, clearing of land, construction and real **estate development is prohibited on this land.**
    - The group also highlighted that the construction proposed by the Haryana tourism department in May 2022 would be illegal and further damage the already damaged Aravalli ecosystem.

How are Wildlife and Forests Protected in India?

- **The Wild Life (Protection) Act, 1972:**
    - It provides for stringent punishment for violation of its provisions. The Act also provides for **forfeiture of any equipment, vehicle or weapon that is used for committing wildlife offence(s).**
        - Protected Areas, viz National Parks, Sanctuaries, Conservation Reserves and Community Reserves have been created in the country covering important habitats to provide better protection to wildlife, including threatened species and their habitat.
- **Wildlife Crime Control Bureau (WCCB):**
    - WCCB coordinates with State/UTs and other enforcement agencies to **gather intelligence about poaching and unlawful trade** in wild animals and animal articles.
    - Alerts and advisories were issued by **WCCB on poaching and illegal trade of wildlife** to the concerned State and Central agencies for preventive action.
- **National Green Tribunal:**
    - It is a specialized judicial body equipped with expertise solely for the purpose of **adjudicating environmental cases in the country.**
- **The Indian Forest Act, 1927:**
    - It seeks to consolidate the **law relating to forests, the transit of forest produces and the duty that can be levied on timber** and other forest produce.
- **The Wild Life (Protection) Amendment Act, 2006:**
    - The Act provides for creating the National Tiger Conservation Authority and the Tiger and Other Endangered Species Crime Control Bureau.
- **The Forest (Conservation) Act, 1980:**
    - It provides a higher level of protection to the **forests and to regulate diversion of forest lands for non-forestry purposes. FC Act, 1980 –** Prior approval of the Central Government is essential for DE-reservation of forest lands and / or diversion of forest lands for non-forestry purposes.
- **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006:**
    - It has been enacted to recognize and vest the forest rights and occupation of forest land in forest-dwelling Scheduled Tribes and other traditional forest dwellers, who have been residing in such forests for generations.



10. Internal Security

10.1. Military Rule in Myanmar

Why In News?

- Recently, Military-ruled Myanmar marked 75 years of independence.

About

- Myanmar's junta chief Senior General Min Aung Hlaing announced that the elections would be held in August 2023

Internal Situation of Myanmar

- **Coup:** On 1 February 2021, Myanmar's military took power in a coup, abruptly halting the country's fragile transition toward democracy.
    - It justified the coup by alleging widespread fraud in the 2020 election – which Aung San Suu Kyi's National League for Democracy won by a landslide.
        - Independent observers have rejected such claims.
- In the weeks following the coup, huge numbers of people took to the streets for mass protests.

- **Army's Response:** The military responded with deadly violence and imposed a campaign of terror, raiding homes and arresting anyone suspected of supporting democracy.
    - As compared to 2021, the resistance took more violent forms and spread mostly to the North and Western parts of the country.
    - The regime has introduced further restrictions on political parties by barring them from speaking with international organisations or foreigners without permission from the electoral body.

Repercussions

- **Safety and protection:** The conflict constrained the movement of assistance, supplies and people, along with heightened security measures and denial of travel authorisations.
    - The safety and protection of humanitarian and front-line workers have also become a serious concern, as they are increasingly targeted and subject to arbitrary arrests and detentions.
- **Media freedom:** It was also curtailed and the Information Ministry imposed pre-broadcast censorship on local and foreign television
- **Refugee problem:** the ongoing conflict has resulted in **widespread displacement within and outside the country,** leading to the refugee problem in neighbouring countries, particularly India and Thailand.
- The **incidents of drug trafficking** and money laundering have also increased across bordering states, especially Thailand and India.
    - Finally, drug consumption has surged within the country, deteriorating the health and potential of the younger population.
    - There are also reports of Myanmar emerging as a human trafficking hub.
- The **environmental crisis: It** also loomed over the country as the military regime was unable to take initiatives to address the problems of climate change.
- **Economic:** The price of basic commodities increased. In addition, as a result of the Russia-Ukraine war, there was a rise in the cost of fertilisers leading to a shortage in the production of food in Myanmar.
    - The banking sector has seen a slowdown, with a number of private bank branches closing due to armed resistance and instability, as well as Military Council guidelines that restricted fund transfers and limited cash withdrawals.

- Since the coup, there have also been concerns over the shortage of electricity and frequent power cuts across the country.

Response of Global Community

- The UN's human rights office said that the military's actions might amount to war crimes and crimes against humanity.
- The United Nations Security Council adopted a resolution in December 2022 that demanded an immediate end to violence in Myanmar and urged the military junta to release political prisoners, including State Counsellor Aung San Suu Kyi.
    - In the 15-nation Security Council, 12 members voted in favour, and India, China and Russia abstained.
- The US included Myanmar on the list of 12 countries that are of "particular concern" for religious freedom violations.
    - They reported that the Christian minorities now face persecution similar to what the Rohingya have faced.

- The EU imposed several rounds of sanctions on both Min Aung Hlaing and military-controlled conglomerates and companies.
    - The EU also did not invite Myanmar to its meeting with ASEAN leaders.

- China maintained close relations with the military by providing both defence and economic assistance.

Impact on India

- **Incidents of cross-border movement**s of people and transport of illegal goods were also reported.
- It has had an adverse impact on **India's Act East policy,** which had since 2014 become more dynamic and result-oriented.
- It has n**egatively impacted India's initiative**s in terms of land outreach towards the vibrant economies of South East Asia and It has also **retarded development in the Northeast.**
- This is creating impediments to the Centre's overtures for future peace initiatives.
    - Also, reports of meddling by Chinese intelligence in supporting these militant groups are of concern and demand proactive action.
- India's strategy concerning the military coup in Myanmar comes at the expense of security concerns for the indigenous stakeholders in the NER

Options available for India

- There is a need for continued engagement, both formal and informal, with the warring factions in Myanmar.
- **Favourable bilateral relations with Bangladesh** offer an opportunity for opening a new axis of land-sea connectivity for promoting trade and commerce with Southeast Asia. There is a need to upgrade the multitude of land routes to the seaports in Bangladesh, from Assam, Meghalaya, Mizoram, and Tripura
- **Appropriate infrastructure** such as container depots, cold storage facilities and seamless highways will have to be developed on a war footing.
- **Indian manufactured good**s will have to be transported to the rail/roadheads in the Northeast like Guwahati for ready access to the seaports of Bangladesh.
- There is a need to raise an empowered department for monitoring and facilitating projects that support India's Act East policy, transcending all critical Ministries like Home, External Affairs, Industry, Surface-River Transport, etc.

Way Forward

- As the country crisis enters its third year, it is important that all stakeholders are at the table to establish a peaceful and long-term solution.
- The year 2023, therefore, will be a very significant due to likely scenarios that might unfold in Myanmar and their impact on South Asia as well as Southeast Asia.
- India needs to maintain a close look at the situation at the borders to ensure security.
    - The increase in violence could further lead to an influx of refugees, which could create an economic and social burden in the Northeastern states.

- Furthermore, the security of the border states is important given the increasing incidents of drug and arms trafficking.

- there is a need to ensure the continued economic development of Northeastern states.
  - Positive overtures by the Government of India will not only improve the security situation but reassure the locals that the region's interest is paramount and kickstart the stalling economic outreach to the east.

10.2. Self-reliance in the Defence & Nari Shakti

Why In News?

- India's spirit of **self-dependence in the military** and its **women's power** stood out during the Republic Day parade.

More about the news

- **Self-dependence in the military:**
  - The **Army's British-era 25-pounder guns** — which traditionally offered the symbolic 21-gun salute — were replaced by the **indigenous 105-mm Indian Field Guns (IFG).**
  - The Indian Army also showcased other Made-in-India equipment, including its main battle tank **Arjun**, the **NAG missile system,** the **K-9 Vajra-T gun system**, the **AKASH air defence system**, and the **Brahmos missile.**
- **Women's power:**
  - In a display of women's empowerment, the marching contingents of the **Indian Air Force** and the **Indian Navy** were both led by women officers for the first time.
  - **The Central Reserve Police Force** also presented an all-women marching contingent **in the parade while the Delhi Police** had an all-women pipe band comprising 35 women constables.
  - The **theme of nari shakti or female power** carried beyond the armed forces contingents into the parade's cultural tableaux as well.
- **Agniveers:**
  - In another first, the **Navy's contingent also included three women and six men Agniveers**.
    - They are the participants in the new Agnipath scheme for short-term recruitment to the armed forces which has faced violent protests from army aspirants in some States.

Major defence-related events in the recent period include

- **Defence equipments:**
  - The commissioning of the indigenously-designed and built aircraft carrier **INS Vikrant**;
  - The firing of an **SLBM (submarine-launched ballistic missile)** from the **INS Arihant**;
  - The radical decision to award the manufacture of a **military transport aircraft (C 295)** to a major private sector entity;
  - The induction of the made in India **Prachand LCH (light combat helicopter)**; and
  - The conclusion of a deal with Russia to manufacture a **Kalashnikov-type light weapon/small arms** in India.
- **Defence export:**
  - India's defence exports have **grown eight times in the last five years**.
  - India is exporting defence materials and equipment to **more than 75 countries of the world**.
  - In 2021-22, defence exports from India **reached $1.59 billion (about Rs 13,000 crore)**.

Women's participation in the India's armed forces

- **Evolution:**
  - The armed forces, traditionally thought of as a male bastion, have in the past 30 years seen success in the **induction of women**, though the journey has not been smooth.

- The **military opened its doors to women in 1992** when the **Air Force inducted its first batch.**

- **Limited combat roles:**
  - **In 2008,** a permanent commission was extended to women in streams of **Judge Advocate General (JAG)** and **Army Education Corps.**
  - **In 2015,** India also opened new **combat air force roles for women** as **fighter pilots.**
    - Women have been allowed in combat in the Air Force, but we are **yet to see women in combat roles in the army and navy.**
    - Even though women have been in the forces since 1992 all roles and career options are not offered to them.
  - **Women in NDA:**
    - After the Supreme Court paved the way for women to take the **National Defence Academy (NDA)** exam last year, the first batch of 19 cadets have joined the tri-services academy in Khadakwasla, Pune.

- **Significance of inducting women in defence forces in India:**
  - Women officers will be given **equal opportunity to contribute** to the nation.
  - The armed forces play an important role and need to **promote gender equality in the forces.**
  - Providing women with a more **challenging and fulfilling career**.
  - It would **change the "regressive mindset"** for not allowing women in the armed forces.
  - It will **challenge a strong stereotype** that assumes that domestic obligations rest solely on women.

10.3. 'Ops Alert' Exercise

Why In News?

- Recently, the **Border Security Force (BSF)** has started a seven-day **"Ops Alert" exercise**.

Key Points

- **About:**
  - Commenced on January 21 and will continue till January 28.
  - All along the Indo-Pak international border from **Sir Creek** (marshy area) to the **Rann of Kutch** in Gujarat and Barmer district of Rajasthan.
  - The BSF will carry out special operations in forward and depth areas as well as creeks and '**Harami Nalla**' as part of the exercise.
  - It has also planned **public outreach programmes** as part of the exercise.
- **Objectives:**
  - To **enhance security** along the India-Pakistan border in **Kutch district of Gujarat** and **Barmer in Rajasthan**.
  - Being carried out to "**thwart any ill designs of anti-national elements**" during the Republic Day celebrations.

- **Government Efforts:**
  - To enhance its security, "permanent vertical bunkers" of concrete are being constructed for the first time to station BSF troops right at the strategically significant Sir Creek and Harami Nalla marshy area.
  - The Union Home Ministry has sanctioned a ?50-crore fund for the construction of eight **multi-storey bunkers cum observation posts** in this area along the Bhuj sector in view of the constant infiltration of Pakistani fishermen and fishing boats in the area.

11. Geography & Disaster Management

11.1. Erosion along the Banks of River

Why In News?

- Massive erosion along the banks of the Ganga river has left hundreds of people homeless in West Bengal.

Major Reasons

- Flood is the most crucial reason for river bank erosion.
- Deforestation also causes River Bank Erosion.
- Humans extract excessive amounts of soil from the bank for their uses or they extract huge amounts of sand and gravel which help to hold back the soil. By doing this they accelerate river bank erosion.
- Key factors causing the river to be extremely unstable at many reaches are **'aggradation'** (raising of the river bed due to sediment deposition), intense '**braiding**' and **large water discharge.**
- Other than the natural process, like storms and sea level rise, anthropogenic issues like aquaculture, port construction and other developmental activities also lead to erosion.

Implications and Concerns

- The recurring incidents of river bank erosion have doubled the safety concerns of people.
- Apart from the loss of cropped areas, they fear that their residential areas might cave in.
- People have begun to move out of villages as erosion of the river has affected agricultural lands.
    - All these reasons are a major cause of migration
- The erosion of river banks is also having an **impact on education and employment in the area.**
    - Since locals have to keep shifting their homes, it has become difficult for them to continue their children's education
- The locals are mostly farmers and agricultural labourers, and it has become **difficult for them to sustain their livelihood** as large stretches of farmland have been swallowed up by the river.
- Protection of river banks from erosion is a problem in **flood-prone areas and involves a huge expenditure.**
- Many local bodies are also reluctant to use their own funds, expecting contributions from other government sources.

Initiatives

- The **grass vetiver,** whose scientific name is Chrysopogon Zizanioides, has been planted on the embankment of the Mundeswari River in the Hooghly district experimentally under the MGNREGA programme.
- The **XVth Finance Commission** had recommended the creation of a **National Disaster Risk Management Fund (NDRMF) and State Disaster Risk Management Fund (SDRMF)** comprising a Mitigation Fund at the National and State-levels (NDMF/SDMF), and a Response Fund at the National and State level (NDRF/SDRF) for the award period from 2021-22 to 2022-26.
    - The Commission has also made specific recommendations for 'Mitigation Measures to Prevent Erosion' under NDMF and **'Resettlement of Displaced People Affected by Erosion'** under NDRF.
- The **projects for flood management and control** are formulated and implemented by respective state governments/Union Territories from their own resources and as per their priority.
- The **Central Government provides financial assistance** to states/UTs for implementing some projects in critical areas. Central Govt. has been providing financial assistance through a scheme called **Flood Management Programme (FMP) since XI Plan.**

- The scheme since its inception has undergone several changes as per demands of states/UTs and also on account of various directions and policies of Govt. of India.

Suggestions and Way Forward

- There is a need to **develop suitable norms for mitigation measures** to prevent erosion and for both the Union and the State Governments to develop a policy to deal with the extensive displacement of people caused by coastal and river erosion.
- The **phase-wise solution** is **required for the mitigation of erosion** by including a **combination of measures** including strategic dredging, and protection of erodible bank materials with anchored bulkhead or tie-back sheet piles, spurs, toe and bank revetments.
- **Improvement of data quality and quantity** by extending rain, flow and sediment monitoring networks using state-of-the-art equipment and considering physical modelling to study severe and potential scour sites and their control have also been suggested by the experts.
- There is a need for adopting the holistic science of river management as well as comprehensive land use plans for vulnerable areas.
- There is a need to generate awareness among the people:
  - People should understand that this is the land of the river and the river needs space to play.

11.2. IMD Doppler Weather Radar Network

Why In News?

- The Keynote Address was delivered on the occasion of **148th Foundation Day of India Meteorological Department (IMD)** in New Delhi.

Minute of Address

- **Key Point:**
  - The **Doppler Weather Radar Network** will cover the **entire country by 2025 to** predict extreme weather events more accurately.
  - Recently, IMD has taken proactive steps to increase the Radar Network from mere 15 in 2013 to 37 in 2023 and will add 25 more in the next 2-3 years.
- **States:**
  - Four Doppler Weather Radar Systems in Jammu and Kashmir, Uttarakhand and Himachal Pradesh.
- **Climate Services:**
  - They are very important for short and long term planning and strategy development
  - IMD has already initiated these services in five major thrust areas of:
    - Agriculture,
    - Health,
    - Water,
    - Energy and
    - Disaster Risk Reduction
  - It has lined up plans to expand them through customization of products.

Doppler Weather Radar Network

- It is a **specialized radar** that uses the Doppler effect to produce velocity data about objects at a distance.
- It is designed to **improve precision in long-range weather forecasting** and surveillance using a parabolic dish antenna and a foam sandwich spherical radome.
- It has the equipment to **measure rainfall intensity, wind shear and velocity** and locate a storm centre and the direction of a tornado or gust front.
- It provides advanced information, enhancing the lead-time so essential for saving lives and property, in the event of natural disaster associated with severe weather.
- Division of Doppler Radars and their applications: Doppler radar can be divided into several different categories according to the wavelength which are L, S, C, X, K.

- **L Band Radars:** Operate on a wavelength of 15-30 cm and a frequency of 1-2 GHz.
  - Mostly used for clear air turbulence studies.

- **S-band radars:** They operate on a wavelength of 8-15 cm and a frequency of 2-4 GHz. Because of the wavelength and frequency, S-band radars are not easily attenuated. This makes them useful for near and far range weather observation.
    - The drawback to this band of radar is that it requires a large antenna dish and a large motor to power it.

- **C band radars:** They operate on a wavelength of 4-8 cm and a frequency of 4-8 GHz. Because of the wavelength and frequency, the dish size does not need to be very large.
    - This makes C band radars affordable for TV stations. The signal is more easily attenuated, so this type of radar is best used for short-range weather observation.
- **X-band radars:** They operate on a wavelength of 2.5-4 cm and a frequency of 8-12 GHz. Because of the smaller wavelength, the X band radar is more sensitive and can detect smaller particles.
    - It is used to detect thunderstorms and lightning.

- **K band radars:** They operate on a wavelength of .75-1.2 cm or 1.7-2.5 cm and a corresponding frequency of 27-40 GHz and 12-18 GHz. This band is split down the middle due to a strong absorption line in water vapour. This band is similar to the X band but is just more sensitive.

Significance

- The **Weather prediction accuracy** has increased by about 20-40% for different severe weather events forecast..
- The **warning and advisory services** are helping farmers and fishermen to improve their economy.
    - For example, the investment in the monsoon mission programme has resulted in return of 50 rupees for investment of each one rupee.
- The farmers below the poverty line specially have benefited immensely as **Agromet Advisories** at District and Block Levels are used effectively by crores of farmers during various stages of farming and the service is being expanded.
- Its helps the public, disaster managers and stakeholders to **initiate timely response action to mitigate** the disasters further.
- The forecasting of monsoons that are a lifeline to our food security has resulted not only in the **improvement of the economy** but also reducing the loss of lives due to monsoonal floods and droughts in the south Asian region.
- Such developments have helped in **minimizing loss of lives** from various extreme events like cyclone, heavy rain, thunderstorm, heat wave and cold wave etc. in recent years with its precise forecasting and timely warnings.

Way Ahead

- A **National Framework** should be created on priority to provide climate products and information for Sectoral applications.
- The disaster managers, general public and stakeholders under the **umbrella of National Disaster Management Plans**, guidelines, SOPs introduced by the present Government need to be vehemently followed so as to continue the rewards being reaped.

11.3. Project Sambandh

Why In News?

- **Project Sambandh** helping families of Army personnel who die in n**on-battle scenarios.**

About Project Sambandh

- It is an initiative of Retired army officer and **Shaurya Chakra awardee Colonel Vembu Shankar.**
- It is a **one-man philanthropic initiative** to **connect the Next of Kin (NoK) of 'physical casualties'** in the Army - was made in 2017.
- It was initially started as a 1,000-day endeavour to reach out to families of army officers who lost their lives under '**non-operational circumstances' such as physical ailments, accidents, and suicides**.
- **Features:** Project Sambandh has identified that the NoKs, particularly young widows and

children of the army personnel, face three kinds of challenges - financial, emotional, and social.

- **Objectives:** The main intent of the project was to bring awareness about the challenges the NoK of the physical casualties faced and assist them in connecting them to the Directorate of Indian Army Veterans, which provided several educational and social schemes to children and the widows of slain army personnel, he said.

11.4. Village Defence Committees

Why In News?

- Jammu and Kashmir L-G Manoj Sinha recently said **Village Defence Guards** would be **set up in the UT.**
    - The scheme to set up **VDGs in vulnerable areas of J&K** was approved by the **Union Ministry of Home Affairs.**

What is a JK Village Defence Committee?

- The VDCs were first formed in the erstwhile Doda district (now Kishtwar, Doda and Ramban districts) in mid **1990s as a force multiplier against militant attacks.**
- The VDCs have now been renamed as **Village Defence Guards (VDG)**. Like a VDC member, each VDG will be provided a gun and 100 rounds of ammunition.

How are VDGs different from VDCs?

- Both VDG and VDC is a **group of civilians provided guns and ammunition** to tackle militants in case of attack until the arrival of security forces.
- Under the new scheme, the persons leading the VDGs will be **paid Rs 4,500 per month by the government**, while others will get Rs 4,000 each.
- In the VDCs, only the Special Police Officers (SPOs) leading them were provided a monthly remuneration. The SPOs, the lowest rank in the J&K Police, used to be retired army, para military or police personnel.

Composition of VDCs

- A minimum of **10-15 ex-servicemen, ex-policemen and able-bodied local youth were enrolled in each VDC on a voluntary basis**. On an average, at least five of them were provided .303 rifles and 100 rounds each, through the district Superintendent of Police.

Need to set up VDCs

- The idea was taken from the **1965 and 1971 Indo-Pak wars,** when the government armed ex-servicemen and abled-bodied youth in villages along the border to guard against infiltration of Pakistani spies.
- The militancy that began in Kashmir in the early 1990s had spread to the adjoining Doda district by mid 1990s.
- As the killings increased, prompting the migration of Hindus from villages to nearby towns, the Home ministry in 1995 decided to set up the VDCs so as to stop this exodus, coming after Kashmiri Pandits were forced to flee the state in the early 1990s.
- Later, the scheme was expanded to other areas of the Jammu division as militants extended their activities to Udhampur, Reasi, Rajouri, Poonch, Kathua and Samba districts.

Controversies

- Along with the successes, the **VDCs also faced allegations of human rights** violations and other crimes, including murder, rape and extortions.
- In 2008, the Supreme Court directed the state government to stop supporting and providing alms to **Salwa Judum (anti-Naxalite militia mobilized by the Chhattisgarh State)**. According to SC, the state government has **no right to provide arms to a civilian and allow him to kill someone else.**

12. History- Art & Culture

12.1. Saansad Khel Mahakumbh

Why In News?

The Prime Minister of India inaugurated the second phase of Saansad Khel Mahakumbh 2022-23.

About Saansad Khel Mahakumbh

- Saansad Khel Mahakumbh has been organised in Basti district by Shri Harish Dwivedi, Member of Parliament from Basti since 2021.

- The Khel Mahakumbh organises various competitions in both indoor and outdoor sports like wrestling, kabaddi, kho kho, basketball, football, hockey, volleyball, handball, chess, carrom, badminton, table tennis etc.
    - Apart from these, competitions in essay writing, painting, rangoli making etc are also organised during the Khel Mahakumbh.
- **Significance:** The Khel Mahakumbh is a novel initiative that provides an opportunity and a platform for the youth of District Basti and neighbouring areas to showcase their sporting talent, and motivates them to take sport as a career option.
    - It also endeavours to inculcate the spirit of discipline, teamwork, healthy competition, self-confidence and nationalism among the youth of the region.

12.2. Harvest Festivals of India

Why In News?

- India is popularly known as the land of festivals and on the 14th of January different parts of the country celebrate harvest festivals under different names.

More about the Harvest Festivals of India

- **Lohri:**
    - **Significance:**
        - Lohri, the **popular North Indian festival**, marks the **end of the winter solstice and the beginning of longer days**.
        - Lohri celebrates the harvest of rabi crop in North India
    - **Time of celebration:**
        - It is celebrated every year during the month of Paush, a day before Makar Sankranti - usually on January 13th.
    - **Regions:**
        - It is observed by both Hindus and Sikhs in the states of Punjab, Haryana, Himachal Pradesh, and the union territory of Jammu and Kashmir.
- **Makar Sankranti:**
    - **About:**
        - Makar Sankranti is the **first Hindu festival** that is celebrated with great pomp and enthusiasm across India and **usually takes place in January.**
    - **Significance:**
        - It is a major harvest festival celebrated by Hindus **across India** but different states **celebrate the festival under different names**, traditions and festivities.
        - Makar Sankranti marks the end of winter as well as the beginning of longer days on account of the sun's northward journey.
            - This period is also known as Uttarayan on this account and is considered to be very auspicious.
    - **Different Names:**

        - It is called Makara Sankranti and also Poush sôngkr?nti in Maharashtra, Goa, Andhra Pradesh, West Bengal, Karnataka and Telangana.
        - It is called Sukarat in central India.
    - **Kite Flying:**
        - Another customary and popular practice associated with this festival is kite flying and in Gujarat's Ahmedabad, since 1989, the day has been observed as **International Kite Festival.**
- **Magh Bihu:**
    - **Significance:**
        - A significant **Assamese festival**, Magh Bihu marks the end of the harvesting season in the month of Magh **(between January and February)**.
        - Also known as **Maghor Bihu**, it is celebrated to mark a slight shift in the earth's rotational axis that brings in the end of chilly winters and the beginning of spring.
    - **Characteristics:**
        - This is one of the three Bihu celebrated by the community and the term Bhogali Bihu is derived from the word **Bhog**, which refers to eating and enjoyment.
        - The eve of the Bhogali Bihu is called the **Uruka**, the last day of the lunar month of Pousha.
        - The festival is also **marked by bonfires**, made of **green bamboo, firewood, hay, and dried banana leaves**.
    - **Traditional games:**
        - People also play traditional Assamese games like tekeli bhonga (pot-breaking) and buffalo fighting. They also pray to ancestral gods for their blessings.
    - **Delicacies:**
        - People also make delicious rice cakes known by various names such as **Sunga Pitha, Til Pith and coconut laddoos**.
- **Pongal:**
    - **About:**
        - One of India's most well-known festivals, Pongal is widely observed by the **Tamil population around the world**.
        - It is one of the biggest harvest festivals, along with Makar Sankranti.
    - **Significance:**
        - It is celebrated in the Tai month of the Tamil solar calendar.
        - The four-day event, dedicated to the Sun God, marks the beginning of Uttarayan, the sun's journey northward.
        - Spread over four days, the festival begins with Bhogi Pongal which is followed by **Surya Pongal, then Maattu Pongal, and Kanum Pongal.**
            - Each of the days has a unique significance with the second day being more most important day.
    - **The Sweet dish-Pongal:**
        - This festival is named after the traditional sweet dish **Pongal ("boiling over")** made with rice boiled in milk with jaggery.
        - The origin of the Pongal dish can be traced back to the Chola period; it appears in a lot of texts and inscriptions.
        - Some Hindu temple inscriptions from the Chola to Vijayanagara Empire periods are also known to include detailed recipes.
    - **Celebrations:**
        - Celebrations also involve decorating cows, ritual bathing, making rice powder-based kolam artworks, offering prayers, and meeting friends and relatives.

Significance of the Harvest Festival

- These festivals are primarily celebrated to mark the beginning of the harvesting season in the country and is probably the only one that is celebrated in every region of India, on the same day, but **in different manners and names.**
- **Sun's northward journey:**

- It is associated with the sun's northward journey.

- **A Harvest festival is a celebration of the food grown on the land:**
  - Given the difference in climate and crops around the world, harvest festivals can be found at various times at different places.
- **Harvest festivals in Asia:**
  - It includes the Chinese Mid-Autumn Festival, one of the most widely spread harvest festivals in the world.

12.3. Miniature Stupas of Nalanda

Why In News?

- Recently, the Archeological Survey of India (ASI) has discovered two **1200-year-old miniature votive stupas.**

More about the news

- **Location:**
  - **Miniature stupas** have been discovered near Sarai Tila mound within the premises of 'Nalanda Mahavihara', a world heritage site in Nalanda district in the state.
- **About:**
  - A Stupa is a **hemispherical structure which symbolizes the burial mound of Buddha**. It rose to prominence after the a**dvent of Buddhism and peaked during Ashoka's reign**. Stupas evolved as **Chorten in Tibet and pagodas in East Asia.**
  - Archeologists suggest that the stupas must be around 1200 years old.
- **Miniature stupa building:**
  - Beginning in the 7th century CE in India, small miniature terracotta stupas became popular as votive offerings.
  - Votive is the form of the stupa, with its distinctive domelike drum, originating in eight cylindrical structures in which the Buddha's relics were placed after his death.

About Nalanda Mahavihara site complex

- **History:**
  - Nalanda was an acclaimed **Mahavihara, a large Buddhist monastery** in the ancient kingdom of Magadha (modern-day Bihar) in India.
  - It is considered by historians to be the world's very first residential university and among the greatest centers of learning in the ancient world.
  - It engaged in the organized transmission of knowledge over an uninterrupted period of 800 years.
- **Establishment:**
  - Nalanda was established during the Gupta Empire era and was supported by numerous Indian and Javanese patrons – both Buddhists and non-Buddhists.
- **Archaeological remains:**
  - The Nalanda Mahavihara site comprises the archaeological remains of a monastic and scholastic institution dating from the 3rd century BCE to the 13th century CE.
  - It includes stupas, shrines, viharas (residential and educational buildings) and important art works in stucco, stone and metal.
- **Significance:**
  - The historical development of the site testifies to the development of Buddhism into a religion and the flourishing of monastic and educational traditions.

12.4. Thiruvalluvar Day

Why In News?

- Union Home and Cooperation Minister Shri Amit Shah has extended his warm greetings to the people on **Thiruvalluvar day**.

About

- Thiruvalluvar Day was **first celebrated on May 17 and 18 in 1935.**

- In the present time, it is usually observed either on January 15 or 16 in Tamil Nadu and is a part of Pongal celebrations.

Who is Thiruvalluvar?

- He is a poet, and philosopher
- He is regarded as a cultural icon by Tamils.
- Very little is known about his family background, religious affiliation, or birthplace.
    - It is believed that he used to live in the town of Mylapore, which in today's time is a neighborhood in Chennai.
        - Some accounts say that he lived from the 8th to the 9th century.
        - Tamil orator and writer and father of the Pure Tamil movement, **Maraimalai Adigal** deduced 31 BC as the birth year of Valluvar, while **Czech scholar** in Indian literature and linguistics, Kamil Zvelebil inferred that Thiruvalluvar lived around 500 AD.

Works

- Thiruvalluvar's primary work Thirukkural contains 1330 couplets (kurals) that are divided into 133 sections of 10 couplets each.
    - The text is divided into three parts with teachings on dharma, artha, and kama (virtue, wealth and love).

Social significance

- In the early 16th century, a temple was built within the Ekambareswarar temple complex in Mylapore and it was dedicated to Thiruvalluvar.
- In 1976, a temple memorial called Valluvar Kotam was built in Chennai and houses one of the largest auditoriums in Asia.
- Another statue of the legendary Tamil poet was unveiled in Ulsoor, near Bengaluru, in 2009.
- A statue of Valluvar was also erected outside the School of Oriental and African Studies in Russell Square, London.

12.5. Parshuram Kund Festival

Why In News?

- The **Parshuram Kund Festival** is to be held in Arunachal Pradesh from the 12th to the 16th of January.

About Parshuram Kund Festival

- Parshuram Kund is a Hindu pilgrimage center situated at Telu Shati/Tailung area of the Mishmi plateau in the lower reaches of the Lohit River in Arunachal Pradesh.
    - The hills district comprising Mishmi inhabited areas.
- It is a famous holy place of worship that is steeped in Hinduism and is much venerated by them.
- It falls within the Kamlang reserve forests and is surrounded by dense forests.
- **Parshuram Mela:** The focal point of Makar Sankranti which falls on 14th and 15th of January is the Parshuram kund Mela which is celebrated in Telu Shati/Tailung area in Lohit District and which is a regular event since 1972.

12.6. Ahom Burial Mounds in Assam

Why In News?

- Recently, the Union Government has decided to **nominate Assam's Charaideo Maidams** for the **UNESCO World Heritage Centre**.

About

- **Nomination:**
    - It has been selected from **among 52 sites** across the country seeking the World Heritage Site tag.
- **Charaideo Maidams:**
    - Assam's Charaideo Maidams are the **Ahom equivalent** of the ancient Egyptian **pyramids**.
    - The maidams represent the **late medieval (13th-19th century CE)**

mound burial tradition of the **Tai Ahom** community in Assam.
    - The Charaideo Maidams **enshrine the mortal remains** of the members of the Ahom royalty, who used to be **buried with their paraphernalia.**
    - Out of **386 Maidams** or Moidams explored so far, 90 royal burials at Charaideo are the best preserved, representative of and the most complete examples of mound burial tradition of the Ahoms.
    - **After** the 18th century, the Ahom rulers adopted the **Hindu method of cremation** and began entombing the cremated bones and ashes in a Maidam at Charaideo.
- **Significance:**
    - There is **currently no** World Heritage Site in the category of **cultural heritage in the northeast.**
    - The nomination of the Charaideo Maidams has attained significance at a time when the country is celebrating the 400th birth anniversary of Lachit Barphukan.
- **Ahom Kingdom:**
    - The Ahom dynasty was **founded by Chao Lung Siu-Ka-Pha** in 1253.
    - The Ahom rule lasted for about **600 years** until the **British** annexed Assam in 1826.
    - **Charaideo,** more than 400 km east of Guwahati, was the first capital of the Ahom dynasty.

13. Awards

13.1. Atal Samman Award

- Prabhu Chandra Mishra has been awarded Atal Samman Award for his excellence in field of science & research.
- His area of work is Stem Cell & Regenerative Medicine in infertility especially when IVF also fails. The diseases like premature ovarian failure, thin endometrium, Asherman syndrome Etc have shown satisfactory results with body's own cells.
- PRP & bone marrow-derived StemCells Research have shown promising hope for these patients/ couples who are struggling for their own child's.

13.2. Golden Globe Awards 2023

- Composer MM Keeravani, along with singers Kaala Bhairava and Rahul Sipligunj, has won the Golden Globe for Best Original Song, for the track "Naatu Naatu," from epic drama "RRR".
- "Naatu Naatu," a dance number featuring stars Jr NTR and Ram Charan, was competing against Taylor Swift's "Carolina" from Where the Crawdads Sing, "Ciao Papa" from Guillermo del Toro's Pinocchio, Lady Gaga's "Hold My Hand" from Top Gun: Maverick, and "Lift Me Up" from Black Panther: Wakanda Forever, performed by Rihanna.

13.3. Padma Awards 2023

- The Government of India has announced the Padma Awards 2023 Winners List.
- Padma Awards are India's highest civilian honors after the Bharat Ratna, seeking to "recognize achievements in all fields of activities or disciplines where an element of public service is involved".
- For the year 2023, the President has approved conferment of 106 Padma Awards including 3 duo cases (in a duo case, the Award is counted as one) as per list below. The list comprises 6 Padma Vibhushan, 9 Padma Bhushan and 91

Padma Shri Awards. 19 of the awardees are women and the list also includes 2 persons from the category of Foreigners/Non Resident India (NRI)/Person of Indian Origin (PIO) /Overseas Citizen Of India (OCI) and 7 Posthumous awardees.

Padma Vibhushan Winners List

S. No	Name	Field	State / Country
7	Shri S L Bhyrappa	Literature & Education	Karnataka
8	Shri Kumar Mangalam Birla	Trade & Industry	Maharashtra
9	Shri Deepak Dhar	Science & Engineering	Maharashtra
10	Ms. Vani Jairam	Art	Tamil Nadu
11	Swami Chinna Jeeyar	Others – Spiritualism	Telangana
12	Ms. Suman Kalyanpur	Art	Maharashtra
13	Shri Kapil Kapoor	Literature & Education	Delhi
14	Ms. Sudha Murty	Social Work	Karnataka
15	Shri Kamlesh D Patel	Others – Spiritualism	Telangana

Padma Bhushan Winners List

S. No	Name	Field	State / Country
1	Shri Balkrishna Doshi **(Posthumous)**	Others – Architecture	Gujarat
2	Shri Zakir Hussain	Art	Maharashtra
3	Shri S M Krishna	Public Affairs	Karnataka
4	Shri Dilip Mahalanabis **(Posthumous)**	Medicine	West Bengal
5	Shri Srinivas Varadhan	Science & Engineering	United States of America
6	Shri Mulayam Singh Yadav **(Posthumous)**	Public Affairs	Uttar Pradesh

13.4. Hariprasad Chaurasia Lifetime Achievement Award

- Hindustani vocalist Padma Vibhushan, **Dr. Prabha Atre** was conferred with the Pandit Hariprasad Chaurasia Lifetime Achievement Award at the hands of Maharashtra Chief Minister Eknath Shinde.
- Prabha Atre (born 13 September 1932) is an Indian classical vocalist from the Kirana gharana. She has been awarded all three of the Padma Awards by the Government of India. Her music training was in the Guru-shishya tradition.

13.5. Most distinguished scientist of the year award 2022

- R Vishnu Prassad was awarded "The most distinguished scientist of the year 2022".
- Prassad, a scientist with 69 patents has been honored with the Indian Achievers Award as the most distinguished scientist of the year.
- The award, which recognizes individuals for their outstanding contributions in various fields, including culture, science, sports, and innovation.
- He contributed to smart cities, solid waste management, large-scale water treatment, Swachh Bharat Abhiyan, was selected by a jury headed by Justice Gyan Sudha Mishra.

14. Government Initiatives

14.1. RBI- Integrated Ombudsman Scheme

Why In News?

- The Reserve Bank of India (RBI) released the Annual Report of the **Ombudsman Schemes** for April 01, 2021 – March 31, 2022.

About Integrated Ombudsman Scheme

- The Scheme was framed by the Reserve Bank in exercising the powers conferred on it under **Section 35A of the Banking Regulation Act, 1949.**
- The Scheme integrates the existing three Ombudsman schemes of RBI namely,
    - the Banking Ombudsman Scheme, 2006;
    - the Ombudsman Scheme for Non-Banking Financial Companies, 2018; and
    - the Ombudsman Scheme for Digital Transactions, 2019.

- In addition to integrating the three existing schemes, the Scheme also includes under its ambit Non-Scheduled Primary Co-operative Banks with a deposit size of ?50 crore and above.
- The Scheme adopts the **'One Nation One Ombudsman**' approach by making the RBI Ombudsman mechanism jurisdiction neutral.

Some of the salient features

- A Centralised Receipt and Processing Centre has been set up at RBI, Chandigarh for receipt and initial processing of physical and email complaints in any language.
- The responsibility of representing the Regulated Entity and furnishing information in respect of complaints filed by customers against the Regulated Entity would be that of the Principal Nodal Officer in the rank of a General Manager in a Public Sector Bank or equivalent.
- The Regulated Entity will not have the right to appeal in cases where an Award is issued by the ombudsman against it for not furnishing satisfactory and timely information/documents.

14.2. Advance Authorization Scheme (AAS)

Why In News?

- Recently, the directorate general of foreign trade (DGFT) said it has **simplified the process of Levying Composition fees** in case of extension of the Export Obligation Period under the **Advance Authorisation Scheme (AAS)**.

Advance Authorisation Scheme (AAS)

- **About:**
  - AAS allows **duty free import** of inputs, which are physically incorporated in an export product.
  - In addition to any inputs, packaging material, fuel, oil, and catalyst which is consumed / utilized in the process of **production of export products**, is also allowed.
  - The quantity of inputs allowed for a given product is **based on specific norms** defined for that export product, which considers the waste generated in the manufacturing process.
  - DGFT provides a sector-wise list of **Standard Input-Output Norms** (SION) under which the exporters may choose to apply.
  - Alternatively, exporters may apply for **their own ad-hoc norms** in cases where the SION does not suit the exporter.
  - Advance Authorisation covers manufacturer exporters or merchant exporters tied to supporting manufacturer(s).
- **Prerequisites for Applying:**
  - To apply for an Advance Authorisation scheme, an **Import-Export Code** (IEC) is required.
  - Other prerequisites are mentioned in the Chapter 4 of Foreign Trade Policy and Handbook of Procedures.

14.3. DILRMP

Why in News?

- Recently, the Union government has informed the **Supreme Court that significant progress** has been made in the **computerisation of land ownership records**, as **cadastral maps of 35% of over six lakh villages** have so far been geotagged.

About

- **Cadastral Maps:**
  - **They are a digital form of land records** that show all boundaries of different parts of land pieces based on their length, area, and direction.
- **Digital India Land Record Modernisation Programme (DILRMP):**
  - It is a Central Sector scheme that has been extended to 2023-24, to complete its original targets as well as

expand its ambit with a slew of new schemes.
    - In 2008, **two schemes viz**, Computerisation of Land Records (CLR) and Strengthening of Revenue Administration and Updating of Land Records (SRA&ULR) were merged into a modified scheme named DILRMP.
    - It is implemented by the Department of Land Resources under the Ministry of Rural Development.
    - The **DILRMP has 3 major components** - (a) Computerization of land record (b) Survey/re-survey (c) Computerization of Registration.

14.4. Aspirational Block Programme (ABP)

Why In News?

- The Prime Minister recently launched the government's **Aspirational Block Programme (ABP).**

About

- The Programme aimed at **improving performance of blocks** lagging on various development parameters.
- It was announced in the **Union Budget 2022-23**.
- It will initially cover 500 districts across 31 states and Union Territories, with over **half of these blocks located in six states** – Uttar Pradesh, Bihar, Madhya Pradesh, Jharkhand, Odisha and West Bengal.
- The ABP is based on the **Aspirational District Programme (ADP)**.

Aspirational District Programme (ADP)

- The Aspirational Districts Programme (ADP) was **launched in 2018** which aims to quickly and effectively **transform 112 most under-developed districts across the country.**
- The **broad contours of the programme** are **Convergence** (of Central & State Schemes), **Collaboration** (of Central, State level Nodal Officers & District Collectors), and **Competition** among districts through monthly delta ranking; all driven by a mass movement.
- With States as the main drivers, this program **focuses on the strength of each district, identifying low-hanging fruits for immediate improvement** and measuring progress by ranking districts on a monthly basis.
- The ranking is based on the incremental progress made across **49 Key Performance Indicators (KPIs)** under **5 broad socio-economic themes** - Health & Nutrition, Education, Agriculture & Water Resources, Financial Inclusion & Skill Development and Infrastructure.
- The Government is committed to raising the living standards of its citizens and ensuring inclusive growth for all – **"Sabka Saath Sabka Vikas aur Sabka Vishwas"**.

14.5. PM Garib Kalyan Anna Yojana

Why in News?

- Recently, the Union government has named its **new free foodgrain scheme under the National Food Security Act, 2013**, as '**Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)**'.

More about the scheme

- **About:**
    - The new integrated food security scheme for providing **free food grains to Antodaya Anna Yojna (AAY) & Primary Household (PHH) beneficiaries**, is rolled out from 1st January 2023.
    - The integrated scheme is **expected to strengthen the provisions of NFSA, 2013** in terms of **accessibility, affordability and availability** of foodgrains for the poor.
- **Free foodgrains for 2023:**
    - Keeping in view welfare of the beneficiaries and in order to maintain uniformity across the States, free foodgrains will be provided under PMGKAY for the year 2023 to all PHH and AAY beneficiaries, as per entitlement under NFSA.
- **Ministry:**
    - The **Ministry of Consumer Affairs, Food and Public Distribution** and state-run **Food Corporation of India (FCI)** along with **state governments** will look out for smooth roll out of the new scheme.

15. Persons & Appointments

15.1. Siddharth Sharma

- The philanthropic arm of the Tata group and largest shareholder in the group holding company, Tata Trusts named Siddharth Sharma, as its CEO and Aparna Uppaluri, as chief operating officer.

15.2. Santhi Kumari

- Senior IAS Officer A Santhi Kumari has been appointed as the new Chief Secretary of Telangana.
- Santhi Kumari took charge as the first women Chief Secretary of the State.
- She was appointed a day after the former CS Somesh Kumar was relieved by the state government.

15.3. Chetan Sharma

- Chetan Sharma was reappointed as the chairman of the senior selection committee, exactly two months after his entire panel was disbanded by the BCCI for the Indian team's semifinal exit in the T20 World Cup. Salil Ankola, Shiv Sunar Das, Subroto Banerjee and Sridharan Sharath are new members of the selection committee.

15.4. BV Doshi

Why In News?

Celebrated Indian architect Dr Balkrishna Vithaldas Doshi has died at the age of 95.

About BV Doshi

- He was an urban planner and educator and was one of the most distinguished Indian minds in the world of architecture.
- In the modern architecture that emerged in India after Independence, he epitomised the **more artistic or romantic approach**.

Works and Projects

- His works ranged from small houses, institutional buildings and offices to large housing projects, campuses and townships.
- Many of his projects such as the School of Architecture at CEPT, the Institute of Indology, Hussain Doshi Gufa, his own office called Sangath, his own home and Tagore Hall have become iconic.
- His style of architecture — an amalgam of **European modernist, brutalist architecture with Indian sensibilities** — won many hearts.

Awards and Honors

- He was conferred Aga Khan Award for Architecture in 1995.
- He was awarded France's highest honour for the arts, the Officer of the Order of Arts and Letters, in 2011.
- In 2018, he received the Pritzker Architecture Prize, considered one of the most prestigious prizes in the field of architecture, becoming the first Indian architect to receive the honour.
- BV Doshi was conferred upon the Padma Bhushan, the third-highest civilian honour in India, in 2020.
- He won the gold medal by the Royal Institute of British Architects in 2022.

Literary Works

- Balkrishna Doshi: Writings on Architecture and Identity (2019),
- and Balkrishna Doshi: Architecture for the People (2019).

16. Important Days

16.1. 4th January – World Braille Day

- International World Braille Day is celebrated yearly in recognition of the birth of Louis Braille, born on January 4th, 1809.
- Braille's gift to the world has brightened the lives of millions of people around the world who are blind or visually impaired, and they benefit from his work every day.

16.2. 5th January – Guru Gobind Singh Jayanti

- Sikhs commemorate Guru Gobind Singh Jayanti as a holiday. The tenth Guru of the Sikhs, Guru Gobind Singh Ji, is remembered on this day. At places of worship known as Gurudwaras, special prayer gatherings are held on this day.

16.3. 9th January – Pravasi Bharatiya Divas

- Pravasi Bharatiya Divas is a celebratory day observed on 9 January by the Republic of India to mark the contribution of the overseas Indian community towards the development of India.
- The day commemorates the return of Mahatma Gandhi from South Africa to Mumbai on 9 January 1915. To remember the favors and contributions made by Non-Resident Indians to the welfare and development of the nation.

16.4. 10th January – World Hindi Day

- January 10th marks the first World Hindi Conference that took place in 1975, in Nagpur, Maharashtra. In 2006. 122 delegates from 30 countries attended, and then Prime Minister Manmohan Singh declared January 10 as World Hindi Day. An objective of the occasion is to present Hindi as an international language.

16.5. 12th January – National Youth Day

- National Youth Day 2023: It is celebrated on 12 January and is also known as Rashtriya Yuva Diwas.
- The day is observed to commemorate the birth anniversary of Swami Vivekananda, one of the greatest philosophers and spiritual leaders.

Theme of National Youth Festival

- The Centre said the festival is held to provide exposure to youths at a national level and this year's theme for the four-day programme is "Viksit Yuva – Viksit Bharat (Developed Youth – Developed India)".

16.6. 15th January – Indian Army Day

- Indian Army Day is been celebrated annually at all headquarters of the Army Command to honor the Indian soldiers.
- These brave men set the most outstanding example of selfless service and brotherhood, and above all, undying love for their country. Indian Army Day is celebrated on January 15 every year.

16.7. 24th January – National Girl Child Day

- India is celebrating National Girl Child Day on Tuesday (January 24).
- It is an initiative undertaken by the ministry of women and child development with the objective to provide support and opportunities to the girls of India.
- It was initiated in 2008 by the Ministry of Women and Child Development and the government of India, to spread public awareness about inequities that girls face in Indian society.

National Girl Child Day 2023: Theme

- The Ministry of Education will host a celebration with the theme "Self Defence Training for Girls."
- According to the women and child development ministry, the main objective of National Girl Child Day is to raise awareness and tackle the issues of inequalities that girls face in the country and enlighten everyone about the rights of a girl child.

16.8. 24th January – International Day of Education

- International Day of Education is celebrated on 24 January to raise awareness about the importance, the role of education for peace and development.
- If a country wants to achieve gender equality, and break the cycle of poverty, it is possible with inclusive, equitable quality education, and lifelong opportunities for all.

Theme of International Day of Education 2023

- The fifth International Day of Education will be celebrated on 24 January 2023 under the theme "to invest in people, prioritize education".

16.9. 25th January – National Voters Day

- In order to encourage more young voters to take part in the political process, the Government of India has decided to celebrate January 25 every year as "National Voters' Day". It has been started on 25 January 2011 to mark Commission's foundation day.

Theme of National Voters Day 2023

- The theme for this year's NVD, 'Nothing Like Voting, I Vote for Sure' is dedicated to voters which conveys individual's feeling and aspiration towards participation in the electoral process through power of their vote.

16.10. 25th January – National Tourism Day

- India's National Tourism Day is celebrated on January 25. It was established by the Indian government to raise awareness of the importance of tourism for the country's economy.

Theme of National Tourism Day 2023

- The theme of National Tourism Day 2023 is not revealed yet. But like every year, the theme will focus on encouraging tourism in India. The theme for National Tourism day 2022 was 'Rural and Community-Centric Tourism'

16.11. 26th January – Republic Day

- On this day, on 26th January 1949, the Constitution of India was made and adopted by the Indian Constituent Assembly.
- This is one of the most important days in January as it is also a gazetted holiday. This replaced the Government of India Act 1935 as the governing document of India, thus turning the nation into a republic separate from British Raj.



17. Miscellaneous

17.1. Nilgiri Biosphere Reserve

Why In News?

- Recently, it has been observed that the Asian elephant has lost most of their optimal habitat in the Nilgiri Reserve.

About Nilgiri Biosphere Reserve

- It is a Biosphere Reserve in the Western Ghats and Nilgiri Hill ranges of Southern India.
- It is the first biosphere in India.
- The reserve encompasses a total of 5,520 km² in the states of Karnataka (1,527 km²), Kerala (1,455 km²), and Tamil Nadu (2,537 km²).
- **Biodiversity:** The NBR is rich in biodiversity and has over 100 species of mammals, 350 species of birds, 80 species of reptiles, 31 species of amphibians, 39 species of fish, 316 species of butterflies, and numerous other invertebrates.
    - It is also home to around 3,300 plants and 175 orchid species of which 1,232 and 8 are endemic, respectively.
- It has been a **UNESCO World Heritage Site** since July 1, 2012.

17.2. Virovore

Why In News?

Researchers claimed that the first known "virovore" has been found.

- Virovore is an **organism that eats viruses.**

About 'Virovore'

- Scientists found a species of **Halteria** - which are **microscopic ciliates** that populate freshwater throughout the world.
- They can eat huge numbers of infectious chloroviruses.
- "They're made up of really nucleic acids, a lot of nitrogen, and phosphorus.
- These organisms can sustain themselves with viruses, consuming many and growing in size

17.3. Hakku Patra

Why In News?

- The Prime Minister symbolically distributed **Hakku Patra (land title deeds)** to five families of the Banjara (Lambani) community at an event organised by the state Revenue Department at Malkhed, in the Kalaburagi district of Karnataka.
- The Banjaras are a key scheduled caste sub-group in Karnataka, although they are considered to be a tribal group in terms of the lives they lead.

What are hakku patras or title deeds?

- A title deed is a property ownership document, and the bearer of the document owns the land.
- The title deeds enable owners to avail of bank loans with the said document.
- They will also be eligible to buy or sell land to which the title deed is granted by the government.

17.4. Shadow Banning

Why In News?

- Elon Musk used the term 'Shadow banning' in the context of the so-called Twitter Files, internal company documents that were released with Musk's authorization.

About 'Shadow banning'

- The term often refers to stealth actions by social media platforms to limit a post's visibility.

- The term shadow ban traces to at least 2012 when Reddit users accused the platform's administrators of banning a link to a Gawker article while publicly championing transparency.
- The meaning of the term has evolved. Now it can describe users' general discontent about not getting the attention they believe they deserve on social media, even if they don't necessarily think a platform has engaged in any clandestine moderation.

Concerns

- Private companies are allowed to make their own rules about content moderation, but for advertisers, users, and free speech champions, true shadow bans are problematic because they enforce unarticulated rules secretly
- They allow a company to avoid taking responsibility for moderating content while quietly manipulating its flow. And those who are silenced have no process for emerging from the shadows.

17.5. Pashu Sakhi Project

Why In News?

- The doctor didis (friend of the animals) creating social capital in rural Jharkhand under the **Pashu Sakhi project.**

About Pashu Sakhi project

- Pashu Sakhi is a **Community Animal care Service Provider (CASP)** which will **enable the last mile coverage** in rural areas where **clinical services for livestock** are not available on time or are expensive to afford for the rural poor.
- The project was conceived under the **National Rural Livelihood Mission**, with the objective of building a line of community resource persons.
    - The **World Bank** funds it.
- The **pashu Sakhi model** under **JOHAR** had been selected by the **UN'sFood and Agriculture Organization and the International Food Policy Research** Institute as one of the top eight global best practice models for farmer service delivery.
- **Features:** Sakhi project that trains village women in basic livestock care, has changed the way that women are seen as well as how domestic animals are reared
    - They advise farmers about health check-ups for their livestock, vaccinations, de-worming, hygiene, breeding, feeding, and the management of animal waste.

17.6. Blindness control policy

Why In News

- Rajasthan has become the **first State to implement a policy to control blindness**, with the objective of ensuring the **"right to sight".**

About the Policy

- The Department of Medical and Health, on the direction of the Chief Minister released the policy document for the prevention of blindness.
- It is aimed to **bring light to the lives of more than three lakh people suffering** from **visual impairment in the state**.
- The **prevalence rate of blindness** in the country was **1.1 percent in 2020** and work would be done to bring it down to **0.3 percent** through the blindness control policy.
- **Features:** Under the policy, the Rajasthan government will mandatorily run **Keratoplasty Centres and Eye Banks** at all the government medical colleges.
    - Efforts to eliminate visual impairment would be made in the districts in collaboration with voluntary organisations, trusts, hospitals and other charitable institutions working in this field.
    - In this regard, the state government will carry out a campaign for eye donation on an extensive level along with the private institutions.
    - Special training will be imparted to eye experts, eye surgeons, post-graduate students, counsellors working for eye donation and eye assistants etc.

17.7. Ken-Betwa Link Project

Why in News?

- The Third Meeting of the Steering Committee of the Ken-Betwa Link Project (SC-KBLP) was held.

About Ken-Betwa Link Project

- **Background**: On 22nd March 2021, a historic agreement was signed between the Union Minister of Jal Shakti and the Chief Ministers of Madhya Pradesh and Uttar Pradesh to implement the first major centrally driven river interlinking project in the country.
- **Overview:** Ken-Betwa Link Project is the first project under the National Perspective Plan for the interlinking of rivers
    - It aims to transfer surplus water from the Ken river in Madhya Pradesh to Betwa in Uttar Pradesh to irrigate the drought-prone Bundelkhand region.
        - Both Ken and Betwa are the tributaries of the Yamuna.
- The project will provide annual irrigation of 10.62 lakh ha, drinking water supply to a population of about 62 lakhs, and also generate 103 MW of hydropower and 27 MW of solar power.
- **Benefits:** The Project will be of immense benefit to the water-starved Bundelkhand region, spread across the states of MP and UP.
    - It is expected to boost socio-economic prosperity in the backward Bundelkhand region on account of increased agricultural activities and employment generation.
    - It would also help in arresting distress migration from this region.
- **Concerns:** The construction of large dams for the interlinking of rivers to solve the irrigation and drinking water problems has created potential threats to faunal as well as floral diversity.

17.8. Spot Bellied Eagle Owl

Why in News?

- A wildlife team has recently spotted the 'Spot Bellied Eagle Owl' (Bubo Nipalensis) for the first time in the Seshachalam forest, and for the third time in Andhra Pradesh.

About Spot Bellied Eagle Owl

- **Features:**
    - It is overall a stark, grayish-brown bird, with dark, coarse brown coloration over the back and upper wings. It is a large bird of prey and is also **known as the forest eagle-owl**.
    - It is a very powerful and **bold predatory owl**.
    - The bird makes a strange scream similar to humans and it is hence called the '**Ghost of the Forest' in India and 'Devil Bird'**.
- **Habitat**:
    - Mostly found in dense, evergreen forests or moist deciduous forests
- **Distribution**:
    - They are found throughout the Indian subcontinent and peninsular Southeast Asia.
    - It is distributed through the Lower Himalayas from Kumaon east to Myanmar, central Laos, and central Vietnam.
- **Conservation Status:**
    - **IUCN Status:** Least Concern
    - **CITES status:** Appendix II

17.9. Prithvi-II Missile

In News

- India successfully carried out a test launch of tactical ballistic missile Prithvi-II from a test range off the Odisha coast.

About Prithvi-II Missile

- Prithvi-II is an indigenously developed **Surface-to-Surface Missile Short-Range Ballistic Missile (SRBM).**

- It was developed by the Defence Research and Development Organisation (DRDO) under the **Integrated Guided Missile Development Program (IGMDP).**
    - **Background:** Prithvi-II was first tested in 1996 and was inducted into the Indian armed forces in 2003.
- The missile is powered by light propulsion twin engines.
- It has a range of around **350 km** and can carry **500-1,000 kg of warheads.**
- It uses an advanced inertial guidance system with maneuvering trajectory to hit its target with precision and accuracy.
- A well-established system, the Prithvi-II missile has been an integral part of India's nuclear deterrence.

17.10. Lecanemab: New Alzheimer's Drug

Why In News?

- Recently, the United States Food and Drug Administration (USFDA) has **granted fast-track approval** to an Alzheimer's medicine, **Lecanemab**.
    - The drug is marketed as **Leqembi**.
    - It is the second such **monoclonal antibody** to receive an approval from the regulator.

Alzheimer Disease

- **About:**
    - It is a **progressive neurologic disorder** that causes the brain to shrink (atrophy) and brain cells to die.
    - It is the most common cause of **dementia** — a continuous decline in thinking, behavioural and social skills that affects a person's ability to function independently.
- **Symptoms:**
    - Memory loss- The early signs of the disease include **forgetting recent events** or conversations.
    - Later, a person with Alzheimer's disease will develop **severe memory impairment** and lose the ability to carry out everyday tasks.
    - In advanced stages of the disease, complications from **severe loss of brain function** — such as dehydration, malnutrition or infection — result in death.
- **Treatment:**
    - There is **no treatment** that cures Alzheimer's disease or alters the disease process in the brain.

17.11. India to hold first Y20 Summit

Why In News?

The first-ever Y20 (Youth 20) Summit is to be held in India on the sidelines of the G20 Summit.

- It will focus on themes of the future of work; climate change and disaster risk reduction; peacebuilding and reconciliation; and youth in democracy.

About Y20 (Youth 20) Summit

- Youth 20 (Y20) is the official youth engagement group of G20.
    - India is hosting the Y20 summit for the first time.
- It provides a platform that allows youth to express their vision and ideas on the G20 priorities.
- It will focus on global youth leadership and partnership.
- It is a unique opportunity to allow the youth to provide constructive policy inputs and to utilise the platform to voice their opinions to the world audience.
- These priority areas of the summit point to the urgency with which the world has to reconcile with the reality of the changing times in our quest to survive and thrive.

17.12. Exercise 'Veer Guardian-2023'

Why In News?

- India and Japan will hold their first bilateral air exercise from January 12 to 26, in reflection of the growing defence ties amid increasing concerns over China's military muscle-flexing in the Indo-Pacific region.

About

- The exercise 'Veer Guardian-2023' involving the Indian Air Force (IAF) and Japan Air Self Defence Force (JASDF) will be held at Japan's Hyakuri air base.
    - The IAF deployment at the exercise will include four Su-30 MKI jets, two C-17 aircraft and one IL-78 plane.
    - The JASDF will be participating with four F-2 and four F-15 aircraft.

- **Features:**
    - The joint exercise will also include multi-domain air combat missions in a complex environment allowing the air warriors to exchange their best practices. Additionally, experts from both sides will also hold discussions to share their expertise on varied operational aspects.
- **Relevance**
    - It will promote Air Defence cooperation between India and Japan.
    - It will fortify the long-standing bond of friendship and enhance the avenues of defence cooperation between the two air forces.

17.13. Sagol Kangjei

Why In News?

- The Home Minister inaugurated a 122-foot-tall statue of a **polo player astride a Manipur Pony** in Imphal.

About

- **Modern-day polo** originated within the small northeast Indian state of Manipur in 3100 BC, where it was played as **sagol kangjei** (sagol means pony and kangjei is a game of sticks).
- The Manipur Pony is one of five recognised equine breeds of India, and has a powerful **cultural significance for Manipuri society.**
- The **Lai-Haraoba festival** of the state depicts the life and times of **Khori-phaba,** the polo-playing god of sports.
- The origins of polo in Manipur are associated mythologically with **Marjing, the God of the Chenglei tribe**, to whom a structure similar to the ancient polo stick along and a ball are still offered in worship.

17.14. First Intranasal COVID-19 Vaccine

Why in News?

- There are different methods of vaccine administration. Oral, Intradermal, subcutaneous, and intramuscular. But the Bharat Biotech recently launched an intranasal vaccine to treat COVID-19. It is called iNCOVACC. Intra-nasal means the vaccine is administered through nose. India has approved the vaccine and it is to be administered as a booster dose.

About iNCOVACC

- The price of the vaccine is Rs 800 in private hospitals and Rs 325 in government hospitals
- Two doses have been advised. The doses are to be administered within a time gap of 28 days
- Adeno Virus is the carrier of iNCOVACC. Meaning, the antigen from Coronavirus is isolated and injected into the Adeno virus. This is done to increase the immunity power of the human body. The vaccines injected into the human body teach the immune system to fight against the virus. The carrier viruses aid in increases this fighting levels
- iNCOVACC is easy to deliver. Because; no needles or syringes are used in administering the vaccine
- Vaccine administration requires no skilled professionals. Any common man can administer the vaccine.

17.15. Revamped Monument Mitra Scheme

Why in News?

- The scheme will bring more than a thousand monuments under the private sector. The private sector will revamp the monuments. They will do this as a part of their Corporate Social Responsibility.

- Revamping means improving a structure or changing its appearance. The scheme is to be implemented by the Ministry of Culture.
- A thousand monuments selected under the scheme are now under the maintenance of the Archaeological Survey of India.

Objective

- Under the scheme, the Ministry of Culture will sign at least 500 agreements with private sectors before August 15, 2023. The ministry aims to accomplish half the goal before Azad Ka Amrit completes it in 2023.

What is the plan?

- The monuments will be revamped in terms of amenities. The monuments will get sound and lighting systems. More shops will be opened. Steps to develop tourism will be implemented.

17.16. Titanosaurs

Why In News?

- Recently, Indian Researchers have found 92 nests and 256 fossilised eggs belonging to **Titanosaurs in Central India.**
    - Titanosaurs are the **largest dinosaurs** to have ever lived.

About the Study

- The researchers identified **six different egg-species** (oospecies), suggesting a **higher diversity** of titanosaurs than is represented by skeletal remains from this region.
- Based on the layout of the nests, the team inferred that these dinosaurs buried their eggs in shallow pits like **modern-day crocodiles.**
- A rare case of an "egg-in-egg," indicates that titanosaur sauropods had a **reproductive physiology that parallels that of birds** and possibly laid their eggs in a sequential manner as seen in modern birds.
- The presence of many nests in the same area suggests these dinosaurs exhibited **colonial nesting behavior** like many modern birds.
- The insights gleaned from this study contribute significantly to paleontologists' understanding of **how dinosaurs lived and evolved.**

17.17. M1 Abrams

Why In News?

- Recently, the US President announced that he would send **M1 Abrams** tanks to Ukraine.

About

- **The M1 is the world's preeminent tank because it combines four crucial qualities:**
    - **Superior mobility** - to get to targets and escape attack
    - **Superior sensors and controls** - to locate and hit targets
    - **Superior firepower** - to destroy targets
    - **Superior armour** - to withstand attack
- **Naming:**
    - The M1 Abrams is named after the late General Creighton W. Abrams, who served as Army Chief of Staff and commander of the 37th Armored Battalion.
    - The M1 is informally known as "The Beast," "Dracula" and "Whispering Death," referring to its impressive firepower and quiet operation.
- **Delivery and first use:**
    - General Dynamics delivered the first M1 Abrams battle tanks to the U.S. Army in 1980, but it wasn't until 1991's **Operation Desert Storm** that the world fully appreciated the weapon's capabilities.
    - The U.S. Army and Marine Corps deployed nearly 2,000 M1s to the Persian Gulf, and all but 18 returned in working condition.
    - The tanks sped over the rough desert terrain, through heavy smoke from oil fires, destroying almost all of the Iraqis' Soviet tank fleet. In the entire operation, the United States didn't lose a single M1 crew.

17.18. Green Comet

Why In News?

- Recently discovered, Green Comet can be witnessed after nearly 50 thousand years and next expected to be seen after the same number of years.

About

- **What is the 'green comet'?**
  - It approached the sun in the middle of January 2023, it is now moving away from it, along its own orbit.
  - The orbit indicates it comes from the edge of our solar system, a distant reservoir of comets we call the Oort cloud.
    - The **Oort cloud** is thought to be a big, spherical region of outer space enveloping our sun, consisting of innumerable small objects, such as comets and asteroids.
    - It is the most distant region of our solar system and Home of the Comets.
- **Why the colour Green?**
  - Comets are frozen rocky or gas-filled objects that are remnants of the formation of the solar system.
  - Due to their composition, characteristics and the path they move in, they tend to **leave a light behind them**.
  - Here, the comet itself is green (called the head of the comet) and emits a whitish light behind it (often called the tail of the comet).
  - The green glow is thought to arise from the presence of diatomic carbon – pairs of carbon atoms that are bound together – in the head of the comet. The molecule emits green light when excited by the ultraviolet rays in solar radiation.
- **Distance from Earth:**
  - The green comet could be at a distance of 2.5 light minutes from Earth, meaning a "mere" 27 million miles.
- **Naming:**
  - It will be closest to Earth in early February of 2023.
  - Termed the **C/2022 E3 (ZTF)**, the comet was named to refer to those who first spotted it – astronomers at the Zwicky Transient Facility (ZTF) in the US, in March 2022.
- **Visible:**
  - Comets could be visible with telescopes and binoculars, and might even be visible to the naked eye under a clear night sky.
  - **Northern Hemisphere:** Comet will be seen in the morning sky, as it moves swiftly toward the northwest during January 2023.
  - **Southern Hemisphere:** It'll become visible in the Southern Hemisphere in early February 2023.
  - **Specifically in India:** In Indian skies, it can be spotted at 16° above the horizon in the **Bootes constellation**, when looking in the northwest direction.
- **Gravity on Comets:**
  - Just like other bodies in space, comets also have orbits.
  - They are sometimes pulled in close to the sun because of the sun's gravity acting on them.
  - As they orbit near the Sun, they heat up and spew gases and dust into a glowing head that can be larger than a planet.
  - The remains of dust following this burning up, from a distance, look like a trail of light to humans on Earth.
  - Comets, therefore, have often been seen giving out blue or whitish light, or even green.
- **Uniqueness of Green Comet:**
  - It comes under the category of **long-period comets**, which take more than 200 years to orbit the Sun; the green comet is **not easily spotted**.
  - With a highly elliptical orbit, the comet will head back to the Oort cloud and make its next appearance roughly 50,000 years later.

17.19. Immune Imprinting

Why in News?

- Recent studies find 'immune imprinting' might be making **bivalent boosters less effective.**
  - The **bivalent booster** is the most recent version of the vaccine that develops better **immunity against coronavirus.**

Immune Imprinting

- It is a tendency of the body to repeat its i**mmune response based on the first variant it encountered through infection or vaccination**.
- **Imprinting acts as a database for the immune system,** helping it put up a better response to repeat infections.
- The concept was **first observed in 1947.**

Issues with with Immune Imprinting

- After our body is exposed to a virus for the first time, it produces **memory B cells** that circulate in the bloodstream and quickly produce antibodies.
- When a similar or variant of virus enters the body, the immune system, rather than generating new B cells, **activates memory B cells,** which in turn produce antibodies that bind to features found in both the old and new strains, known as cross-reactive antibodies.
- Although these **cross-reactive antibodies** do offer some protection against the new strain, they aren't as effective as the ones produced by the B cells when the body first came across the original virus.

17.20. First Fully Digital Banking State

Why in News?

- Kerala has become the first state in India to enable digital banking in all eligible accounts. According to the State-Level Bankers' Committee (SLBC), the state now has at least one product enabled digitally in 3.76 crore accounts.
- The state government, led by Chief Minister Pinarayi Vijayan, has implemented this move under the 'Expanding and Deepening of Digital Payments Ecosystem' scheme of the Reserve Bank of India (RBI).

Thrissur: The First District to Implement Digital Banking

- In 2021, Thrissur became the first district in Kerala to implement digital banking under the scheme. This has been a major step towards digitization of the state's economy, and the government is hopeful that this will lead to a significant boost in the state's economy.

17.21. Islands named after Param Vir Chakra awardees

Why In News?

- Prime Minister named 21 largest unnamed islands in the Andaman and Nicobar Islands after Param Vir Chakra awardees.

More in News

- The naming was done on the occasion of Netaji Subhas Chandra Bose's 126th birth anniversary, which is officially observed as Parakram Diwas (Day of Valor).
- A proposed memorial will be set up on Ross Island, which was renamed as Netaji Subhas Chandra Bose Dweep in 2018.
- Neil Island and Havelock Island were also renamed Shaheed Dweep and Swaraj Dweep.

Significance of Andaman and Nicobar Islands in India's Independence

- The islands were first controlled by the Dutch, then by the British, and were taken over by the advancing Japanese military during World War II for three years (1942-45).
- The islands were formally handed over to Bose's Azad Hind government in 1943, although effective control remained with Japan.
- It is the land where Subhas Chandra Bose unfurled the national flag for the first time in 1943.
- Before his departure, he renamed Andaman as Shaheed ("Martyrs") Island, and Nicobar as Swaraj ("Freedom") Island."

Param Vir Chakra

- It is India's highest military decoration instituted on 26 Jan 1950, as a Gallantry Medal with retrospective effect from 15 August 1947 by Dr. Rajendra Prasad, the then President of India.
- The award is granted for "most conspicuous bravery in the presence of the enemy".
- The medal was designed by Mrs. Savitri Khanolkar. The designer drew inspiration from sage Dadhichi, a vedic rishi.
- The medal is cast in bronze. In the centre, is the state emblem, surrounded by four replicas of Indra's Vajra, flanked by the sword of Shivaji and is held by a 32 mm purple ribbon.

Parakram Diwas

- It is celebrated on 23rd of January, on this day in 1897, Neta Ji was born in Cuttack, Odisha.
- It was first observed in 2021 on the 124th birth anniversary of Netaji.

17.22. Dolphins

Why In News?

A new study has found that noise generated by human activity makes it harder for dolphins to communicate and coordinate with each other.

- As the levels of underwater noise increase, these mammals have to "shout" to each other.

About Dolphins

- They are a type of marine mammal that belongs to **cetaceans**.
- They are **social mammals** that communicate through squeaks, whistles, and clicks. They also use **echolocation** in order to locate food and other objects.
    - Therefore, anthropogenic noise coming from large commercial ships, military sonars or offshore drilling can severely impact their well-being.
- They are popularly noted for their **grace, intelligence, playfulness, and friendliness to humans.**
- They can live in either fresh or saltwater.
    - Distributed in marine environments worldwide, they range from **equatorial to subpolar waters** and also can be found in many major river systems.

17.23. Neelakurinji

Why In News?

- The Ministry of Environment, Forest and Climate Change (MoEF) has listed Neelakurinji (Strobilanthes kunthiana) under **Schedule III of the Wildlife (Protection) Act, 1972**, including it on the list of protected plants.

About Neelakurinji

- Kurinji or Neelakurinji is a shrub that grows in the shola forests of the Western Ghats in South India.
- It is a shrub of the Acanthaceae family that famously blooms once every 12 years.
- **Scientific Name:** Strobilanthes kunthiana.
    - **Strobilanthes** is a genus of about 350 species of flowering plants in the family Acanthaceae, mostly native to **tropical Asia and Madagascar.**

- In the **Western Ghats region**, nearly 70 varieties of Neelakurinji plants have been identified.
- The Eravikulam National Park, near Munnar, is known for widespread blooming of the kurinji, with the next flowering season expected in 2030.

17.24. Schools of Eminence Project

Why In News?

- Recently, the **Punjab** Chief Minister launched the Schools of Eminence.

Key Points

- **About:**
    - Under the project, **117 state-run schools** in 23 districts will be **upgraded** with a special emphasis on classes 9 to 12.
    - Besides career-related **counseling**, innovative teaching practices will be followed and **guidance for professional exams** will also be provided to students.
- **Aim:**
    - Reimagining education in state-run schools, envisioning holistic development of students and preparing them to be responsible citizens.
- **Based on Five pillars:**
    - State-of-the-art infrastructure,
    - Academics,
    - Human resource management,
    - Sports and co-curricular activities and
    - Community engagement.
- **Funding:**
    - The government has earmarked a **budget of Rs 200 crore** for the project.
- **Significance:**
    - The project could be a **"revolutionary" step** in ensuring a **golden future** for the students.
    - Teachers as nation builders have to play a **pivotal role in bringing qualitative change** in the education sector.
    - It is a giant leap towards making Punjab a **real frontrunner** in education.

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