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G.S PAPER II

1. POLITY

1.1 Online Dispute Resolution

What is the issue?

- The pendency of over 40 million cases in our judicial system remains a focal point for reform and reduction.
- This pendency makes a strong case for online dispute resolution (ODR).

Why are these cases pending?

- Nearly a third of these cases have been pending for 3 to 30 years.
- They are pending due to resource-dwindling litigation, case adjudication and difficulty in consensus resolution.
- There are barriers to conflict resolution for the common man, because of,
 - a) Lack of access to courts and representation, or
 - b) Entry-level barriers such as linguistic or technology challenges.
- All of this is routinely brought up by those who are impacted by it.
- With the pandemic disrupting basic services delivery, the discussion is only going to expand in scope and volume.

What is the situation now?

- Around 40 million cases are pending cases at the Supreme Court, High Courts and the district courts.
- This seems more than significant, except that the courts are performing in an exemplary fashion to dispose of cases.
- Around 25 lakh cases were heard virtually by courts across the country in the wake of the Covid-19 pandemic.
- However, the key statistic is that the number of cases filed surpassed the disposal capacity.
- The pandemic has, of course, accelerated this trend.

What is the case for ODR?

- Given the escalating pendency, it is important that alternative methods for avoiding, containing and resolving disputes are adopted.
- The access to justice isn't just about having the means to resolve disputes but also ensuring that the means are efficacious and expeditious.
- Keeping this context in mind, the growing focus on ODR in India is not without reason.

What is the significance of ODR?

- ODR aligns with the current socio-economic setting.
- It has a global precedent of being extremely successful, and above all, has principles of natural justice in its essence.
- The foundational pillars of any successful ODR regime are **trust, convenience and expertise**.
- India now has a long legacy of citizens trusting technology, whether in e-payments or in education and healthcare.
- To augment dispute resolution mechanisms, Lok Adalats and Gram Nyayalayas have been created as alternative options for affordable justice.
- ODR has significantly large-scale potential for innovation.



What is the mechanism?

- A three-stage mechanism can increase the potential of ODR for dispute avoidance, containment and resolution.
- The mechanism should start with online '**evaluation**', where there is dispute diagnosis and exploration of options for litigants.
- Next, online '**facilitation**' is resorted to, where facilitators and automated negotiation tools aid in non-adversarial resolution.
- Finally, if the first two stages don't result in a resolution, an online **hearing** is conducted, which is synonymous with online courts.

What is the ODR's potential in India?

- ODR has the potential to raise equity, fairness, access in the dispute resolution ecosystem in India.
- The convenience brought by ODR has been exhibited by e-Lok Adalats conducted in several states, where disputes were resolved simply over WhatsApp audio/video calls.
- Supply-side capabilities could also be enhanced through a relatively large and competent services pool for adjudication and representation.
- ODR has the potential to be an effective alternative that utilises technology to bridge barriers and access in resolution.
- Through facilitating low cost, technology-augmented, linguistically- friendly and incentivised dispute avoidance, containment and resolution, ODR could enhance justice delivery to all.

1.2 Election Commission's Powers

Why in news?

The Supreme Court stayed the Election Commission's order to revoke the status of former Madhya Pradesh CM as a 'star campaigner' for a party.

What was the ECI order?

- The former CM made a distasteful personal remark about another party's woman candidate while campaigning for the Assembly by-election.
- This is why the Election Commission of India's (ECI's) revoked his status as a leader of a political party (star campaigner).

What did the Supreme Court say?

- The Supreme Court stayed the ECI's order saying that it has no such revoking power.
- The apex court's takedown of the poll regulator strikes a blow against the ECI's authority and its role in ensuring a clean campaign.

How are star campaigners selected?

- Section 77 of the Representation of the People Act, 1951 is related to a candidate's election expenditure.
- This Section lets the political party itself to decide who its leaders are.
- It also allows every party to submit a list of such 'star campaigners' to the election authorities.

What does having a star status mean?

- The expenditure incurred on the campaign done by those from the star campaigners' list is not included in the expenditure of the candidate.
- The star status ensures that some leaders can travel extensively to cover more territory and constituencies without breaching any individual candidate's spending limit.

What does revoking the star status mean?

- An order revoking the star status means that the withdrawal of the right to campaign without incurring electoral expenditure on the candidates' account.

- As the poll regulator, the ECI must have the power to revoke the status of a campaigner, if there is a breach of campaign norms or the MCC.
- [MCC - The ECI's Model Code of Conduct lays down the standards of behaviour for political parties and their candidates contesting elections.]

What did the ECI say?

- It cited an MCC clause that bars candidates from resorting to criticism of all aspects of the private life of other leaders and party workers.
- Even though the MCC is not statutory, it has been generally recognised that the ECI should have some means of enforcing its norms.
- In past orders, the ECI has cited the Supreme Court's observation that when laws are absent, the ECI can invoke its residuary power to meet situations that cannot be foreseen by lawmakers.

What is the problem?

- Without explicit powers to enforce the MCC with punitive measures, the ECI seems toothless.
- There are certain provisions under which the regulator has tried to empower itself, but these have been rarely exercised.

What is the solution?

- The political executive must first create the legislative framework to give the commission clear and explicit powers.
- To avoid the charge of the commission being politically aligned, commissioners are named by the government.
- A multi-partisan naming system, like that followed for the heads of various other Constitutional bodies needs to replace the current system.

1.3 Article 32

Why in the news?

Supreme Court discourages the use of Article 32.

What is Article 32?

- It deals with the 'Right to Constitutional Remedies', i.e. the right to move the Supreme Court for the enforcement of the rights conferred in Part III (Fundamental Rights) of constitution.
- It states that the Supreme Court "shall have power to issue directions or orders or writs, for the enforcement of any of the rights conferred by this Part".
- It includes writs of habeas corpus, mandamus, prohibition, quo warranto and certiorari, whichever may be appropriate.
- The right guaranteed by this Article "shall not be suspended except as otherwise provided for by this Constitution (during the period of Emergency)".
- An individual can approach the High Court under Article 226 or the Supreme Court directly under Article 32.

Why the court discourages the use of Article 32?

- There are large numbers of Petitions under Article 32 coming to Supreme Court.
- SC feels that high courts, under Article 226, are well-equipped to deal with such matters.
- In civil or criminal matters, the first remedy available to an aggrieved person is that of trial courts, followed by an appeal in the High Court and then the Supreme Court.
- When it comes to violation of fundamental rights, an individual can approach the High Court under Article 226 or the Supreme Court directly under Article 32. Article 226, however, is not a fundamental right like Article 32.

How has the SC interpreted Article 32?

- The Supreme Court has been inconsistent with its position regarding Article 32.

- **Journalist Siddique Kappan Case** - The court asked why the petitioners could not go to the High Court and waits responses from the Centre and the UP government.
- **Nagpur-based man defamatory case** - The same Bench directed him to approach the High Court first.
- **Poet Varavara Rao Case** - In a relief petition under Article 32, the Supreme Court directed the Bombay High Court to expedite the hearing on a bail plea filed on medical grounds.
- Here, it also observed that once a competent court had taken cognisance, it was under the authority of that court to decide on the matter.
- **Arnab Goswami Case** - The court had then said that the right to approach the Supreme Court under Article 32 is itself a fundamental right.
- It also observed that “there is no doubt that if a citizen of India is deterred in any case from approaching this Court in exercise of his right under Article 32, it would amount to a serious and direct interference in the administration of justice in the country”.
- **RomeshThappar vs State Of Madras Case(1950)** - Supreme Court observed that it is the protector and guarantor of fundamental rights, and it cannot refuse to entertain applications seeking protection against infringements of such rights.
- **Jabalpur vs S S Shukla (1976)** - Supreme Court had said that the citizen loses his right to approach the court under Article 32.
- Constitutional experts say that it is eventually at the discretion of the Supreme Court and each individual judge to decide whether an intervention is warranted in a case, which could also be heard by the High Court first.

1.4 Free Speech

Why in news?

Kerala has promulgated a draconian ordinance to curtail free speech.

What is the ordinance all about?

- It amends **Section 118A in the Kerala Police Act** giving uncontrolled powers to the police to curtail free speech.
- Now, the police can arrest anyone expressing or disseminating any matter deemed threatening, abusive, humiliating or defamatory to a person or a class of persons in any manner making it a cognizable offence.

What the State government says?

- It indicates that law targets only defamatory social media posts.
- It will not curb reportage, political satire or expression of opinion.
- However, in the **Shreya Singhal vs. Union of India (2015)** case, the Supreme Court struck down **Section 66A of the IT Act** which criminalised sending of any message through a computer resource that was grossly offensive, menacing, or caused annoyance, inconvenience, danger, insult, injury and intimidation.
- The court cited that act brought innocent and offensive messaging under its ambit.

What are the issues with the ordinance?

- The new law is vaguely defined and is made cognizable whereas criminal defamation under the IPC is non-cognisable.
- **Section 118A** lays down a three-year prison term whereas it is two year term under the IPC.
- The present ordinance contravenes with earlier Supreme Court judgement -A police officer cannot register an FIR for the offence & they can only be prosecuted by a private complaint.
- However, Centre’s assent is mandatory as it is in conflict with central laws & the ordinance itself required prior presidential assent.
- It is regrettable that the State sought to equip with extraordinary powers to deal with a problem that can be dealt with other provisions relating to stalking, harassment, criminal intimidation and verbal abuse.
-

1.5 Vehicle as a Public Space

Why in news?

The Delhi government told the Delhi High Court that a personal vehicle on a public road cannot be said to be a private zone — rather, it is a public space.

What was the argument?

- The argument was given by the state to defend its decision of making it compulsory to wear masks when people are travelling in vehicles.
- This was a response given to a lawyer's plea who challenged the imposition of Rs 500 fine for not wearing a mask when he was travelling in his vehicle.
- The petitioner has sought compensation of Rs 10 lakh for the alleged mental harassment.

What is the guideline regarding the wearing of masks in Delhi?

- Due to the spread of Covid-19, the Delhi Disaster Management Authority (DDMA) ordered in a larger public interest that it is essential that a person must wear a mask in any public place.
- The order went on explicitly state that any person moving around in his personal and official vehicle must be wearing these masks compulsorily.
- Under the Delhi Epidemic Diseases (Management of COVID-19) Regulations, 2020, if the DDMA's directives or guidelines are violated, 'Authorized Persons' can impose,
 - a) A fine of Rs 500 for the first violation, and
 - b) A fine of Rs 1,000 for repeated violations.

Why has the petitioner sought Rs 10 lakh compensation?

- The lawyer was challaned by police for not wearing a mask in his car.
- He argued that his vehicle is a private zone, he was travelling alone and, said that the central government has not issued any such guidelines.
- Delhi government referred to the Supreme Court (SC) judgment in 'Satvinder Singh Vs. State of Bihar' to defend its directive on wearing masks in vehicles.

What is the Satvinder Singh case?

- The SC was hearing an appeal by four people from Jharkhand, who while travelling in a vehicle in 2016, when subjected to a breath analyser test, were found to have consumed alcohol.
- A case was registered against them under the Bihar Excise (Amendment) Act, 2016.
- This Act provides for penalty against whoever "consumes liquor in a public place or an unauthorized place".
- The four people were arrested and remained in custody for two days.
- They approached the Patna High Court with a plea to set aside the order passed by a Chief Judicial Magistrate taking cognizance of their case.
- After the HC dismissed the plea, they approached the Supreme Court.
- Their main argument before the SC was that the vehicle in which they were travelling could not be said to be a "public place" under the Bihar Excise (Amendment) Act, 2016.
- The Bihar government argued that the vehicle had been intercepted on a public road, and Section 53(a) of the Act was fully applicable.

What did SC say regarding definition of 'public space' in this case?

- It ruled that the Bihar Excise (Amendment) Act, 2016 defines a "public place" to mean any place to which the public has access, whether as a matter of right or not.
- It includes all places visited by the general public, and also includes any open space.
- The court noted that when private vehicle is passing through a public road it cannot be accepted that public have no access.



- It is true that public may not have access to private vehicle as matter of right but definitely public have opportunity to approach the private vehicle while it is on the public road.
- The court dismissed the argument that a vehicle is not covered by the definition of “public place” as given in the law amended in 2016 by Bihar.

2. GOVERNANCE

2.1 Regulating Online Content

Why in news?

The government will bring video streaming services and online news under the Ministry of Information and Broadcasting.

What will be the impact of this decision?

- It clubs the only sector of the media which has pre-censorship, namely films, with the news media which wasn't subjected to pre-censorship.
- This decision may constrain the free press.

Why did the government take this decision?

- Recently, the Supreme Court asked the government for suggestions toward improving the existing self-regulatory mechanism for TV media.
- The government responded stating that regulating the digital media was more pressing.
- More regulation is usually a problematic idea, bringing with it the real risk of censorship.

What is the merit?

- This decision may bring in a **level playing field** by bringing new digital players within the purview of regulation along with the non-digital ones.
- New movies, before theatrical release, have to get through the certification process of the Central Board of Film Certification.
- In contrast, video streaming services like Netflix, which have gathered several Indian subscribers, have not had to follow any such requirement.
- It cannot be denied that regulation, of the light-touch kind, which serves as an advisory for the content being presented to the viewers, is useful.

What is the concern?

- There is a question of whether the intent is just to create a level playing field, and nothing more.
- There are concerns about the functioning of the regulatory mechanisms.
- The fear is that this will just end up facilitating more governmental interference and problematic censorship in regulating digital news.

What is needed?

- Indian democracy's progress is dependent on free speech.
- So, it is important that regulation is not an excuse to stifle voices.
- The government should recognise that there is really no reason to have a different regulatory mechanism for digital news.
- For decades now, the print media and television media have managed themselves in self-regulation frameworks.
- In these frameworks, one of their main goals has been to maintain their independence.
- **Self-regulation** is a must, and censorship is not needed.

2.2 Independent Directors

What is the issue?

- A major theme in corporate governance that has emerged worldwide is the institution of independent directors (IDs).
- This article deals with the roadmap for its institution.

Why was this institution created?

- The institution of IDs was created to prevent the growing incidence of promoters or management who enrich themselves at the expense of the minority shareholders.
- Therefore, if IDs were to perform their role, they were to be independent of the promoters.

What is the problem in India?

- The key problem in India has been who gets appointed as an ID.
- The regulations specify who cannot be an ID, but they don't speak about the qualifications or experience of the IDs.
- The field is wide open to the appointment of anyone - friends, relatives (not covered by definition), neighbours, etc.
- IDs are appointed and paid by the very person whose excesses they are supposed to guard against.
- Most companies have misused the requirement of women directors or performance evaluation of directors.
- But, there is no solution if our expectations from IDs continue to be misplaced.

What is needed?

- There is a need in the change of mindset so that the focus can shift to the perpetrators of fraud. Not the IDs, who are bystanders.
- Multi-pronged and harsh measures are the only ways to improve corporate governance.
- The following are some suggestions that deserve serious consideration.

What are some suggestions?

- Individuals commit frauds; companies are only vehicles.
- So, individuals, not companies, should be punished for fraud/non-compliance.
- **Severe punishments** for malpractices are the best deterrents and inducers of governance.
- Comprehensive **databases** need to build for each company of all promoters, directors and key management persons (KMPs).
- These databases should be interlinked, along with databasing all their relatives.
- There is a need to enhance surveillance and software-driven Early Warning Systems in the context of both the companies and individuals.
- The investigation function needs to be better skilled.
- Separate **securities-market courts** should be established, dedicated to faster pronouncements; cases cannot linger on for years.
- But it would also be politically controversial to abandon the IDs institution, as it is now a universally adopted concept.

2.3 Rural Development Fund

Why in news?

There is a tussle between the Central government and the Punjab government over the Rural Development Fund (RDF).

Why is there a tussle?

- The Union government has decided to withhold rural development fee from Punjab.
- It has asked the Punjab Government to explain its utilisation of the RDF.
- These actions had enraged the Punjab Government.

What is Rural Development Fund (RDF)?

- RDF is the 3% cess levied on the purchase or sale of agricultural produce under the Rural Development Fund Act, 1987.
- This is executed by Punjab Rural Development Board (PRDB) with the Chief Minister as its chairman.

What is Rural Development Board (RDB)?

- The RDB was incorporated in 1987 under Rural Development Act, 1987.
- It is mandated with the promotion of better agriculture, and granting relief for the loss and damage to agricultural produce.
- It also provides the facility of streets lights, dharamshalas, panchayat ghars, canals, health infrastructure, sanitation, and government educational institutions in rural areas.

From where does Punjab get this fund and what is it used for?

- It comes mainly from central government's purchase agency, Food Corporation of India (FCI).
- FCI buys around 13 million tonnes of wheat and 16 million tonnes of paddy every year.
- Usually Punjab gets Rs 1,750 crore every year — Rs 1,000 crore as 3% RDF for procuring paddy and the rest for wheat.
- This year, some estimates had put the total at Rs 1,850 crore.
- This fund is supposed to be used for the creation and maintenance of rural infrastructure in and outside mandis.
- But there have been charges in the past that it was diverted by the state for other purposes.

Why has the central government suspended this fund?

- The central government has observed that the fund is being diverted.
- It has asked the state government to explain how it is utilising the fund.
- It has also not made any provision for this fund in the cost sheet that it has sent to the state.

Why is the Punjab government fuming?

- The Punjab government was to give the earnings from RDF to pay interest on a loan of Rs 4,500 crore it has taken from various banks to pay for debt waiver to farmers.
- If this fund is not received by the state, it will have to dip into its depleting coffers to pay for this interest.

2.4 Relaxation to ITeS Sector

Why in news?

The Centre has decided to relax the rules governing call centres and Business Process Outsourcing (BPO) units.

What were the previous rules?

- The rules governing the outsourcing companies were introduced in 1999 when the telecom sector was highly regulated.
- The Centre wanted to keep a tab on the voice traffic flowing within various call centres.
- By doing so, it wanted to ensure that no one infringed on the jurisdiction of telecom service providers.
- Since then there have been major changes in technology and evolution of different networking architectures for setting up call centre networks.

What are the new rules?

- Under the new rules, non-voice processes have been kept out of the definition of other service providers.
- Even for voice based call centres, there is no registration or reporting requirement.
- Other requirements such as deposit of bank guarantees, requirement for static IPs, publication of network diagram, frequent reporting obligations, penal provisions have been removed.
- These changes could be a game changer for India's IT-enabled services sector.

What is the current significance?

- Ongoing pandemic-led lockdown has disrupted the way IT companies function as more than 85% of the workforce stays at home.
- From a centralised architecture, ITeS companies have had to restructure their entire organisation.
- Under this delivery model, costs related to real estate and managing offices will go down.
- But higher spending will go into collaboration and other productivity tools.
- In this context, the decision to allow call centre employees to work from anywhere allows for tapping into talent across geographies.

What will be the benefits?

- This will help in creation of jobs in smaller cities.
- In the old business model, talent had to be relocated from their hometown.
- Now, a qualified person does not have to migrate to work in an MNC.
- Another benefit is the boost it will give to the gig economy.

3. SOCIAL JUSTICE

3.1 Laws to Curb 'Love Jihad'

Why in news?

Uttar Pradesh and Haryana have proposed to enact a law to curb 'love jihad'.

What is the proposal?

- This proposal is a vicious mix of patriarchy and communalism.
- The idea was propounded by Uttar Pradesh Chief Minister.
- It legitimises a term that constitutes an obvious insult against inter-faith marriages and relationships in which one of the parties is a Muslim man.
- The reason for bringing in such a law is that the Hindu women are under the threat from Muslim youth seeking to win over girls for religious conversion in the name of marriage.

What are the flaws in the concept?

- There is no legal sanction to political terms such as 'love jihad'.
- There can be no legislation based on an extra-legal concept.
- In any case, legislative intervention in marriages involving consenting adults will be clearly unconstitutional.

What are the governing laws?

- The domain of matrimony is occupied by separate laws governing weddings that take place under religious traditions, and the Special Marriage Act that enables a secular marriage.
- Under the Special Marriage Act, secular marriage includes inter-faith marriages.

What is the reason behind such a proposal?

- Uttar Pradesh and Haryana Chief Ministers spoke about marriages as if they were not a matter of personal choice.

- Investigation into marriages that purportedly raised such a suspicion also failed to find any substance in the allegations.
- The immediate context for these leaders to curb inter-faith marriages is a recent Allahabad High Court judgment.

What is the judgment?

- The Allahabad High Court's judgment frowned upon religious conversion solely for the purpose of marriage.
- It declined to intervene on a writ petition seeking police protection for a couple, noting that the bride had converted from Islam to Hinduism solely for the purpose of marriage.
- It had found such an expedient conversion unacceptable, citing a similar 2014 verdict.
- The 2014 verdict questioned the bonafides of conversions without change of heart or any conviction in the tenets of the new religion.

What does the court's ruling mean?

- Although the court strayed from the issue at hand, its objective was to underscore that conversion should not become a device.
- It is useful as a principle that inter-faith couples retain their religious beliefs separately and opt for marriage under the Special Marriage Act.
- But this principle cannot be used to derogate from personal choice.
- Also, it should not be used to interfere in the individual freedom to forge matrimonial alliances.

3.2 Guidelines on Alimony

Why in news?

The Supreme Court set down comprehensive guidelines on alimony.

What is the reality?

- In India, for many girls, the inevitable reality seems marriage before completion of higher education.
- Girls are married off early and bear children long before they should.

What are the impacts?

- This reality triggers a state of poor maternal health.
- It is one of the root causes of high levels of child stunting and wasting in India.
- There is the possibility of a marriage not working out for varied reasons.
- This leaves behind the girl or young woman in extreme distress because often she is not financially independent.

What are the constitutional safeguards?

- Parliament and the courts have persistently enacted legislation to give women better rights.
- Article 15(3) and Article 39 are two key constitutional safeguards.
- **Article 15(3)** Nothing in this article shall prevent the State from making any special provision for women and children.
- **Article 39** directs state policy towards equal pay and opportunities for both men and women, and protecting the health of women and children.

What did the SC rule?

- The Supreme Court leaned on Article 15(3) and Article 39, and a host of other laws while setting down these guidelines.
- It ruled that an abandoned wife and children will be entitled to 'maintenance' from the date she applies for it in a court of law.

What are the specifics?

- In the judgment, the SC outlined specifics, including “reasonable needs” of a wife and dependent children.
- It also looks into her educational qualification, whether she has an independent source of income, and if she does, if it is sufficient, to follow for courts on alimony cases.

How can the alimony be claimed?

- The SC lay down that women can make a claim for alimony under different laws, including,
 1. The Protection of Women from Domestic Violence Act, 2005
 2. The Section 125 of the CrPC, or
 3. The Hindu Marriage Act, 1955.
- It would be inequitable to direct the husband to pay maintenance under each of the proceedings.

What is the significance of this ruling?

- Keeping in mind the vastness of India and its inequities, the Court added how an order or decree of maintenance may be enforced under various laws and Section 128 of the CrPC.
- It said that the maintenance laws will mean little if they do not prevent dependent wives and children from falling into destitution and vagrancy.
- For women in India, these words offer a glimmer of hope.

3.3 Gender Equity in Science

Why in news?

The draft **Science, Technology and Innovation Policy** aims to increase the participation of women in science.

What is current status of women representation in science?

- In the 2018 **Global Gender Gap report**, India is ranked 108 out of 149 countries.
- According to DST figures, the share of women involved in scientific R&D increased from 13% to 29% from 2000-2001 to 2014-15 & it decreased to 14.71% in 2015-16.
- It is found that women are either not promoted or often dropped out during their mid-career to attend to their families.
- Hence pilot programme-**Gender Advancement through Transforming Institutions**- similar to Athena SWAN will be launched in India to address the issue.

What is Athena SWAN(Scientific Women’s Academic Network)?

- It is an evaluation and accreditation programme in started by UK in 2005 to enhance gender equity in science, technology, engineering, mathematics and medicine (STEMM).
- Participating Institutes are graded depending on the enrolment of women and the advancement of the careers of women faculty and scientists.
- Institutions develop action plans to improve gender equity & are recognised by accrediting them with bronze, silver or gold medal.
- In 2019, Ortus Economic Research in partnership with Loughborough University reveals that 93% of participants believed the programme had a positive impact on gender issues, 78% said it had impacted equality and diversity issues positively, and 78% noted a positive impact on the career progression of women.

How it can be implemented in India?

- Since most of the universities, barring IITs and NITs, are runned and funded by the government, DST has to negotiate with them to bring changes in institutional policies, recruitment & promotions.
- The DST has tied up with NAAC to push gender equity through it.
- It is planning for an intensive gender sensitisation programmes among the top leaders of institutions.
- It aims to increase women members in selection committees during recruitment processes.

- In the future, the DST is likely to consider policy changes such as providing financial incentives through grants to institutes based on their performance which is similar to UK.

What will the pilot programme be launched?

- Firstly 25 institutes will be shortlisted to carry out self-assessment on gender equity in their departments.
- Then British Council will assist DST and facilitate collaboration between selected institutions under GATI with Athena SWAN-accredited institutions in the UK, with each institute here having a partner institute in the UK for guidance.

4. GOVERNMENT INITIATIVES

4.1 PM SVANidhi

Why in news?

The Pradhan Mantri Street Vendors Atmanirbhar Nidhi (PM SVANidhi) scheme was launched by the Ministry of Housing and Urban Affairs.

What is the scheme about?

- Through the PM SVANidhi scheme, the central government would extend Rs 10,000 loan as working capital to street vendors.
- This amount will help the street vendors to restart their businesses which have been hit by the Covid-19 pandemic.
- The Small Industries Development Bank of India (SIDBI) is the scheme's implementation agency.

What is the significance of the scheme?

- This scheme will help in mainstreaming and legitimising genuine street vendors who have not got valid identity cards.
- The scheme brings in financial mainstreaming of street vendors through loans and digital payments.

What is the next step?

- The government wants to formalise its understanding of the street vending sector.
- Making a first-of-its-kind **database** of the beneficiaries of this scheme will help in understanding the sector.
- Based on that understanding, this sector would be brought under various schemes.

Why is such a study needed?

- The scheme plans to extend the microcredit to over 50 lakh street vendors across India.
- But, going beyond the mandate of this scheme, the government wants to use the data for comprehensive poverty alleviation.

How will the study be done?

- Banks and municipal bodies are already **collecting data** about street vendors who are beneficiaries of the project.
- Such data will be leveraged to create a profiling of the vendors.
- Then, committees will be formed at the level of district administration to **reach out** to street vendors in their respective areas.
- The government departments that are running welfare schemes should nominate their nodal officers in each city to complete the exercise.
- Based on the profiling, a street vendor and anyone in his or her family will be gauged in terms of eligibility for various government schemes.
- Based on eligibility, they will be given access to such welfare schemes.

Will this actually work towards poverty alleviation?

- Becoming formal beneficiaries of various government schemes works as a big step towards entering the policy intervention network.
- It also helps in financial mainstreaming in the long run.
- The PMSVANidhi will be incentivising digital transactions by giving QR codes to the street vendors.
- This QR code will be used to receive payments through the government's BHIM UPI app.
- They are given cash-back for digital transactions too.
- The idea is that with a trail of digital transactions, the street vendors will create a formal transaction history in banks and will slowly build their creditworthiness for the future.

4.2 Nursing and Midwifery Commission Bill

Why in news?

The Union Government has finalised National Nursing and Midwifery Commission Bill 2020 to replace the Indian Nursing Council Act 1947.

What is the current situation?

- At present, there are different undergraduate nursing examinations conducted by different medical institutes.
- This requires an aspirant to keep track of these throughout the year.

What would be the purpose of the Commission?

- The draft Bill replaces the Indian Nursing Council with a new body called National Nursing and Midwifery Commission.
- This body would have representatives of the Centre and the states.
- It would frame policies and regulate standards for the governance of nursing and midwifery education and institutions.
- It would provide standards for nursing and midwifery faculty and clinical facility in teaching institutions.
- It would provide basic standards of education, physical and instructional facilities, training, research, maximum tuition fee payable in respect of various categories.
- It would frame policies and codes to ensure observance of professional ethics in nursing and midwifery profession.
- Similar to the National Medical Commission, the proposed commission would have different boards to regulate UG and PG education.
- It will assess and rate different institutions offering courses.

What are the other proposals?

- It proposes a **common entrance test** for undergraduate nursing courses that would integrate the system.
- It also proposes a **National Exit test** for the final year of the nursing or midwifery course, to ensure uniform quality.
- Every nurse and midwife would have to register with the **state boards**.
- The Bill will likely vest in the board the power to decide course structure, fee, etc.,
- A **national register** would be maintained to track all qualified and practising nursing professionals.
- It proposes a **temporary licence** for foreign nationals who are qualified nurses and midwives to practice in India.

5. INDIA & ITS NEIGHBORHOOD

5.1 Visit to Myanmar

Why in news?

India's Army Chief Manoj Vikram Naravane and Foreign Secretary Harsh Vardhan Shingla visited Myanmar.

What is the challenge?

- There is a common link between the challenges India face in Ladakh and the developments across our borders with Myanmar.
- The challenges in Myanmar arise from Chinese policies designed to use Myanmar soil to promote separatist violence in the north-eastern States.
- Virtually every armed insurgent group in the North-East has links with armed insurgent groups in north-western Myanmar.
- The notable one is the Kachin Independence Army, which operates across Myanmar's borders with China's bordering Yunnan province.
- China's relations with Myanmar are quite unique.
- Given existing sanctions by both the US and its European Allies, Myanmar has become heavily dependent on China.

What is happening at the border?

- The Myanmar-China border has become the epicentre of local armed separatist groups operating on Myanmar soil.
- Members of the Indian groups enter China's Yunnan after crossing the border into Myanmar's Kachin Province.
- They are welcomed, armed, trained and even financed in the Yunnan Province before crossing back to India.

What is the leverage for China?

- The indigenous armed separatist groups in Myanmar are used as leverage by China to influence Myanmar's internal affairs.
- These groups participate in the conference organised by the Myanmar Government for drafting a new Constitution for the country.
- China even has an Ambassador to liaise with armed groups operating along the China-Myanmar border.

How does Myanmar react?

- Myanmar is compelled to tolerate and live with Chinese interference.
- But, there have been recent instances when Myanmar has reacted strongly to Chinese transgressions.
- Myanmar has made no secret of its concerns about China's long-standing links with separatist groups in its north-eastern States.

What is India's strategic approach?

- Strategically, India has established its presence across the shores of Myanmar, in the Bay of Bengal.
- This was a result of participation of ONGC in successful offshore oil exploration projects.
- It also has a presence in Sittwe Port that it has built on the Bay of Bengal, for transportation of goods from north-eastern States to Kolkata.
- This is particularly important as, China is keen to build the Bay of Bengal Port of Kyaukphyu, linking the port to its Yunnan Province.
- The port is located not far from the Sittwe Port built by India.
- There are natural concerns in Myanmar of facing a debt trap situation on the Kyaukphyu port project built by China.

5.2 China-Occupied Kashmir

What is the issue?

- Pakistan is training and funding separatists, and pretending to have solidarity with the people of Kashmir.
- China is supporting Pakistan perpetuate its own territorial grab in the trans-Karakoram Shaksgam Tract of Kashmir.

What is China doing?

- China treats the J&K issue as a bilateral dispute to be resolved between India and Pakistan.
- It turned a blind eye to the constitutional mischief by which Pakistan's has acquired complete sway over Pakistan Occupied Kashmir (PoK).
- China ignores Pakistan's agenda of integrating Gilgit-Baltistan as its fifth province.
- Yet, China questions the establishment of the Union Territory of Ladakh.
- It had termed it as a 'unilateral' attempt to change the status quo in the Kashmir region.

Why China doesn't have the right to question?

- China has no locus standi to comment on India's internal affairs.
- This is because of the fact that the former princely State of J&K acceded to India through the Instrument of Accession in 1947.

What is the Shaksgam valley issue?

- The Shaksgam valley, part of PoK, was handed over by Pakistan to China through an illegal border agreement in 1963.
- However, the continuing Chinese occupation of Kashmir's territory does not find adequate mention in the contemporary discussion on this issue.
- China occupies 5,180 square kilometres in the Shaksgam Valley in addition to 38,000 square kilometres in Aksai Chin.
- China and Pakistan have colluded to confuse these facts.
- They promote the China-Pakistan Economic Corridor (CPEC), which runs through parts of Indian territory under their respective occupation.

What is the history?

- Historically, China played an insidious role in changing the frontiers of J&K through fictitious claims and alliances with local chieftains.
- China exploited the 'Great Game' between British India and Russia in the late 19th century.
- It pitched territorial claims far beyond the traditional frontiers of Xinjiang.
- It gradually crept into areas in the Taghdumbash Pamirs and the Karakorams, well south of its frontier along the KunLun mountains.

What did the British do?

- In 1936, the Mir of Hunza was asked by the British to abandon his rights in the Taghdumbash Pamirs as well as in the Raskam valley.
- But the Shaksgam valley to the south-west of Raskam and the Aghil range remained with the Mir of Hunza.
- This remained the traditional frontier of British India until independence, inherited by India following J&K's accession in 1947.
- It is this border that was blatantly compromised by Pakistan in its so-called agreement with China on March 2, 1963.

What did Pakistan do?

- Pakistan gave in to China's expansionist designs and spurious claims to a boundary along the Karakoram Range.



- By doing so, it enabled China to extrapolate a claim line eastwards along the Karakoram Range in Ladakh.
- This collusion allowed China to claim the whole of Aksai Chin.
- After the Partition of the Indian subcontinent, from 1953, Chinese troops actively started transgressing the frontier in eastern Hunza.
- Pakistan, spotting an opportunity in the rapidly deteriorating India-China ties in the late 1950s, decided to pander to the Chinese.
- Pakistan chose to downgrade the historical claims of the Mir of Hunza and eventually signed away the Shaksgam valley to China in 1963.

What makes China a party to the dispute?

- The provisional nature of the territorial settlement between China and Pakistan is evident in Article 6 of the 1963 agreement.
- It states that this agreement will be replaced by formal Boundary Treaty that will be made with Chinese government, after the settlement of the Kashmir dispute between Pakistan and India.
- In effect, this agreement has established China as a party to the dispute.
- China has a vested interest in legitimising its illegitimate gains in the trans-Karakoram tract.
- India should look into China's illegal territorial occupation.

5.3 Conviction of Hafiz Saeed

Why in news?

Hafiz Saeed, an UN-designated terrorist was convicted on terror finance charges by a Pakistan anti-terrorism court.

What does this conviction show?

- The conviction of Hafiz Saeed shows that Pakistan can be forced to act against terror networks under international pressure.
- He is blamed by India and the U.S. for the 2008 Mumbai terror attacks.
- Saeed, in jail since July 2019, was convicted in another case of terror financing in February 2020.
- He is currently serving two sentences of five and a half years each.
- Repeated convictions in terror financing cases underscore the concerns India and the U.S. have about his operations.

What did he do?

- He first founded the LeT in the 1990s targeting India.
- When the terror group came under international pressure, he revived the JuD, supposedly an Islamic charity, in 2002.
- Now, the Anti-Terrorism Department accused the JuD of financing terrorism from its fund collections in the name of charity through NGOs.

What did Pakistan do?

- Even after the Mumbai attack, Pakistan refused to act against Saeed and his networks.
- The U.S. declared a bounty on Saeed's head and the UN proscribed his organisations.
- Also, Pakistan was facing pressure from the Financial Action Task Force (FATF), a global dirty money watchdog.
- Only after all these pressure, Pakistan banned Saeed's organisations.
- The latest conviction comes after the FATF urged Pakistan to complete an internationally agreed action plan to fight terror financing.



Why Pakistan is taking actions against Saeed?

- In 2018, just before a meeting of the FATF, Pakistan endorsed a UN list of terrorist organisations operating in the country.
- It enforced a nationwide ban on them, including the LeT and the JuD.
- But the FATF still placed Pakistan on its “grey list” in 2018.
- It demanded more actions from Pakistan to avoid being blacklisted, which could invite economic sanctions.
- Ever since, Pakistan, which cannot afford to be blacklisted, has moved against Saeed.

What are the doubts?

- There is question whether these are genuine attempts to fight terrorism or half-hearted measures to dodge international pressure.
- There are doubts because Pakistan had used anti-India and anti-Afghan terrorist networks for strategic advantages.
- It was this dual policy of fighting terror at home while nurturing terror groups that target its rivals abroad that has been responsible for Pakistan’s predicament.

What should Pakistan do?

- If Pakistan is serious about fighting terrorism, it should crack down on terror financing and terror infrastructure.
- The international community and organisations, including the FATF, should keep up the pressure until Islamabad shows tangible outcomes.

5.4 Nagrota Encounter

Why in news?

Indian government has decided to step up its diplomatic campaign to hold Pakistan accountable for the Nagrota encounter.

What is the story behind?

- A planned terror strike was carried out in Jammu and Kashmir by four men, who were gunned down by security forces.
- These people were believed to be members of the Pakistan-based Jaish-e-Mohammed.
- A tunnel was discovered in the Samba sector from where these men were supposed to have infiltrated into India.

What did India do?

- India’s Foreign Secretary briefed a group of Ambassadors on the plot.
- The government believes that this plot was planned on the same scale as last year’s Pulwama bombing, and timed for the anniversary of the 2008 Mumbai attacks.
- The envoys were part of the first batch of diplomats being briefed.
- Indian missions have also been instructed to pass on details of the “information docket” handed over.
- This includes details of the encounter in Nagrota between the suspected terrorists hiding in a truck and security forces.
- This attack is seen as an attempt to target grassroots level democratic exercises in Jammu and Kashmir.
- [The District Development Council elections is due to start on November 28, 2020.]

What is the strategy?

- By apprising the international community, it would seem the government has a multi-pronged strategy.
- The first imperative is to ensure that the full implications of the aborted attack and what could have occurred are understood worldwide.



- India should also ensure that the threat it continues to face from cross-border terror is acknowledged.
- In addition, any actions India takes against terror threats the Army perceives along the LoC this point on will be considered retaliatory.
- Secondly, Pakistan must be put squarely on notice as it has been making allegations about a terror threat from India.

What is Pakistan's position?

- Pakistan still faces the final FATF decision in February 2021 on whether it will be blacklisted.
- It is facing this difficulty due to its inability to curb terror financing and to shut down groups such as the JeM and the LeT.
- Pakistan government would be better positioned in fulfilling the action plan it has been tasked with rather than flashing unsubstantiated reports with counter-claims against India.

What should India do?

- India must also remember that invoking the international community can be a double-edged sword in its bilateral conflict with Pakistan.
- India's success lies in protecting its borders, as done in Nagrota.
- Providing a peaceful and stable environment in J&K would restart the much-delayed democratic process there, despite all attempts to derail it.

6. BILATERAL ISSUES

6.1 Track 1.5 Dialogue

Why in news?

The third round of India-Canada Track 1.5 Dialogue will take place on a virtual platform.

What will be the agenda?

- The countries will deliberate on and define the role of India and Canada in the post-COVID-19 world.
- The scholars and experts will go into various facets of the strategic partnership linking the two countries.
- They will discuss about the new geo-economics of the Indo-Pacific and digital cooperation, particularly in the areas of fintech and AI.
- This dialogue creates a template for a merger of government to government diplomacy, with public diplomacy.

How did this Dialogue originate?

- The Track 1.5 Dialogue has been piloted since February 2018.
- It was piloted by two think tanks — India's Gateway House and Canada's Centre for International Governance Innovation (CIGI).
- Their collaboration has encouraged the governments to focus on the immediate opportunities available in investment, technology and geopolitical rearrangements.

What are some Indo-Pacific developments?

- There is an escalating discontent against Beijing's aggressive behaviour.
- There is a growing interest of France, Netherlands and Germany to be active players in the region.
- Also, the Quad grouping is being strengthened.
- [Quad is an informal strategic forum between the US, Japan, Australia and India.]

What does the China-Canada tensions mean to India?

- There is a huge stress in Canada-China relations, turning Canadian public opinion against China.
- This opened the door to a closer relationship with India.

- Canadians sympathise for India's troubles with China's intrusions across the Line of Actual Control (LAC) in eastern Ladakh since April 2020.
- In this backdrop, developments concerning the **Indo-Pacific** are of immense relevance to Canada.
- The forthcoming dialogue can deepen the India-Canada convergence on this issue.

What are the other focal points?

- The other major focal point will be the **economic and technological cooperation** between the two countries.
- The recent positive trends are:
 1. Canada-India merchandise trade exceeded C\$10 billion in 2019;
 2. Canada's cumulative investment is a substantive C\$55 billion.
- Addressing the 'Invest India' conference in Canada, Prime Minister of India assured Canadian investors that no barriers would come in their way.
- Indian students are increasingly being educated in Canada.
- The Indian diaspora in Canada is now 1.6 million-strong, representing over 4% of the country's total population.
- The principal areas of bilateral cooperation are in five Es: Economy, Energy, Education, Entertainment and Empowerment of women.
- In particular, the digital domain holds immense potential, given Canada's proven assets in technology.
- India and Canada are divided by geographical distance but are united through clear common interests and shared values.

7. INTERNATIONAL ISSUES

7.1 Armenia-Azerbaijan Peace Deal

Why in news?

Armenia and Azerbaijan agreed on a Russia-brokered ceasefire in and around Nagorno-Karabakh region.

What is the Nagorno-Karabakh region?

- Nagorno-Karabakh, straddling western Asia and Eastern Europe, is internationally recognised as part of Azerbaijan.
- But most of the region is controlled by Armenian separatists.
- In 1991 when the Soviet Union collapsed, the newly independent Armenia and Azerbaijan went to war over Nagorno-Karabakh.
- Nagorno-Karabakh had been an autonomous region within Azerbaijan during the Soviet years.
- Armenians have made historical claims over the enclave, which is largely populated by ethnic Armenians.
- By the time the all-out war came to an end in 1994, Armenia had captured Nagorno-Karabakh and seven surrounding districts.
- In, Azerbaijan launched the offensive vowing to take back Nagorno-Karabakh and other Armenian-occupied districts.
- In six weeks of fighting since September 2020, Azeri forces retook territories, including some 40% of Nagorno-Karabakh itself.

What is the role of ethnicity in the conflict between them?

- Ethnic tensions from decades ago have a crucial role in the dispute.

- The Azeris claim that the disputed region was under their control in known history.
- Armenians maintain that Karabakh was a part of the Armenian kingdom.
- The disputed region has a majority Armenian Christian population, but it is internationally recognised as a part of Muslim-majority Azerbaijan.

How the ceasefire was achieved?

- Russia, which has a security agreement with Armenia, remained neutral in the early days of the war.
- When Azerbaijan captured Armenian territories, Armenia sought Russian help.
- But Mr. Putin said the security guarantee is for Armenia, not for the Armenians in Nagorno-Karabakh.
- However, Russia was concerned about the rapid change in the status quo and the more assertive security role Turkey was playing in its backyard.
- Under pressure from Moscow, both sides agreed to cease the operations.

What is the new peace deal?

- The deal is meant to end the military conflict between the two nations over the disputed region of Nagorno-Karabakh.
- It was signed by Russian President, Azerbaijani President and Armenian Prime Minister.
- As per the new peace deal, both sides will now maintain positions in the areas that they currently hold.
- This will mean a significant gain for Azerbaijan as it has reclaimed over 15-20% of its lost territory during the recent conflict.
- Further, under this agreement, all military operations are suspended.

What is the role of Russia?

- Russian peacekeepers will be deployed along the line of contact in Nagorno-Karabakh and along the Lachin corridor that connects the region to Armenia.
- These peacekeepers will be deployed in the area for a period of five years.
- Refugees and internally displaced persons will return to the region and the adjacent territories.
- The two sides will also exchange prisoners of wars and bodies.
- A new corridor will be opened from Nakhchivan to Azerbaijan, which will be under Russian control.
- Russia's role in the conflict has been somewhat opaque since,
 1. It supplies arms to both countries and
 2. It is in a military alliance with Armenia called the Collective Security Treaty Organisation.

Have there been other ceasefire agreements?

- Even after the 1994 peace deal, the region has been marked by regular exchanges of fire.
- In 2016, it saw a Four-Day War before Russia mediated peace.
- The Organization for Security and Co-operation in Europe (OSCE) has tried to get the two countries to reach a peace agreement for many years.
- In October 2020, both countries agreed to a ceasefire agreement, which was also brokered by Russia but was unsuccessful.

Is the conflict over?

- It's not. The war has altered the balance of power in favour of Azerbaijan.
- It stopped short of taking the entire Nagorno-Karabakh for now, but it doesn't mean that it won't go for it again.
- The status of Nagorno-Karabakh remains unsettled.
- This means that the conflict has only been postponed, not resolved.

7.2 Thailand - Pro-democracy Protests

Thailand is witnessing protests for months, with protestors targeting King Maha Vajiralongkorn as well as Prime Minister Prayuth Chan-ocha.

How did the protests start?

- Opposition politician Thanathorn Juangroongruangkit was disqualified as a Member of Parliament in 2019 after which a ban was put in place on his party Future Forward.
- Anti-government protests began after the disqualification.
- Notably, the party was largely supported by the youth of Thailand.
- It was also the most vocal party opposing the government of former junta leader Prayuth Chan-ocha.
- After a pause during measures to stop the spread of the novel coronavirus, protests resumed in mid-July 2020.

Who are the protesters?

- Most of them are students and young people and there is no overall leader.
- Key groups include -
 - the Free Youth Movement, which was behind the first major protest in July 2020
 - the United Front of Thammasat and Demonstration, a student group from Bangkok's Thammasat University, which has championed calls for monarchy reform
 - the Bad Student movement of highschoolers, which also seeks education reform
- Most protest leaders are in their 20s although one of the most prominent figures, human rights lawyer Arnon Nampa, is 36.

What are their concerns?

- **Monarchy** - Pro-democracy activists say Thailand is backtracking on the constitutional monarchy established when absolute royal rule ended in 1932.
- They say the monarchy is too close to the army and argue that this has undermined democracy.
- **Elections** - The current ruler, Maha Vajiralongkorn, became king in December 2016.
- Prime Minister Prayuth Chan-ocha came to power through a coup in 2014 that is said to be endorsed by the king.
- Protesters complain that the king endorsed Prayuth's premiership after elections in 2019.
- Opposition figures say the elections were engineered to keep his hands on power.
- Prayuth, however, says the election was fair.
- **Powers** - Protesters also want to reverse a 2017 increase in the king's constitutional powers.
- Besides these, protesters have also voiced anger that the king spends much of his time in Europe.
- They have also challenged the spending of the Palace and lifestyle of the king, who has been married four times and last year took a royal consort.
- **Lese majeste laws** - Protesters also seek the scrapping of *lese majeste laws* against insulting the king.
- They want the king to relinquish the personal control he took over a palace fortune estimated in the tens of billions of dollars, and some units of the army.

What do the Lese majeste laws mean?

- The lese majeste law protects the monarchy from any criticism.
- The monarchy is protected by Section 112 of the Penal Code.
- It says whoever defames, insults or threatens the king, queen, heir-apparent or regent shall be jailed for 3 to 15 years.



- In June 2020, Prayuth said the law was no longer being applied because of “His Majesty’s mercy”. [The Royal Palace has never commented on this.]
- But Rights groups say opponents of the government including the protest leaders have recently been charged under other laws such as those against sedition and computer crimes.
- The government has said it does not target opponents but it is the responsibility of police to uphold the law.

What do the protestors demand now?

- The protestors call for Prayuth’s removal, a new constitution and an end to the harassment of activists.
- Some protesters went further with a list of 10 demands to reform the monarchy.
- Protesters say they do not seek to end the monarchy, only reform it.
- However, conservatives are horrified by such attacks on an institution the constitution says is “enthroned in a position of revered worship”.

What is the government's response?

- The government had earlier said protests would be tolerated but that they must keep within the law.
- But that changed suddenly after it accused protesters of obstructing Queen Suthida’s motorcade and as thousands gathered at Government House to demand the removal of Prayuth.
- The government has imposed emergency measures banning gatherings of more than five people in Bangkok.
- It forbade publication of news or online information that could harm national security.
- It also freed up police to arrest anyone linked to the protests.
- The Royal Palace, meanwhile, has made no comment on the protests and the demands for reform despite repeated requests.

G.S PAPER III

8. ECONOMY

8.1 RCEP Trade Deal

Why in news?

The Regional Comprehensive Economic Partnership (RCEP) trade deal was signed.

What is RCEP?

- RCEP deal is the largest regional trading agreement to this day.
- The purpose of RCEP was to make it easier for products and services of each of these countries to be available across this region.
- Negotiations to chart out this deal had been on since 2013.
- It is signed by 15 countries led by China, Japan, South Korea, Australia, New Zealand and the 10-state ASEAN grouping.
- [ASEAN - Association of Southeast Asian Nations]
- India decided to exit the grouping in 2019.

What is the comparison with the TPP?

- Many say that RCEP is not likely to usher in comprehensive economic integration in East Asia, as like the Trans-Pacific Partnership (TPP).
- TPP would have been the world’s most extensive FTA in terms of market opening had the Trump Administration decided not to abandon it.
- But there have been doubts whether the TPP was a highly discriminatory managed trade.



- TPP had several regulatory issues including the controversial labour and environmental standards and issues such as “anti-corruption”.
- All these could raise regulatory barriers and severely impede trade flows.
- In contrast, RCEP includes traditional market access issues, following the template provided by the World Trade Organization (WTO).
- It also includes issues that are being discussed by several WTO members as a part of their agenda to reform the multilateral trading system.
- The issues are electronic commerce and investment facilitation.

What are the problems?

- In case of trade in goods, RCEP members have taken big strides towards lowering their tariffs.
- But, the commitments made by the RCEP members for services trade liberalisation look shallow in terms of the coverage of the sectors.
- **Movement of natural persons**, an area in which India had had considerable interest, is considerably restricted.
- RCEP members have allowed relatively limited market access only to individuals in managerial positions or those having high levels of skills.
- India had expressed its reservations on template adopted during RCEP negotiations on the areas of investment and electronic commerce.
- The text on **investment rules** shows that it is a work-in-progress.
- It will be interesting to see whether the controversial investor-state-dispute-settlement (**ISDS**) mechanism is included.
- In case of **electronic commerce**, RCEP members have agreed not to prevent cross-border transfer of information by electronic means where such activity is for the conduct of the business of a covered person.
- However, a member can deny transfer of information if it is necessary to achieve a legitimate public policy objective.
- Members can adopt a legal framework which ensures the protection of personal information of the users of electronic commerce.

Why did India exit the grouping?

- India had justified its decision as protecting its economy from burgeoning trade deficits with a majority of the 15 RCEP members.
- It wanted to safeguard the interests of industries like agriculture and dairy and to give an advantage to the country's services sector.
- The grouping's refusal to accede to India's requests on safeguards was a deal breaker.

How far is China's presence a factor?

- Escalating tensions with China are a major reason for India's decision.
- The various measures India has taken to reduce its exposure to China would have sat uncomfortably with its commitments under RCEP.
- Major issues that were unresolved during RCEP negotiations were related to the exposure that India would have to China.
- **Rules of origin** - It is the criteria used to determine the national source of a product.
- India felt that there could be a possible circumvention of rules of origin.
- In that case, some countries could dump their products by routing them through other countries that enjoyed lower tariffs.
- This may lead to surges in imports.
- India feared that there were inadequate protections against these surges.

- **MFN** - India also wanted RCEP to exclude most-favoured nation (MFN) obligations from the investment chapter.
- **Other issues** - India felt the deal would force it to extend benefits given to other countries for sensitive sectors like defence to all RCEP members.
- RCEP also lacked clear assurance over market access issues in countries such as China and non-tariff barriers on Indian companies.
- Also, the final agreement shows that the pact does address these issues.

What are India's options now?

- India is an original negotiating participant of RCEP.
- It has the option of joining the agreement without having to wait 18 months as stipulated for new members in the terms of the pact.
- Alternatively, India may be reviewing its existing bilateral FTAs with some of these RCEP members.
- It will also make newer agreements with other markets with potential for Indian exports.
- Over 20 negotiations, including with the US and the UK, are underway.

Can India re-engage with RCEP?

- Prior to the signing of the deal, RCEP has left the door open for India to join RCEP Agreement as an original signatory.
- India has been invited to participate in RCEP meetings as an observer and in economic cooperation activities undertaken by RCEP members.
- RCEP members may commence negotiations with India once India submits a request in writing of its intention to accede to the agreement.

Will India choose to re-engage?

- The answer seems to be unambiguously in the negative on two counts.
- **Concerns raised** - During the RCEP negotiations, India had raised a number of concerns, two of which, include,
 - 1) The levels of market access it was expected to provide, especially the deep cuts in tariffs on imports from China, and
 - 2) Provisions relating to the investment chapter.
- Since the border clashes, India has imposed a number of import restrictions on Chinese products.
- Both these measures would have been infructuous if India were a party to the RCEP.
- **Atmanirbhar Bharat Abhiyan**, India's initiative for its economic turnaround, is mainly focused on strengthening domestic value chains.
- But the RCEP, like any other FTA is solely focused on promoting regional value chains.

8.2 Land Monetisation

What is the issue?

- The central and state governments are facing revenue crisis.
- So, the monetisation of land is a viable option for public sector undertakings and urban local bodies.

What is Land Monetisation?

- Asset monetization is basically a transaction that converts a dead/idle asset into an income generating one.
- Land monetisation will enable the retention of land ownership while realising market rent (if the revision of rent is periodic and on agreed principles).
- For example, government-run company MTNL has a reported 250 acres of land in Delhi & Mumbai.

- Partnering with a company that can help lease the office space to companies could help MTNL with a healthy annuity income.
- It should be a well-thought process, weighing the potential benefits and viability.

Why is it a viable option?

- It will generate a revenue stream and also entails several other benefits.
- It puts the land to better use.
- The commercial development of land accelerates the real estate prospects in the vicinity.
- It will fuel the demand for social infrastructure such as retail development, banking, etc.
- It also contributes to planned urbanisation, boosts tourism and generates employment.
- It has cascading effects on economic development and the quality of life of citizens.
- Land exchange/swap can also be used as an instrument if suitable options for exchange exist with any other government entity.

How can it be done efficiently?

- A process needs to be set up by which detailing the land assets for all government organizations should be undertaken.
- Once a detailed list of all such assets can be streamlined, it will help bring transparency to the process.
- Only after a thorough mapping, will the question of what can be monetized come up.
- Consulting companies could then get involved in the process so that the type of “value that can be unlocked” can be detailed for different parcels of land.
- These could be the very foundation on which public/private participation could be sought.
- Mass sensitisation and awareness programmes should be organised for the local community to educate them on the benefits of the process.

What is the challenge?

- The major hurdle is the time-consuming process of approvals from the various civic authorities.
- The confidence-building measures for the revival of the economy post-Covid-19 need to be supplemented by fast-tracking the approval processes.

8.3 Moratorium on Lakshmi Vilas Bank

Why in news?

RBI imposed a 30-day moratorium (temporary suspension of activities) on Lakshmi Vilas Bank Ltd (LVB) & proposed a draft scheme for its amalgamation with DBS Bank India.

Why was LVB put under moratorium?

- The financial position was declining steadily, with continuous losses over the last three years eroding the bank's net-worth.
- Its gross non-performing assets (NPAs) stood 25.4% of its advances as of June 2020, as against 17.3% a year ago.
- It was also experiencing continuous withdrawal of deposits and low levels of liquidity.
- There were serious governance issues which have led to deterioration in its performance.
- The bank management had indicated to the RBI that it was in talks with certain investors, but failed to submit any concrete proposal.
- So it was merged with DBS Bank.
- Also, the RBI has put a cap of Rs 25,000 on withdrawals & assured depositors of the bank that their interest will be protected.

Are the depositors safe?



- Deposit Insurance and Credit Guarantee Corporation (DICGC) gives insurance cover on up to Rs 5 lakh deposits in banks.
- Merger Proposal will make the bank's CRAR at 12.51% and Common Equity Tier-1 capital at 9.61%.
- The RBI and the government have often assured that the financial system is safe and sound, but a series of failures might affect the confidence of depositors.

What happens to investors?

- The stock price in Yes Bank reduced below Rs 10 per share from a peak of Rs 400 per share.
- Nearly Rs 9,000 crore worth of Additional Tier-1 bonds (AT-1) were fully written off.
- In LVB, equity capital is being fully written off & existing shareholders face a total loss on their investments.

What are the issues faced by old-generation private banks?

- Most of the banks do not have strong **promoters** leading to mergers or forced amalgamation.
- South Indian Bank and Federal Bank have been operating as board-driven banks without a promoter.
- In KVB, the promoter stake is 2.11%, and in Karnataka Bank, there's no promoter.
- LVB, Yes Bank & Punjab & Maharashtra Co-operative Bank follow the similar issues.

How has the pandemic affected banking system?

- NPAs in the banking sector are expected to increase as the pandemic affects cash flows of people.
- Companies in sectors such as retail trade, wholesale trade, roads and textiles are facing stress, while NBFCs, power, steel, real estate and construction were already under stress when the pandemic began.
- The Expert committee headed by **K V Kamath** recommended a one-time loan restructuring window for corporate borrowers under stress due to the pandemic.

8.4 Banking health and the 'K Curve' dynamics

What is the issue?

- Recently, the depositors in Lakshmi Vilas Bank Limited (LVB) were bailed out.
- In this context, understanding the price performance of individual banks and focusing on the trends in valuation metrics could help in anticipating the financial system dynamics in the coming years.

What is the P/BV ratio in this regard?

- A key metric for financial companies is the 'Price to Book Value' ratio (P/BV).
- The P/BV reflects two critical attributes that the market values most:
 1. adequacy of current capital
 2. runway available to the entity for profitable growth
- **A P/BV ratio above 1** indicates that the market believes that the company can grow and generate Return on Equity (RoE) above the hurdle rate that investors expect.
- Here, the faster it can grow or the greater the spread of the ROE above the hurdle rate, the greater the P/BV multiple (above 1).
- **A P/BV below 1** indicates that the market either does not believe the bank has recognised all its bad loans or has the business model to deliver returns above the hurdle rate.
- This may be because the bank does not have a good deposit franchise, has bad cost discipline or a broken lending model.

What does a K Curve mean?

- There are banks that have a P/BV above 4 while some others have much below 1, even at 0.25.
- With NBFCs, the P/BV range is even wider, with some NBFCs being valued in excess of 7.
- The growth trajectories of these entities with dispersed P/BV will be varied, resulting in a classic K Curve.

- In other words, the K Curve **depicts the inequality** existing between different financial entities in terms of their attributes that determine their future growth and profitability.
- Widening of the arms of the 'K' would imply that the inequality is increasing.
- On the other hand, narrowing of the span of the 'K' would mean the opposite.

What is the current scenario of the banks?

- **One arm of the K:**
- Among private sector banks, a couple of banks have always had their **P/BV above 3** on a consistent basis.
 - Capital is available in plenty for these banks.
 - Resultantly, the market is betting that these banks will grow much above system average and generate attractive RoE.
 - This would imply that these banks would have disproportionate incremental market share on both assets and liabilities.
- Next comes the set of banks that have had **P/BV of above 1.5** for the most period.
 - The market insight on these banks is that they are long-term bets, and have access to sufficient capital.
 - But, these banks have to demonstrate a business model that works across cycles.
 - As comfort levels increase on the business model, the P/BV should climb, because runway for growth is available for these banks.
- Both the above set of banks (**'Alpha banks'**) have adequate access to capital and the intrinsic ability to grow market share.
- These banks would form one arm of the K.
 - The only constraint for these banks would be their ability to grow their liability franchise.
 - This is so because changes in market share on deposits are much slower than changes on the asset side.
- **The other arm:**
- The other private sector banks have a **P/BV of around 1 or much below 1.**
- For some of them that have demonstrated an ability to raise capital even through COVID-19 times, it is a business model issue.
 - It is also a question of whether they have strengths to grow profitably in a sustained manner.
- The new generation banks amongst these have to demonstrate consistent growth and stability on the liability side for a higher P/BV again.
- Quite a few of the old generation private sector banks have an issue with the credibility of their business model and their ability to generate above hurdle RoE through the cycle.
 - They may have a reasonably stable liability franchise.
 - But, the market perceives issues with their lending practices and thereby, asset quality.
 - That is the reason their P/BV is at very low levels.
 - They need to transform themselves by upgrading technology, add skilled manpower and improve management quality and governance.

How about the public banks?

- The current governance model of public sector unit (PSU) banks depresses valuations.
- Their P/BV would better reflect their intrinsic strengths when the banks are run in a professional manner with an ability to decide their own destiny.
- The largest bank in the country is surely part of the Alpha banks as its ability to attract capital and grow profitably is well accepted.

- The other PSU banks are viewed by the market broadly as a homogenous set with similar business models and skill sets.

What does this call for?

- Along with the government move to consolidate PSU banks into few large banks, a new vision needs to be drawn out for these banks.
- This is essential to ensure that they have differing value propositions to offer to the economy and market.
- There needs to be a clear level playing field amongst all banks.
- The government should move to paying transparent and fair compensation for services rendered to various State-sponsored programmes to all players.
- PSU banks should be free to adopt human resource practices to on-board lateral talent to fill in skill set gaps and adapt to the new digital world.
- This, coupled with better governance, is likely to result in higher P/BV for PSU banks.

What is the way forward?

- Certainly, the Alpha banks widen the gap with respect to the rest.
- This, consequently, widens the K Curve even more and squeezes out the weak banks.
- However, there is clearly more room for banks to migrate into the Alpha banks set.
 - The need now is to have more than the current handful of Alpha banks to propel it.
 - It is in all stakeholders' interest to make their own contributions to make that happen.
- [For NBFCs, the problem is complex; would both arms of the 'K' remain is the moot question for them.
- It is also to be seen if the more valued NBFCs would be the ones that become part of the Alpha banks in the long term.]

8.5 New Liquidation Regulations

Why in news?

Insolvency and Bankruptcy Board of India (IBBI) has amended the regulations for liquidation under the Insolvency and Bankruptcy Code (IBC).

What is IBBI?

- The IBBI was established in 2016 under the IBC, 2016.
- It is responsible for implementation of the IBC.
- [IBC consolidates and amends the laws relating to reorganization and insolvency resolution of corporates, partnership firms and individuals.]
- It has regulatory oversight over the insolvency professionals and professional agencies, Insolvency Professional Entities and Information Utilities.
- It writes and enforces rules for processes, like, **corporate** and **individual** insolvency resolution and bankruptcy under the Code.

What are the new regulations?

- The liquidator for a company can assign or transfer a not readily realisable asset to any person in order to ensure quick liquidation of companies which are unable to find bidders under IBC.
- The said transfer or assignment of the asset must be done in consultation with the stakeholders committee.
- The definition of "not readily realisable asset" includes any assets of the corporate debtor, which couldn't be sold through the available options.
- Any or all assets of the company under liquidation, which is facing some dispute or is involved in some fraudulent transaction, can be sold by the liquidator.



Do the changes in liquidation norms help?

- Among all, the changes to expedite the liquidation norms are likely to benefit **real estate companies** the most.
- One of the first changes to speed up the liquidation process is allowing the liquidator to assign or transfer any not readily realisable asset.
- This means that the liquidator can liquidate the entire assets of the company to different bidders as and when they come.
- The other change, which allows creditors to assign or transfer the debt to other creditors of the company, would speed up the liquidation process.

What are the likely challenges?

- The new regulations will have to be tested in a court of law as its definition of a not readily realisable asset is contentious.
- Another amended regulation that may be challenged is about the IBBI allowing the liquidator to distribute the un-disposed of assets among stakeholders, with the approval of the adjudicating authority.
- This will lead to creditors challenging the distribution of the assets, and claiming that one or the other party has been favoured by the liquidator.
- One has to wait and see how the courts decide on these issues before applying them to liquidation cases.

8.6 Corporates as banks - Concerns

Why in news?

- An Internal Working Group (IWG) of the RBI constituted to “review extant ownership guidelines and corporate structure for Indian private sector banks” recently submitted its report.
- Among the recommendations, a key and controversial one is to do with allowing large corporate/industrial houses to be promoters of private banks.

Had there been similar recommendations before?

- In February 2013, the RBI had issued guidelines that permitted corporate and industrial houses to apply for a banking licence.
- Some houses applied, although a few withdrew their applications subsequently.
- No corporate was ultimately given a bank licence.
- Only two entities qualified for a licence, IDFC and Bandhan Financial Services.
- The RBI maintained that it was open to letting in corporates. However, none of the applicants had met ‘fit and proper’ criteria.
- RBI had also emphasized on the public concern about bank governance at that time.
- In 2014, the RBI restored the long-standing prohibition on the entry of corporate houses into banking.
- The RBI Governor then was Raghuram G. Rajan who had headed the Committee on Financial Sector Reforms (2008).
- The Committee had been against the entry of corporate houses into banking.
 - It felt back then that it would be premature to allow industrial houses to own banks.
 - This prohibition on the ‘banking and commerce’ combine still exists in the United States today.
 - The same is certainly necessary in India till private governance and regulatory capacity improve.
- The RBI’s position on the subject has remained unchanged since 2014.

What is the rationale now?

- The Indian economy, especially the private sector, needs money (credit) to grow.
- The government-owned banks are far from being able to extend this credit.



- Even more, the government-owned banks are struggling to contain their own non-performing assets.
- Government finances were already strained before the COVID crisis.
- With growth faltering, revenues have fallen and the government has limited ability to push for growth through the public sector banks.
- Given all these, large corporates are the ones with the financial resources to fund India's future growth.
- Corporate houses can bring capital and expertise to banking.
- Moreover, not many jurisdictions worldwide bar corporate houses from banking.

What are the concerns with 'corporate-owned banks'?

- **Concentration of economic power** - Corporate houses can easily turn banks into a source of funds for their own businesses.
- In addition, they can ensure that funds are directed to their cronies, provide finance to customers and suppliers of their businesses.
- Even in private bank ownership, past regulators have preferred it to be well diversified i.e. no single owner has too much stake.
- **Risks** - RBI has always been of the view that the ideal ownership status of banks should promote a balance between efficiency, equity and financial stability.
 - A greater play of private banks comes with its own risk element. The global financial crisis of 2008 is a case in point.
 - On the other hand, a predominantly government-owned banking system tends to be more financially stable given the trust in government as an institution.
- Moreover, banks owned by corporate houses will be exposed to the risks of the non-bank entities of the group.
 - If the non-bank entities get into trouble, sentiment about the bank owned by the corporate house is bound to get affected.
 - In that case, depositors may have to be rescued through the use of the public safety net.
- **Connected lending** - The main concern in allowing large corporates to open their own banks is a basic conflict of interest, or more technically, "*connected lending*".
- In simple terms, connected lending refers to a situation where the promoter of a bank is also a borrower.
- In other words, it is possible for a promoter to channel the depositors' money into their own ventures.

Why is connected lending a big challenge?

- Connected lending has been happening for a long time and the RBI has been falling short in having a check on it.
- The recent episodes in ICICI Bank, Yes Bank, DHFL etc. were all examples of connected lending.
- The so-called ever-greening of loans is often the starting point of such lending, wherein one loan after another is extended to enable the borrower to pay back the previous one.
- **Regulation** - The IWG has called for a legal framework to deal with interconnected lending.
- It also recommended having a mechanism in place to effectively supervise conglomerates that venture into banking.
- However, any legal framework and supervisory mechanism will be less adequate to deal with the risks of interconnected lending in the Indian context.
 - Corporate houses are proficient at routing funds through a network of entities in India and abroad.
 - So, tracing interconnected lending will be a challenge.
 - Also, monitoring of transactions of corporate houses will require the cooperation of various law enforcement agencies.
- **Ex-post** - The RBI can only react to interconnected lending ex-post i.e. after substantial exposure to the entities of the corporate house has happened.

- Given this, it is less likely to be able to prevent such exposure.
- Even after spotting, it is challenging to make course corrections.
- This is because any action that the RBI may take in response could cause a flight of deposits from the bank concerned and precipitate its failure.
- **Public sector banks** - Beyond the idea of growing a bank on their own, the real attraction for corporate houses will be the possibility of acquiring public sector banks (PSBs).
- Notably, the valuations of PSBs have been weakening in recent years.
- Public sector banks now need capital that the government is unable to provide.
- So, the entry of corporate houses, if it happens at all, is likely to be a prelude to privatisation.
- In that case, any sale of public sector banks to corporate houses would raise serious concerns about financial stability.

How about NBFCs conversion into banks?

- The IWG argues that corporate-owned NBFCs have been regulated for a while and thus the RBI understands them well.
- However, there is much difference between a corporate house owning an NBFC and one owning a bank.
- Bank ownership provides access to a public safety net whereas NBFC ownership does not.
- The reach and influence that bank ownership provides are vastly superior to that of an NBFC.
- In all, it is advisable in the present context to keep the class of borrowers (big companies) apart from the class of lenders (banks).

8.7 RBI's IWG Recommendations

Why in news?

An Internal Working Group (IWG) of the RBI constituted to “review extant ownership guidelines and corporate structure for Indian private sector banks” recently submitted its report.

How is the Indian banking system's performance?

- India's banking system has changed a lot since Independence.
- Back then, banks were owned by the private sector, resulting in a “large concentration of resources in the hands of a few business families”.
- The government resorted to the nationalisation of banks in 1969 (14 banks) and again in 1980 (6 banks) to -
 1. achieve a wider spread of bank credit
 2. prevent its misuse
 3. direct a larger volume of credit flow to priority sectors
 4. make it an effective instrument of economic development
- But with economic liberalisation in the early 1990s, the economy's credit needs grew and private banks re-entered the picture.
- This had a notable impact on credit growth.
- However, even after three decades of rapid growth, the total balance sheet of banks in India still constitutes less than 70% of the GDP.
 - This is much less compared to global peers such as China, where this ratio is closer to 175%.
- Moreover, domestic bank credit to the private sector is just 50% of GDP.
 - In economies such as China, Japan, the US and Korea it is upwards of 150%.
- In other words, India's banking system has been struggling to meet the credit demands of a growing economy.
- There is only one Indian bank in the top 100 banks globally by size.

- Further, Indian banks are also one of the least cost-efficient.
- Clearly, India needs to strengthen its banking system to grow at a fast pace.
- In this regard, it is crucial to note that public sector banks have been steadily losing ground to private banks.
- Private Banks are not only more efficient and profitable but are also ready to take risks.
- It was against this backdrop that the RBI constituted the IWG to suggest reforms.

What was the IWG tasked to?

- Given the above, the IWG was asked to suggest changes that not only boost private sector banking but also make it safer.
- The terms of reference of the IWG inter alia included -
 1. a review of the eligibility criteria for individuals/entities to apply for banking license
 2. examination of preferred corporate structure for banks and harmonisation of norms in this regard
 3. review of norms for long-term shareholding in banks by the promoters and other shareholders

What are the key recommendations?

- **Promoter's cap** - The IWG has proposed to raise the cap on promoters' stake in private banks from the current 15% to 26% in 15 years.
- As regards non-promoter shareholding, a uniform cap of 15% of the paid-up voting equity share capital of the bank is prescribed for all types of shareholders.
- **Corporates as banks** - IWG has recommended that large corporate or industrial houses may be allowed as promoters of banks.
 - Large corporates refer to business houses having total assets of Rs 5,000 crore or more.
 - Here, the non-financial business of the group accounts for more than 40% in terms of total assets or gross income.
- However, this move will be rolled out only after making amendments to the Banking Regulation Act, 1949.
 - This is to deal with connected lending and exposures between the banks and other financial and non-financial group entities.
- The IWG also made a case for strengthening of the supervisory mechanism for large conglomerates, including consolidated supervision.
- **New Banks** - IWG recommended that the minimum initial capital requirement for licensing new banks should be enhanced -
 - i. from Rs. 500 crore to Rs. 1,000 crore for universal banks
 - ii. from Rs. 200 crore to Rs. 300 crore for small finance banks
- **NBFCs** - The panel suggested well run large NBFCs with an asset size of Rs. 50,000 crore and above, including those owned by a corporate house, may be considered for conversion into banks.
- This is however subject to completion of 10 years of operations and meeting due diligence criteria and compliance with additional conditions specified.
- **Payments Banks into SFBs** - The panel has proposed a reduction in the time-frame needed for payments banks to convert into small finance banks (SFB) to 3 years from 5 years.
- A change has also been suggested in the listing criterion for SFBs and payment banks.
- They may list -
 - i. within 6 years from the date of reaching the net worth equivalent to prevalent entry capital requirement prescribed for universal banks (or)
 - ii. 10 years from the date of commencement of operations, whichever is earlier
- **NOFHC** - Non-operative Financial Holding Company (NOFHC) should continue to be the preferred structure for all new licenses to be issued for universal banks.



- [NOFHC is a category of non-banking finance company (NBFC), registered as an NBFC with the RBI.
- It is governed by a separate set of directions issued by RBI.
- The objective is to separate several financial activities carried out by the same holding company.]
- However, it should be mandatory only in cases where the individual promoters / promoting entities/ converting entities have other group entities.
- Banks licensed before 2013 may move to an NOFHC structure at their discretion.
 - However, once the NOFHC structure attains a tax-neutral status, all banks licensed before 2013 shall move to the NOFHC structure within 5 years from announcement of tax-neutrality.
- The concerns about banks undertaking different activities through subsidiaries joint ventures (JVs)/associates should be addressed through suitable regulations till the NOFHC structure is made feasible and operational.
- Banks currently under NOFHC structure may be allowed to exit from such a structure if they do not have other group entities in their fold.
- **Licensing guidelines** - The panel called for the RBI to take steps to ensure harmonisation and uniformity in different licensing guidelines, to the extent possible.

What are the benefits of the recommendations?

- **Growth** - The RBI panel has suggested opening the field to new players.
- This may provide a wide choice to consumers in terms of products and pricing.
- By initial indications, 9 private sector and 5 state owned NBFCs may get qualified to set up, or turn into, banks adding to the present strength of 143 banks (June 2020).
- This is likely to expand the banking network that should help the economy reach its growth potential.
- **NBFCs** - The IWG's recommendation to allow conversion of large NBFCs into banks could increase the size of the banking system itself.
- With at least 10 years as shadow banks, they will have a different approach to credit appraisal; risk-based pricing, monitoring and recovery strategies.
- **NOFHC** - A non-operative finance holding company (NOFHC) structure to separate ownership and management control is expected to take care of the 'conflict of interest' issues.
- This is in line with the recommendations of the PJ Nayak Committee report reviewing 'Governance of Boards of Banks in India'.
- The committee even called for Public Sector Banks (PSBs) to separate government ownership and grant autonomy in their functioning.
- The transition of the ownership structure of existing private banks licensed before 2013 is also clearly outlined.

What are the challenges before the RBI?

- With expansion of number of banks and non-banks, the onus of the RBI to oversee the orderliness, sustainability and compliance standards will increase.
- Fintech companies, peer-to-peer lenders and neo-banks add to the challenges of the supervisory system.
- Cooperative banks and housing finance companies are already added to the list of regulated entities of the RBI.
- So, the RBI has to plan and reorient its human resources and draw in new talent to oversee the rapidly expanding banking system.
- It must especially track signs of stress and ensure that there is no systemic threat.

8.8 China's Negative Yield Bonds

Why in news?

There is rising demand for Chinese negative yield bonds amidst of COVID Pandemic.

What are negative-yield bonds?

- They are debt instruments which pays the investor a maturity amounts lower than the purchase price of the bond.
- Investors buy them during times of stress and uncertainty to protect their capital from significant erosion.

Why is there a huge demand from investors across Europe?

- A 10-year and 15-year bond gives positive return in China whereas interest rates in Europe has dropped significantly.
- As against minus -0.15% yield on the 5-year bond issued by China, the yields offered in safe European bonds are much lower, between -0.5% and -0.75% .
- China is one country that is set to witness positive growth (GDP expanded by 4.9% in the third quarter of 2020) when large economies are facing a contraction in their GDP for 2020-21 in these challenging times.
- China demonstrated that it has controlled the spread of a second wave of Covid-19 cases when Europe, US and other parts of the world are still suffering.

What is the key factor driving this demand?

- After the pandemic global central banks injected massive amount of liquidity which shot up the prices of various assets including equities, debt and commodities.
- Investors wish to park their money in negative-yielding government debt for the purpose of hedging their risk portfolio in equities.
- The fresh wave of the Covid-19 pandemic can lead to further lockdown in the economies (new US government may impose), which can push interest rates down, yields reduces further, and leading to profits for investors.

8.9 Real-time tax dispute resolution

Why in news?

Recently Finance Minister told CII audience that real-time mechanism are expected to be created to ensure tax differences don't become tax disputes.

What is the problem with existing mechanism?

- In the last five years, disputed direct tax claims have risen 2 times (from Rs 4.1 lakh crore in FY14 to Rs 8 lakh crore in FY19) while actual direct tax collections have risen 1.8 times (from Rs 6.3 lakh crore to Rs 11.4 lakh crore).
- The taxman is losing lots of cases in the tribunals and courts & a large share of the disputed tax claims are probably not genuine.
- Moreover, these disputed tax amounts are growing every year.

Why taxman appeals in most disputed cases even after losing it?

- They fear that the CAG & CBI will allege them for favouritism & investigate them.
- The government has to ensure that mediation panel has enough legal protection to do their job.
- Despite amending the **Prevention of Corruption Act** several times, it is unclear that the protection is absolute to them & it is unlikely tax officials manning the panel or even the independent experts in it would be willing to take a risk.

How this can be addressed?

- There needs to be some penalty against taxmen who make arbitrary demands.
- The tax Board needs to examine tax demands—where the tax implications are large—and to scrap them if they appear unreasonable and must issue necessary clarifications to field officials.
- Its high time that government should take a call aftermath the global arbitration panel awarded ruling in favour of Vodafone Plc.

9. INFRASTRUCTURE

9.1 Andhra Pradesh's Capital Conundrum

Why in news?

Andhra Pradesh Decentralisation and Inclusive Development of All Regions Bill, 2020, sets to replace earlier plan of building Amaravati as a capital to developing 3 capital cities.

What is 3 Capital Plan?

- The bill states that the State will have Visakhapatnam, Amaravati and Kurnool as the executive, legislative and judicial capitals of the State respectively.
- The plan is similar to that in South Africa.
- The Sribagh pact, which happened between **Royalaseema and coastal Andhra in 1937**, decided that if high court is in coastal Andhra, capital should be in Royalaseema
- K.C. Sivaramakrishnan (KCS) Committee has also made recommendations along similar lines
- Even Maharashtra has two capitals, **Mumbai & Nagpur**, with the latter being the winter capital of the state.

What are the benefits of the plan?

- It helps to promote Even development in the state as north-coastal Andhra and Royalaseema districts are the backward compared to the central coastal districts.
- A secretariat in Vizag can help in the development of regions **like Vizianagaram and Srikakulam** which consists of tribal and rural areas and are the most backward regions of the state.
- It helps to promote decentralised governance to spatially de-concentrate executive power, driven by region-specific economic activities.
- Eg: KCS Committee recommends that for Vizag region's suitability, it should have government offices relevant to local economic potential, such as for ports, shipping, fisheries and industry.

What are the challenges in it?

- Running legislative business with most of the secretariat located 400 km away can lead to high logistical costs and inefficiencies.
- There is lack of well-developed infrastructural network linking the growth centres.
- Visakhapatnam, in spite of its excellent and natural advantages, is lacking in infrastructure.
- It might unfold new problems as uncontrolled real estate interests can compromise the environmental interests.
- The recent environmental disasters, including the LG Polymers gas leak also expose the city's vulnerabilities.
- The bill also lacks appropriate details for the distributed development.

9.2 Power Pricing Reforms

Why in news?

The next set of power reforms is centring around amending the Electricity Act and/or the Tariff Policy proposed rather than the addressing of structural issues in power supply.

What are the structural issues in Power sector?

- There is surplus generating capacity-by March 2020, the installed capacity was 370.05 GW, but the electricity demand has never gone above 183 GW.
- Hence, states with more than 30-40% of installed capacity either backed down or shut down leading to 15-35% of total fixed cost to unscheduled electricity.
- Aggressive energy efficiency drive (**UJALA programme**) will reduce the power bill of consumers, but power demand decreases and adds to the fixed costs that utilities pay.



- Increasing renewables without retiring old and polluting coal-fired generators, long tenure of power procurement agreements, excess tied capacity are other such issues.

What are the concerns with respect to Tariff Policy?

- It aims to keep tariffs for all categories of consumers within the maximum range of 20% below or above the average cost of supply.
- An analysis by IEA finds that residential tariff on PPP basis in India is higher compared to Russia, China, the US, Indonesia, Canada, Korea, etc.
- Hence tariff hike on electricity will impact the household finance as cross-subsidies cannot be avoided at this time (creates price inflation especially in rural areas).
- States which are moving towards non-remunerative tariff fixation will lead to vicious circle of larger debt, unsustainable discoms & delegitimization of regulatory assets.
- Subsidies or tariff compensation to discoms are as high as (15%) & it is increasing rapidly which is not in pace with cost of supply.

What is the need of the hour?

- A trade-off between sufficiency and affordability of power must be arrived.
- The tariffs should reflect the cost of supplying electricity.
- A robust system of DBT should be developed to reduce the financial burden of consumers and free riding, theft of power by unscrupulous consumer can also be addressed by it.
- All the cross-subsidies should go out in phased manner and efficiency of utilities should be increased.
- State regulators are duty-bound to safeguard consumer interests and to encourage competition in the sector through policy interventions and reforms to ensure 24x7 quality power at affordable prices.

10. AGRICULTURE

10.1 Export Subsidy on Sugar

Why in news?

The central government announced that it is not considering extending its export subsidy for the 2020-21 sugar season.

What is the response?

- The sugar industry has reacted strongly to this announcement.
- It has warned of a 'vertical collapse' in the sector due to excessive stock, whose ramification can be felt in the years to come.

Why is the industry supporting exports even before the start of the season?

- At the start of the (October-November) sugar season, the industry draws up its balance-sheet.
- It takes into consideration the expected production, the carry forward stock of last season, minus domestic consumption and exports, if any.
- This balance-sheet decides the availability of sugar for the next season.
- There is an unusually high opening stock available for the next season (season of 2021-22).
- Without an export incentive like a government subsidy, this will result in a vertical collapse of the sector.

How will this inventory be corrected?

- One way of correcting this inventory is by **promoting export**.
- Sugar mills export both white as well as raw sugar.
- If export is promoted, the stock would be reduced, providing the mills a healthy inventory as well as liquidity from exports.



Why are mills reluctant to export sugar without a subsidy?

- The mills' reluctance stems from the gap between cost of manufacturing and the current price of raw sugar in international markets.
- The **price mismatch** has ruled out any export prospects as this would lead to further loss for the mills.
- Ironically, mills are facing this problem at a time when Indian sugar has made its mark in the international markets.

How did the mills manage to export sugar last season?

- The record export level last season was possible only because of the **subsidy programme** offered by the central government.
- Mills got a transport subsidy of Rs 10.448 per kg of sugar exported.
- This subsidy had helped the mills bridge the difference between production costs and international prices.
- The Union Ministry of Food and Civil Supplies was strict about **compliance**, which led to mills toeing the line in terms of exports.
- A **higher demand in international markets** had also seen Indian mills reporting good exports.
- But now, the central government ruled out any extension of the subsidy scheme as the international sugar scenario is currently stable.

What would be the impact?

- Industry watchers said that the delay in India's export subsidy scheme had seen sugar prices rallying.
- The benefit is largely being drawn by Brazil, which is the largest sugar manufacturer of the world.
- As a second Covid-19-induced lockdown looms large over Europe, Brazilian mills are considering diverting 48% of their cane towards sugar production.

Have last season's exports helped mills generate enough liquidity?

- No, the central government is yet to release the export subsidy due to the mills and the total due is as high as Rs 6,900 crore.
- Individual mills had taken loans to facilitate exports and now they have to pay interest to the banks.
- Unpaid interest of Rs 3,000 crore for maintaining buffer stock has also hit hard the balance sheet of mills.
- The pandemic has further delayed the release of subsidy.
- This has led to many mills not having sufficient liquidity at the start of the season.

But why can't mills concentrate on ethanol production?

- Recently, the central government has announced a Rs 1-3 per litre rise in the procurement price of ethanol.
- This is the second signal given by the government to mills to divert cane towards production of ethanol rather than sugar.
- In 2019, the central government had announced an interest subvention scheme for mills to augment production of ethanol.
- But diversion to ethanol will require more capital and time to materialise.

10.2 Farm Reform Laws

Why in news?

Thousands of farmers from Punjab, Haryana, Rajasthan and Uttar Pradesh have been marching toward Delhi in protest against the three central farm legislations.

What are the three recent farm reforms Acts?

- The three recent Acts on agriculture reforms are:
 1. The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020



2. The Farmers (Empowerment and Protection) Agreement of Price Assurance and Farm Services Act, 2020
 3. The Essential Commodities (Amendment) Act, 2020
- The Bills were introduced in the Parliament in September 2020 to replace the ordinances issued during the lockdown.

What are the key provisions of and rationale for the legislations?

Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020:

- **Need:**
 - Farmers in India suffered from various restrictions in marketing their produce.
 - There were restrictions for farmers in selling agri-produce outside the notified APMC (Agricultural Produce Market Committee) market yards.
 - The farmers were also restricted to sell the produce only to registered licensees of the State Governments.
 - Further, barriers existed in free flow of agriculture produce between various States owing to the prevalence of various APMC legislations enacted by the State Governments.
- **Provisions:**
 - It seeks to provide for the creation of an ecosystem where the farmers and traders have the choice relating to sale and purchase of farmers' produce.
 - This facilitates remunerative prices through competitive alternative trading channels.
 - It thus promotes efficient, transparent and barrier-free inter-State and intra-State trade and commerce of farmers' produce.
 - The produce will have a reach outside the physical premises of markets or deemed markets notified under various State agricultural produce market legislations.
 - It will also provide a facilitative framework for electronic trading.
 - It will also help farmers of regions with surplus produce to get better prices and consumers of regions with shortages, lower prices.

The Farmers (Empowerment and Protection) Agreement of Price Assurance and Farm Services Act, 2020

- **Need:**
 - Indian agriculture is characterized by fragmentation due to small holding sizes.
 - It has certain weaknesses such as weather dependence, production uncertainties and market unpredictability.
 - This makes agriculture risky and inefficient in respect of both input and output management.
 - In this context, this legislation will transfer the risk of market unpredictability from the farmer to the sponsor.
- **Provisions:**
 - This seeks to provide for a national framework on farming agreements.
 - It thus seeks to protect and empower farmers to engage with agri-business firms, processors, wholesalers, exporters or large retailers.
 - They can take up farm services and sale of future farming produce at a mutually agreed remunerative price framework.
 - It will also enable the farmer to access modern technology and better inputs.
 - It will reduce the cost of marketing and improve income of farmers.
 - Farmers will engage in direct marketing thereby eliminating intermediaries resulting in full realization of price.
 - Effective dispute resolution mechanism has been provided for with clear time lines for redressal.

The Essential Commodities (Amendment) Act, 2020

- The Act seeks to remove commodities like cereals, pulses, oilseeds, edible oils, onion and potatoes from the list of essential commodities.
- This will remove fears of private investors of excessive regulatory interference in their business operations.
- The freedom to produce, hold, move, distribute and supply will lead to harnessing of economies of scale and attract private sector/foreign direct investment into agriculture sector.

Rationale

- India has become surplus in most agri-commodities.
- But farmers have been unable to get better prices due to lack of investment in cold storage, warehouses, processing and export.
- This is because the entrepreneurial spirit gets dampened due to Essential Commodities Act.
- Farmers suffer huge losses when there are bumper harvests, especially of perishable commodities.
- In this context, the legislation will help drive up investment in cold storages and modernization of food supply chain.
- It will help both farmers and consumers while bringing in price stability.
- It will create competitive market environment and also prevent wastage of agri-produce that happens due to lack of storage facilities.

Why are only some states protesting?

- The protests are perhaps the loudest in northern states, traditionally India's wheat basket and rice bowl.
- The MSP system, in place since the mid-1960s, was part of the country's drive to reduce dependence on food imports.
- The MSP was meant to protect farmers against price crashes that could (and do) occur with large harvests.
- It is in its role as a floor price that a credible MSP matters to farmers.
- In principle, in deficit states (where demand exceeds local supply), market prices should be higher than the MSP, obviating the need for supporting the market at the level of MSP.
- However, this differential could be dampened or even eliminated by the distribution of grains under the National Food Security Act (NFSA).
- Seen in this light, the MSP matters more in historically surplus states of Punjab and Haryana.
 - Here, the government purchases over 80% of wheat and rice output for NFSA supply.
 - In comparison, in Bihar, the government procures at most a quarter of rice output of the state and no wheat.
- Also, in practice there is wide variation in the implementation of the MSP, across crops, states and categories of farmers.
 - A 2016 Niti Aayog report notes that all surveyed Punjab farmers reported selling at the MSP.
 - While other states often saw only one-third of farmers reporting sales at the MSP, and some, none at all (with sales at the lower open market prices).
 - The report also finds that large farmers are able to sell a greater share of their produce at the MSP as compared to smaller farmers.
 - Small farmers often rely on aggregators to sell their output.

What are the concerns?

- **Cooperative federalism** -Agriculture and markets are State subjects – entry 14 and 28 respectively in List II.
- So the farm legislations are being seen as a direct encroachment upon the functions of the States.
- It is seen as being against the spirit of cooperative federalism enshrined in the Constitution.



- The Centre, however, argued that trade and commerce in food items is part of the concurrent list.
- **End to MSP?** -APMCs were set up with the objective of ensuring fair trade between buyers and sellers for effective price discovery.
- APMCs can -
 - regulate the trade of farmers' produce by providing licences to buyers, commission agents, and private markets
 - levy market fees or any other charges on such trade
 - provide necessary infrastructure within their markets to facilitate the trade
- The Farmers' Produce Trade and Commerce Act aims at opening up agricultural sale and marketing outside the notified APMC mandis for farmers.
- Given this, dismantling of the monopoly of the APMCs is seen as a sign of ending the assured procurement of food grains at MSP.
- To the Centre's 'one nation, one market' call, farmers have sought 'one nation, one MSP'.
- Farmers call for addressing the gaps in the APMCs, instead of making these State mechanisms redundant altogether.
- **No mechanism for price fixation** - The Price Assurance Act offers protection to farmers against price exploitation.
- However, it does not prescribe the mechanism for price fixation.
- There is apprehension that the free hand given to private corporate houses could lead to farmer exploitation.
- Farmers are apprehensive about formal contractual obligations owing to the unorganised nature of the farm sector.
- There is also the lack of resources for a legal battle with private corporate entities.
- **Food security** – Easing of regulation of food commodities in the essential commodities list would lead to hoarding of farm produce during the harvest season when prices are generally lower.
- This could undermine food security since the States would have no information about the availability of stocks within the State.

11. ENVIRONMENT

11.1 Ban on Crackers

Why in news?

The National Green Tribunal (NGT) has prohibited the sale and use of firecrackers during Deepavali in certain places.

In what places there would a ban?

- The ban will be in effect in the National Capital Region of Delhi and in urban centres that recorded poor or worse air quality in November 2019.
- It provides concessions to cities and towns that have moderate air quality, by allowing them to burst green crackers at specified hours.
- These stipulations are to extend to Christmas and New Year if the ban continues beyond November, 2020.

What reason did it give?

- The NGT noted that Odisha, Rajasthan, Sikkim, Chandigarh, the Delhi Pollution Control Committee and the Calcutta High Court had already banned firecrackers this year.
- The NGT's reasoning gave primacy to the precautionary principle in **sustainable development** over employment and revenue losses.

Why the ban is essential during this time?

- There were fears of a COVID-19 case surge during the winter, so it was incumbent on the Centre to work with States and prevent the burning of farm stubble ahead of Deepavali.
- This annual phenomenon unfailingly pollutes the air across northern and eastern India, and imposes heavy health and productivity costs.
- In the absence of pollution from agricultural residue, there might have been some room for a limited quantity of firecrackers.
- But, climatic conditions of low temperature and atmospheric circulation at this time of year would still leave many in distress.
- Only damage control is possible now, including steps to address the concerns of the fireworks industry.

What should the government do?

- It should be evident to policymakers that their measures under the National Clean Air Programme (NCAP) must be demonstrably effective.
- [NCAP seeks to reduce particulate matter pollution by 20% to 30% by 2024.]
- With 40% of all pollution-linked deaths attributed to bad air quality, the governments should show a sense of accountability on the right to breathe clean air.

What is the long term solution?

- Tamil Nadu, where 90% of firecrackers are produced, has legitimate concerns on the fate of the industry this year.
- A transparent compensation scheme for workers and suitable relief for producers may be necessary.
- But the longer-term solution might lie in broad basing economic activity in the Sivakasi region, reducing reliance on firecrackers.

11.2 Marine Plastic Pollution

What is the issue?

- The global Marine plastic Pollution footprint is estimated to be 8-10 million tonnes annually.
- So a robust multipronged structured approach still remains the call of the hour.

What does this estimate reveal?

- A rough estimate suggests that close to 150 million tonnes (mt) of plastics have already polluted our oceans.
- Most of these plastics originate from land (i.e., it is not dumped into the ocean directly from vessels etc).
- Plastic packaging accounts for more than 62% of all items (including non-plastics) collected in international coastal clean-up initiatives.

What is India's position?

- Currently, India is considered the twelfth-largest source of marine litter.
- It is projected to become the fifth-largest by 2025.
- The Ganga has been documented as one of the top-five rivers dumping plastics into oceans.
- India consumes 16.5 mt of plastic annually, 43% of which was towards the manufacture of single-use plastic material.

What is the influence of the pandemic?

- The Covid-19 outbreak has exacerbated this situation, with the pandemic demanding the use of PPE that are often discarded in unscientific ways.
- [PPE - Personal Protective Equipment such as suits, masks and gloves]
- With India generating 101 tonnes/ day of Covid-19-related biomedical waste, the need to handle this stream of waste has grown significantly.



How do plastics reach water bodies?

- Mismanagement of plastic waste generated in coastal cities and urban centres are leading to this reaching the water bodies.
- Land-based sources are the main cause (up to 80% of total marine debris) of marine plastic pollution.
- The common leakage routes are litter accumulated and carried via open drains into rivers and water bodies.
- Other upstream routes contributing to this cause include waste directly dumped into water bodies and waste from dump yards carried into local rivers or lakes.

What is the problem?

- Single-use plastics are a common part of the political discourse.
- But, the implementation of their phase-out has been marred by the **lack of a common definition** that could unite the states for this cause.
- The definition assumes greater significance as it would impact multiple stakeholders, thereby, impacting the use of specific types of plastics.
- The success of this transition would then also be governed by the availability of affordable alternatives to fill voids created.
- The scarcity of India-specific data and action-oriented research makes it even more challenging for policymakers.

What could be done?

- Addressing the 'bulk of issue' by **curbing land-based sources** of marine litter must be the initial focus.
- Understanding this linkage would provide a holistic approach towards addressing the issue.
- While phasing out of single-use plastics established a political consensus, a clear roadmap involving the cities needs to be drawn up.
- This could begin with arriving at a common understanding and definition agreed upon internationally.
- This understanding would need to trickle to the government tiers in the form of bye-law inclusions.
- This in turn will guide the cities to phase out single-use plastics by 2022.
- **Institutional framework** towards achieving the common goal would need to be chalked out and streamlined.
- To address this issue, a robust **multipronged structured approach** still remains the call of the hour.

11.3 Dam Rehabilitation and Improvement Programme

Why in news?

The government has decided to grant approval to Phase 2 and 3 of the DRIP (Dam Rehabilitation and Improvement Programme).

Why is the project being expanded?

- The DRIP Phase 1 was doing a stellar job according to its mandate of providing dam safety since 2012.
- So, a third-party evaluation recommended the initiation of new phases.

What is the project cost?

- The government has decided to grant the approval to the DRIP at a project cost of Rs 10,211 crore.
- Of the total budget, Rs 7,000 crore will come from external assistance -the World Bank and the Asian Infrastructure Investment Bank.
- The balance will be borne by the concerned implementing agencies.

What is the significance of this decision?

- It is a step in the direction of water security, resilience against hazards and emergency action planning of the dam infrastructure around India.

- A perfect balance between structural resilience and economic resilience of dams has been envisioned through the DRIP project.
- Dam disasters are seen as matters of national shame; they not only lead to human tragedy, but also devastate the ecology.
- Thus, it is important that India becomes a leader in dam safety, which the DRIP Phases 1 and 2 will certainly be achieving in the coming times.

What is the need of a dam safety policy?

- In terms of the number of dams in the world, India ranks third, after China and the US, with 5,745 such projects.
- While 973 dams, or 18% of the total number, are 50-100-year old, 2,992 (56%) are aged 25-50.
- The age of these dams is what makes a robust Dam Safety Policy an absolute necessity.

How did DRIP originate?

- The event of the 1979 Machchhu dam disaster in Gujarat served as a wakeup call for dam safety and security in the country.
- The committee formed to investigate the disaster recommended clear guidelines for dam safety protocols along with a body to implement it.
- Thus, the DRIP was born and since then it has guarded the nation from impending disasters.
- Currently, 18 states are serviced by the DRIP's flagship project, the DHARMA (Dam Health And Rehabilitation Monitoring Application).

How will the new phases be implemented?

- The DRIP will be implemented over a period of 10 years in two phases.
- These phases will have each of six years, with two years overlapping from April 2021 to March 2031.
- The upcoming phases will bolster its operational mandate of dam safety like structural integrity, surveillance and maintenance, monitoring, etc.
- In spirit, the DRIP is the actualisation of the principles and guidelines laid down by the Dam Safety Bill, 2019.
- The new phases of the DRIP have a vibrant mix of **federalism** and **atmanirbharta** weaved into it.

11.4 Forest Landscape Restoration

Why in news?

In the **United Nations Biodiversity Summit** held on October 1 Environment Minister reiterated India's commitment to restore 26 million hectares of land by 2030.

What is Forest Landscape Restoration?

- Forest landscape restoration is a process of restoring the ecological integrity, improving the productivity and economic value of degraded forest landscapes.

What are the pledges w.r.t Forest Landscape Restoration?

- Article 5 in the 2015 **Paris Agreement** urges countries to act on deforestation and forest degradation for enhancing sinks and reservoirs of greenhouse gases.
- The Government of Germany and IUCN launched voluntary **Bonn Challenge** in 2011 with the target of restore 150 mha of degraded and deforested landscapes by 2020 and 350 mha by 2030.
- India joined the Bonn Challenge in 2015 with a pledge to restore 21 mha of degraded and deforested land & raised it to 26 mha by 2030.
- India's **NDC** targets to create an additional carbon sink of 2.5-3 billion tonnes of CO₂ equivalent from additional forest and tree cover until 2030.



What are the ambiguities in implementing FLR?

- There are no proper standard documents to arrive at common definitions, figures and methods on FLR in India.
- **The Desertification and Land Degradation Atlas** (2016) by Space Applications Centre (SAC), ISRO, says almost 96.4 m ha of India's geographical area are undergoing the process of desertification/land degradation.
- Whereas **Forest Survey of India's** reports identifies 63 m ha of potential areas for restoration.
- However, remote sensing-based area delineation can only point towards potential areas for FLR.
- Another concern is around establishing a baseline for FLR.
- Whether 2011, the year when the Bonn Challenge was launched or 2015 when India made the Bonn Challenge pledge should be considered.
- **Bonn Challenge Consultative Committee** is constituted to guide the progress and achievements in respect of commitments under the Bonn Challenge.

How to effectively implement FLR initiatives?

- There is a need for monitoring and reporting with correct data by utilising existing national monitoring frameworks (Green India Mission) to benefit from restoration.
- The Existing Institutions- Joint Forest Management, the Forest Protection Committee, Van Panchayats and Gram Sabhas- should bring stakeholders together.
- To ensure permanent restoration, stakeholders participation and sharing of responsibilities are required.
- Forest management needs to involve 3 objectives.
- One managing forest for water which includes enhancing groundwater recharge as well as maintaining surface flows and sub-surface flow in rivers and springs.
- Second is carbon sink & third is managing forests to ensure livelihood and sustenance of millions of people dependent on forest.
- These are necessary for India to achieve forest related national and international commitments.

12. SCIENCE AND TECHNOLOGY

12.1 Daylight Saving Time

Why in news?

Clocks in the US will "fall back" an hour on Sunday, signalling the end of Daylight Saving Time (DST) this year.

What is Daylight Saving Time (DST)?

- DST is the practice of resetting clocks ahead by an hour in spring, and behind by an hour in autumn (or fall).
- The rationale behind setting clocks ahead of standard time, usually by 1 hour during springtime, is to ensure that the clocks show a later sunrise and later sunset — in effect a longer evening daytime.
- In the Southern Hemisphere, the opposite happens, where countries "spring forward".
- Because the spring to fall cycle is opposite in the Northern and Southern Hemispheres, DST lasts from March to October/November in Europe and the US
- in New Zealand and Australia it lasts from September/October to April.

How many countries use DST?

- DST is in practice in some 70 countries, including those in the EU.
- India does not follow daylight saving time as countries near the Equator do not experience high variations in daytime hours between seasons.
- (There is, however, a separate debate around the logic of sticking with only one time zone in a large country.)



- Most Muslim countries do not use DST — during the holy month of Ramzan which could mean delaying the breaking of the fast for longer.
- Morocco has DST, but suspends it during Ramzan. However, Iran has DST, and stays with it even during Ramzan.

What does this system mean to achieve?

- The key argument is that DST is meant to save energy.
- According to a report, it was initially followed by a group of Canadians on July 1, 1908, when residents of Port Arthur, Ontario, turned their clocks forward by an hour.
- Other locations in Canada soon followed suit.
- However, the idea did not catch on until Germany and Austria introduced DST in 1916 to minimise the use of artificial lighting to save fuel during WWI.

How relevant is DST now?

- A century ago, when DST was introduced, more daylight did mean less use of artificial light.
- But modern society uses so much energy-consuming appliances all day long that the amount of energy saved is negligible.
- Among the biggest disadvantages is the disruption of the body clock or circadian rhythm.

What are the countries that want DST gone?

- In March 2020, the European Union moved to scrap the custom of DST, with the European Parliament voting 410-192.
- After 2021, EU member states will choose between “permanent summertime” or “permanent wintertime”.

12.2 IRNSS

Why in news?

Indian Regional Navigation Satellite System (IRNSS) was recognised by the International Maritime Organisation (IMO).

What happened?

- The Maritime Safety Committee (MSC) of the IMO recognised the IRNSS as a component of the World-wide Radio Navigation System (WWRNS).
- After the US, Russia and China that have their own navigation systems, India became the fourth country to have its system recognised by IMO.

What is the IMO?

- The IMO is the United Nations’ specialised agency.
- It is responsible for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships.

What is the IRNSS?

- The IRNSS is an independent regional navigation satellite system developed by India.
- The system is designed to provide accurate position information service to assist in the navigation of ships in the Indian Ocean waters.
- It is based on the Indian Space Research Organisation’s (ISRO) satellites that are used for navigation.
- It could replace the US-owned Global Positioning System (GPS) in the Indian Ocean waters up to 1500 km from the Indian boundary.

What does the IMO’s recognition of the IRNSS mean?

- With the recognition, the IRNSS is similarly placed as GPS, most commonly used by marine shipping vessels across the world.
- Unlike GPS, IRNSS is a regional and not a global navigation system.



- This is also a significant achievement towards the 'Atmanirbhar Bharat' initiative.

Who can make use of the IRNSS?

- While the system will be open to all including security agencies, all merchant vessels including small fishing vessels are authorised to use the system.
- Vessels that have transponders will be tracked by satellite navigation showing accurate position in the Indian Ocean region.
- At any given time, there are at least 2,500 merchant vessels in Indian waters that can all use the IRNSS.

Why was it necessary for India to have its own navigation system?

- An overdependence on one system (GPS) cannot be safe.
- The IMO encouraged countries to design their own navigation systems.
- The recognition accorded to IRNSS was in the process for two years.
- The IMO issued a circular announcing the recognition of the IRNSS to its member states.

12.3 Regulating Medical Devices

What is the issue?

- For a country with the fourth-largest medical devices foothold in Asia, India must aim to increase local investment and production.
- The success of India's aim to be self-reliant will be defined by the regulatory framework in medical devices.

What is the transition?

- Japan is paying its companies to shut their manufacturing plants in China.
- American companies are planning to shift their base from China.
- So, these are times of strategic transitions which India must use wisely.

What is the history?

- In 2017, voluntary certifications began in India with the Indian Certification for Medical Devices (ICMED) of Quality Council of India.
- The ICMED gave process certification to many medical devices using notified bodies.
- The industry couldn't understand the need for the voluntary certification scheme, and this was opposed by the CII and the FICCI.
- Medical device experts see it as a deviation from global practices.
- This indicates that the regulatory environment in India is complex.

What kind of reform is needed?

- Industry representatives recommended that any new legislation should be aligned with international regulatory best practices.
- They also suggested that the industry should be involved and consulted throughout the process.
- India aims to transform into a global manufacturing hub.
- So, the regulatory mechanism should be harmonised with the global best practices recommended by the International Medical Device Regulators Forum (IMDRF).

What are the global standards?

- Essential principles of **safety and performance** are important.
- To demonstrate compliance with essential principles, there are consensus standards developed by global standards bodies such as the ISO, and recognised by stringent regulatory authorities and the IMDRF.
- There are two kinds of standards:

1. Horizontal (ones that describe the process or practice that is applied across a range of devices, like sterilisation, software, etc)
 2. Vertical (specific test methods or performance aspects of a specific grouping of devices).
- These standards have been segregated so that a manufacturer can develop a medical device in accordance with key elements of essential principles.

What is the problem?

- Procurement agencies have been procuring commodities complying with a specific standard.
- In the case of medical devices, they were faced with the challenge in procurement as the same product with different specifications and varying complexities was before them.
- This led to complexities in procurement.
- Hence, the Bureau of Indian Standards (BIS) was requested to develop standards to procure medical devices.

What could be done?

- The BIS must adopt international standards to encourage Indian manufacturers to conquer the global market.
- It should also help global players introduce new products and increase investments in India.
- The US, the EU, Japan and other IMDRF countries rely on these consensus standards to increase predictability, streamline premarket review and provide clearer regulatory expectations.

12.4 Electronic Vaccine Intelligence Network

Why in news?

PM Narendra Modi said the government is using eVIN with UNDP to identify primary beneficiaries and the vaccine distribution networks.

What is eVIN?

- Electronic Vaccine Intelligence Network (eVIN) is an indigenously developed technology that digitises vaccine stocks and monitors the temperature of the cold chain through a smartphone application.
- It supports better vaccine logistics management & Universal Immunization Programme.

Who will guide the vaccine introduction to all states/ UTs?

- **National Expert Group on Vaccine Administration for Covid-19 (NEGVAC)** has been formed to guide the strategies for vaccine introduction.
- According to directions of **Covid Vaccine Beneficiary Management System (CVBMS)**, total of 5,145 trained vaccinators (ANM) have been identified for Covid-19 vaccination purposes across Haryana & staff nurses and pharmacists can be called in as per requirement.
- A total of 1,70,992 primary beneficiaries (healthcare workers) from both government and private facilities have been uploaded on the central government's portal.
- It is expected that population will be prioritised based on risk assessment for vaccination and subsequently other groups will be included.

How is Haryana prepared for cold chain spaces?

- Username and passwords have been created for all district and state administration to conduct mock sessions regarding storage preparedness.
- It has one State Vaccine Store (SVS), four regional stores and 22 district vaccine stores besides 659 cold chain points.
- Allocation of extra cold chain equipment like deep freezers and ice lined refrigerators have been received from the Centre.
- Directives for creating extra spaces for dry stock and cold chain spaces have already been issued to all the districts.

12.5 Lung fibrosis



Why in news?

An article published in **Lung India** indicates that pulmonary fibrosis is reported in vast number of post-Covid-19 survivors.

What is pulmonary fibrosis?

- It is the inflammation of the tissue around the air sacs of the lungs leading to fatigue and shortness of breath.
- The lungs become stiff and the ability of oxygen to enter the blood circulation diminishes.

How serious is the threat from lung fibrosis?

- It usually occurs in elderly people but it is now common among Covid-19 patients.
- While the majority of patients affected by Covid-19 virus will stabilise or improve over time, some will progress to advanced lung fibrosis.
- Hence large numbers of fibrosis cases may potentially result from the pandemic.

Which patients are like to develop long-term pulmonary abnormalities?

- It is too early to determine it.
- In the case of a 45-year-old non-smoker, who was in ICU with severe Covid-19 ARDS progressed to end stage fibrotic lung disease within 28 days, despite receiving steroids.
- However, those with moderate or severe disease, with persisting symptoms or radiological abnormalities, would require further investigation.

How can anti-fibrotic drugs prevent and treat of post-Covid fibrosis cases ?

- Anti-fibrotic drugs are believed to be useful in patients with acute severity of interstitial lung disease (ILD)
- Apart from drugs, focus should be on supportive management as well — giving home oxygen therapy, chest physiotherapy (breathing exercises under supervision) and good nutrition.
- Patients with the most severe ARDS are most likely to end up in fibrosis & they require prolonged ventilation with high oxygen requirements along with anti-fibrotics steroids.
- It is essential that post-Covid recovery clinics must extensively follow up on patients up to a total duration of 36 months to better understand the natural course of the disease.

12.6 Retiring the phone-based OTPs

Why in news?

There is need to replace ageing OTP model with alternative options.

What is the problem with the current OTP model?

- Customers with good cell receptions are requesting for OTP resend & it doesn't function in dead zones.
- SMS-based OTPs are not secure & can be decrypted i.e. they are susceptible to call forwarding attacks or SIM jacking.
- SIM jacking means gaining access to phone accounts by sending malware to followers.
- If 0.1 % of OTP request fail, it will lead to lakhs of incomplete banking transactions.

What are the alternative options to OTP?

- OTP's can be sent to the customer's registered email address, as a password-protected PDF file as State Bank of India does.
- ATM machines can be repurposed to become OTP generators. Customer can request an ATM screen to print a backup set of five OTPs (expire in 30 days) which could be used when OTPs don't arrive promptly.
- WhatsApp messages can be another viable option as it does not require SIM card, can work with WiFi & message delivery is more reliable.
- Moreover, WhatsApp messages cannot be snooped as they are secured with 128-bit encryption, 100% add free unlike like Google, Facebook, Twitter, or YouTube & every Indian mobile phone has WhatsApp installed.



- Another option can be employing an authenticator app- from Google or Microsoft- which generates a new 6-8-digit code each minute in customer's phone. Once activated, it does not require a network connection to generate the OTP.
- Indian banks have tried their own authenticators but have rejected them because of technical glitches.
- Hence, banks should add backups to the ageing OTP/SMS platform, and over time, transit to a more secure, internet-based, or app-based mechanism to deliver the second-factor authentication code.

13. NATIONAL SECURITY

13.1 Army Aviation Corps

Why in news?

The Army Aviation Corps (AAC), the youngest Corps of the Indian Army, celebrated its 35th Corps Day on November 1, 2020.

How did Army Aviation Corps originate?

- The origin of the AAC can be traced back to the raising of the Army Aviation wing of the Royal Air Force in India in 1942.
- Its origin is also linked to the subsequent formation of the first Indian Air Observation Post in August 1947.

What are Air Observation Post units?

- The Air Observation Post units primarily acted as artillery spotters.
- These are the elements that help the artillery in directing the fire and also giving air support to ground forces.
- In the wars of 1965 and 1971, the Air Observation Post helicopters played a key role in the battlefields by flying close to the enemy lines and helping ground assets spot targets.

When did the Corps raise separately?

- The Corps was raised as a separate formation on November 1, 1986.
- The AAC now draws its officers and men from all arms of the Army, including a significant number from the artillery.
- Immediately after raising, the units of the Corps were pressed into action in Operation Pawan by the Indian Peacekeeping Forces.
- Ever since, AAC helicopters have been a vital part of fighting formations in all major conflict scenarios and a life-saving asset in peace times.
- Over the years, the Corps has grown by additions of new units, equipment and ground assets.
- Along with this, its roles and capabilities too have grown.
- In 2019, the President's Colours were presented to the Army Aviation Corps in a ceremonial parade.

What is the President's Colours?

- The President's Colours is a ceremonial flag.
- It is awarded to military units or institutions as symbol of their excellence.
- It is awarded to recognize their contributions during war and peace.

What is the role of AAC helicopters?

- Their main roles include reconnaissance, observation, casualty evacuation, essential load drops, combat search and rescue.
- The AAC helicopters also participate in Humanitarian Aid and Disaster Relief (HADR) operations in peace times.
- In some scenarios, Army helicopters can also act as Airborne Command Posts, replacing the ground command posts if needed.



- The Indian Army has further sharpened the AAC edge by adding dedicated aviation units along with the various operational Corps and Command formations.

What helicopters does ACC operate?

- The AAC operates Chetak, Cheetah, Lancer, Advanced Light Helicopter (ALH) Dhruv, and ALH Weapon System Integrated (WSI) Rudra.
- Acquisition of new helicopters is in the pipeline, in the backdrop of concerns over the fleet of the ageing Cheetah and Chetak helicopters.
- Initially, AAC operated non-weaponised helicopters and attack helicopters were only with the Air Force.
- But post 2012, the government has allowed induction of weaponised choppers in the AAC.

What is its role in modern day battlefield?

- In the modern-day battle formation, elements like infantry, short and long artillery, armoured formations and Army helicopters are closely linked with each other.
- These use information and data points collected from ground and airborne surveillance assets and satellites.
- Helicopters are a key element of this battlefield, which is going to become even more technology-intensive in the future.

What is its role in counter insurgency-terrorism ops?

- These battle machines can perform both observation/recce and attack functions.
- So, they are an ideal choice for Counter Insurgency and Counter Terrorism (CI-CT) operations to tackle difficult terrains.
- They are also avoiding ground-based threats like Improvised Explosive Devices and ambushes.
- Having said this, use of air assets in CI-CT operations is always done with caution because of the possibility of collateral damage.

What is needed?

- With the motto Suveg and Sudridh, the youngest corps of the Indian Army is set to further grow in its tactical importance in the battlefield.
- There is a need for a stronger push of modernisation and enhancement of assault capabilities to take further its role of 'force multiplier.'

13.2 Coastal Security after 26/11 Attacks - Information Management and Analysis Centre

What is the issue?

- The Navy's Information Management and Analysis Centre (IMAC) will soon become a National Maritime Domain Awareness (NDMA) centre.
- Also, 2020 marks the 12th anniversary of the 26/11 Mumbai terror attacks; here is a look at coastal security in India after the 26/11 attacks.

How do the security mechanisms work?

- The Indian Navy is responsible for overall maritime security (coastal and offshore).
- It is supposed to be assisted in coastal security by the Coast Guard, State Marine Police and other agencies.
- Post 26/11, the Coast Guard was additionally designated as the authority responsible for coastal security in territorial waters.
- Thrust was given to enhance surveillance in territorial waters by all agencies including the Navy, Coast Guard, Marine Police, and Customs.

What was the need for IMAC?

- The ten Lashkar-e-Toiba terrorists who carried out the 26/11 attacks had entered Mumbai through the sea, using inflatable speedboats.
- In the aftermath of the attacks, several vulnerabilities of coastal security came to the fore.

- The IMAC was created so that another act like the 26/11 attacks do not take place.

What is IMAC?

- To ensure that the Indian Navy, Coast Guard and Marine Police work in an integrated manner, the Information Management and Analysis Centre (IMAC) was set up in 2014.
- Based in Gurgaon, IMAC is the nodal centre for maritime security information collation and dissemination.
- It is jointly operated by the Navy and Coast Guard.
- It is the cornerstone of the National Command Control Communication and Intelligence (NC3I) network.
 - The NC3I network is for monitoring maritime traffic in India's area of interest.
- IMAC's task is to facilitate exchange of maritime security information among various national stakeholders, and generate a common operational picture.
- Since threats in maritime domain have a transnational character, IMAC feeds data from international sources as well.
- It is important to note that IMAC tracks only non-military or commercial ships, known as white shipping.
- Military ships, or grey hull ships, are tracked by the Directorate of Naval Operations, as this is on a classified network.

What is its scope?

- IMAC focuses on ships passing through the Indian Ocean Region (IOR).
 - The IOR, 5500 nautical miles wide by 7500 nm long, includes 35 countries.
 - It is the busiest maritime trade route, with 11,000 to 12,000 ships present in it at any given time.
- Officers at its headquarters can look at all ships that transmit signals to an Automatic Identification System (AIS) when passing through IOR.
- They can look at information including route, destination, nationality and ownership for each vessel.
- And at any given point, IMAC can get data points such as how many Chinese vessels are in the region or how many vessels are headed to a particular port.
 - E.g. Sources suggest a "steady rise" of Chinese research vessels in the IOR over the last few years.
 - The data also show an increase in Chinese fishing vessels in the high seas in IOR, from approximately 300 four years ago to around 450 now.
- IMAC can also check if a vessel has changed its identity, or if it has been involved in law-enforcement issues in other countries.
- IMAC has linkages with a number of national and international organisations, from which it collates data, and analyses patterns.
- It also alerts relevant authorities if anything is found suspicious.
- The following are some of the sources for data for IMAC:
 - i. The Vessel and Air Traffic Management System under the Petroleum Ministry.
 - ii. The National Automatic Identification System (AIS), which has 87 stations.
 - iii. The Long-Range Identification and Trading Information from 174 countries, which comes from the Directorate General of Shipping.
 - iv. Space-based AIS that provide information on offshore and deep sea vessels, etc.
 - v. The Indian Ports Authority, information from which has been integrated recently.
- These data are then analysed with various tools that create a comprehensive picture for each vessel.

What are the shortfalls to be addressed?

- When a vessel does not transmit any information about itself through the AIS, it is known as a dark ship.
- There are limited options to track them.



- After 26/11, it was critical for India to have a robust tracking system for all fishing vessels.
- However, while some big vessels may choose to not transmit on AIS, many of India's smaller shipping vessels have no transponders.
 - Of the 2.9 lakh fishing vessels in India, around 60% are smaller than 20 m, most of them without transponders.
- ISRO has been trying to develop a solution for fishing vessel tracking over the last one decade.
- These gaps are exploited by subversive elements.
- Certainly, fishermen's boat integration with IMAC will guard coastal frontiers better.

PRELIM BITS

14. HISTORY, ART & CULTURE

14.1 Hoysala Lakshmi Devi Temple

- Recently, a Hoysala-era idol of Goddess Kali of the Lakshmi Devi Temple at Doddagaddavalli, Karnataka has been found damaged.
- Lakshmi Devi temple was built by the Hoysalas in the year 1114 CE during the rule of king Vishnuvardhana.
- The building material is Chloritic schist, more commonly known as soapstone.
- The temple does not stand on a jagati (platform), a feature which became popular in later Hoysala temples.
- The temple is a Chatuskuta construction (4 shrine and tower) and the towers are in Kadamba nagara style.
- The mantapa is open and square, the reason for the square plan is the presence of shrines on all four sides of the mantapa.
- The main deity is Goddess Lakshmi whereas all Hoysala temples are dedicated to either Lord Vishnu, Lord Shiva and in some cases to Jains.
- An archaeological Survey of India (ASI) monument and is also among the monuments proposed for the UNESCO World Heritage Site.

Hoysala Temple Architecture

- It is the building style developed under the rule of the Hoysalas and is mostly concentrated in southern Karnataka.
- Hoysala temples are sometimes called hybrid or vesara as their unique style seems neither completely dravida nor nagara, but somewhere in between.
- They are easily distinguishable from other medieval temples by their highly original star-like ground-plans and a profusion of decorative carvings.
- The temples, instead of consisting of a simple inner chamber with its pillared hall, contain multiple shrines grouped around a central pillared hall and laid out in the shape of an intricately-designed star.
- The most characteristic feature of these temples is that they grow extremely complex with so many projecting angles emerging from the previously straightforward square temple.
- The plan of these temples starts looking like a star, and is thus known as a stellate-plan.

14.2 Shaheedi Divas

- Shaheedi Divas is the Martyrdom Day of Guru Tegh Bahadur, the ninth Guru of Sikhism.
- He was publicly killed in 1675 on the orders of Mughal emperor Aurangzeb in Delhi for refusing to convert to Islam.



- He was who sacrificed his life for the sake of people who did not even belong to his community.
- Anandpur Sahib, the famous holy city and a global tourist attraction in the foothills of Himalayas, was founded by Guru Tegh Bahadur.
- Guru Har Gobind christened Tyaga Mahal as Teg Bahadur after the latter showed immense courage in the Battle of Kartarpur in 1635 against the Mughals.
- He showed the path of divinity to his disciples by teaching them to overcome greed, desire, ego and pain.

14.3 Chhath Puja

- Chhath is a Hindu festival dedicated to the Sun god and his wife Usha in order to thank them for bestowing the bounties of life on earth.
- The Goddess who is worshipped during the famous Chhath Puja is known as ChhathiMaiya.
- The main worshipers, called Parvaitin, are usually women. However, many men also observe this festival as Chhath is not a gender-specific festival.
- The word chhath means sixth and the festival is celebrated on the sixth day of the month Kartika of the Hindu lunar Bikram Sambat calendar.
- The festival is observed most elaborately in Mithila Province of Nepal, Terai-Madhesh region of Nepal, Indian states of Bihar, Jharkhand and UP.
- It is also more prevalent in areas where migrants from those areas have a presence.

14.4 Gandhara Civilisation

- The Gandhara Civilization existed in what is now Northern Pakistan and Afghanistan from the middle of the 1st millennium BCE to the beginning of the 2nd millennium CE.
- Gandhara was not known to have been geographically described in detail until the pilgrimage of the Buddhist monk Xuanzang (Hsüan-tsang, 602- 664 CE) in the 7th century CE.
- He visited the region during the tail end of the Gandhara civilization, after the time when it had achieved its greatest feats and was falling into decay.
- Well-known cities of the gandhara include
 1. Takshasila (taxila),
 2. Purushapura (peshawar)
 3. Pushkalavati (mardan),
- It has been speculated that Gandhara was a triangular tract of land about 100 kilometers east to west and 70 km north to south, lying mainly to the west of the Indus River and bounded on the north by the Hindukush Mountains.
- The name of Gandhara may have several meanings, but the most prominent theory relates its name to the word Qand/Gand which means "fragrance", and Har which means 'lands'.
- Hence in its simplest form, Gandhara is the 'Land of Fragrance'.
- Gandhara witnessed the rule of several major powers of antiquity as listed here:
 1. Persian Achaemenid Empire (c. 600-400 BCE)
 2. Greeks of Macedon (c. 326-324 BCE),
 3. Mauryan Empire of Northern India (c. 324-185 BCE),
 4. Indo-Greeks of Bactria (c. 250-190 BCE),
 5. Scythians of Eastern Europe (c. 2nd century to 1st century BCE),
 6. Parthian Empire (c. 1st century BCE to 1st century CE),
 7. Kushans of Central Asia (c. 1st to 5th century CE),
 8. White Huns of Central Asia (c. 5th century CE)



9. Hindu Shahi of Northern India (c. 9th to 10th century CE)
10. This was followed by Muslim conquests by which time we come to the medieval period of Indian history.

14.5 Thotlakonda Buddhist Complex

- Thotlakonda Buddhist Complex is situated on a hill near Bheemunipatna, closer to Mangamaripeta arch formation.
- Thotlakonda was well within the influence of ancient Kalinga, which was an important source of dissemination of Buddhism to Sri Lanka and various parts of Southeast Asia.
- It provides an insight into the process of transoceanic diffusion of Indic culture, especially Buddhism.
- A hill on the sea coast with salubrious climate was an ideal attraction for the Buddhist monks to build a monastery complex here.
- Nikaya Buddhism appears to have been practiced here, including the worship of Gautama Buddha through symbols such as padukas and other material remains rather than using human representation.
- Excavations established the existence of a Hinayana Buddhist complex which flourished 2000 years ago.
- The excavations reveal Satavahana dynasty lead and Roman silver coins indicating foreign trade.
- Thotlakonda's peak activity was between the 2nd century BCE and the 2nd century CE owing to brisk Roman trade and religious missions sent abroad.

14.6 Indian Miniature Paintings

- Indian miniatures are small-scale highly detailed paintings.
- They trace back to at least 9th century CE, and are a living tradition with many contemporary artists still pursuing the art form.
- By the 12th century free from restrictions of paintings on palm leaf Indian miniatures grew bigger in format.
- They began to include more intense colours and extensive border embellishments, with the influence of paintings styles of Persia and mamluks under the ottomans.
- Miniature paintings began to break new ground in colour with golds, silver and a new ultramarine blue from lapis lazuli.
- Miniatures were heavily influenced by Indian literature and were often used as illustration to texts as well as individual paintings.
- Indian painters illustrated epics fables and religious texts visualizing these stories through art for those who might not be able to read.
- The painters of these tiny, extraordinary works were craftspeople of the highest order.
- Often brushes with only a single bristle would be used to pick out fine details and the technique is very refined.

14.7 Warli Art

- Warli is a traditional art form of Maharashtra, its roots can be traced to as early as the 10th century A.D.
- It is drawn by Warli Tribe, who are an indigenous tribe living in the Mountainous as well as coastal areas of Maharashtra-Gujarat border and surrounding areas.
- They speak an unwritten Warli language which belongs to the southern zone of the Indo-Aryan languages.
- Warli paintings are mainly dominated by basic geometric shapes like circles, triangles and squares.
- In warli paintings the circles represent the sun and moon, the triangles represent the mountains and the squares are considered as the central motifs of the painting.
- People and animals are represented by two inverted triangles joined together, where the upper triangle is the torso and the lower triangle is the pelvis.

- The central theme of the paintings are scenes portraying hunting, fishing, farming, festival and dances, trees and animals are used to surround the central theme.

14.8 Lady of Bietikow

- Recently German researchers are piecing together the life of a prehistoric woman from a skeleton found during an excavation.
- The woman is believed to be died more than 5,000 years ago in the Neolithic period.
- Researchers has named her the “Lady of Bietikow,” a village of the same name in north eastern Germany’s Uckermark region.
- The skeleton had been buried in a settlement in a squatting position, one of the oldest known forms of burial.
- Investigations have shown that she was between 30 and 45 years old and died more than 5,000 years ago.
- The Lady of Bietikow’s teeth has been severely eroded and missing completely in some places.
- Based on these researchers have come to an interesting conclusion that she might had consumed certain grains that were very rich in fibre, very hard, that cause the teeth to wear out easily.
- It was during the Neolithic period that humans first introduced grains into their diet, since they could be stored more easily than meat and could also be used as a means of payment.
- However, this led to a deterioration in people’s general health.

14.9 Sarnath

- Sarnath is a place located 10 kilometres north-east of Varanasi city near the confluence of the Ganges and the Varuna rivers in Uttar Pradesh, India.
- In ancient times, this place was known by many names such as Isipatana, Rishipatana, Mrigadava and Mrigadaya.
- The word Sarnath comes from a corruption of the name Saranganatha (lord of deer).
- It is the site of the Buddha’s Dhammacakkappavattana Sutta, which was his first teaching after attaining enlightenment, in which he taught the four noble truths and the teachings associated with it.
- Dharmarajika stupa is the one said to have been built by Ashoka to commemorate Buddha’s first sermon.
- Alexander Cunningham, first Director-General of Archaeological Survey of India) excavated the Dhamekh, Dharmarajika, and Chaukhandi stupas along with a monastery and temple between 1834 and 1836.
- The Chinese pilgrim Hiuen-Tsang (602-664) left detailed accounts of the Dharmarajika stupa and Ashoka’s lion pillar.

14.10 Char-Chaporis Island and Miya Muslims

- Char-chaporis are shifting riverine islands of the Brahmaputra.
- A char is a floating island while chaporis are low-lying flood-prone riverbanks.
- These islands are primarily inhabited by the Muslims of Bengali-origin.
- They are derogatively referred to as ‘Miyas’.
- The ‘Miya’ community comprises descendants of Muslim migrants from East Bengal (now Bangladesh) to Assam.
- The community migrated in several waves starting with the British annexation of Assam in 1826, and continuing into Partition and the 1971 Bangladesh Liberation War.
- It has resulted in changes in demographic composition of the region.
- According to official data the population of chars at 24.90 lakh as per a socio-economic survey in 2002-03.
- While Bengali-origin Muslims primarily occupy these islands, other communities such as Misings, Deoris, Kocharis, Nepalis also live in the island.



14.11 Earliest Dairy Production

- Recently study by archaeologists has found that dairy products were being produced by the Harappans as far back as 2500 BCE.
- The finding reveals the earliest evidence of dairy production.
- The results of the study are based on molecular chemical analysis of residue in shards of pottery found at the archaeological site of KotadaBhadli, in Gujarat.

Excavations in Indus Valley

- In the 1920s, the Archaeological Department of India carried out excavations in the Indus valley wherein the ruins of the two old cities, viz. Mohenjodaro and Harappa were unearthed.
- In 1924, John Marshall, Director-General of the ASI, announced the discovery of a new civilisation in the Indus valley to the world.
- From the excavations it is found that IVC was faceless, means no king, no bureaucratic organisations, but there were very close regional interactions between settlements, a symbiotic relationship of give and take that helped the civilisation survive for so long.
- The year 2020 marks 100 years of discovery of Indus Valley Civilisation.

14.12 Guru Ram Das

- Guru Ram Das was the fourth of the ten Gurus of Sikhism, he lived between 1534 – 1581.
- His birth name was Jetha, he became the Guru of Sikhism in 1574 and served as the Sikh leader until his death in 1581.
- He appointed his own son as his successor, and unlike the first four Gurus who were not related through descent, the fifth through tenth Sikh Gurus were the direct descendants of Ram Das.
- Guru Ram Das is credited with founding the holy city of Amritsar in the Sikh tradition.
- He shifted his official base to lands identified by Guru Amar Das as Guru-ka-Chak.
- This newly founded town was eponymous Ramdaspur, later to evolve and get renamed as Amritsar.
- While Guru Amar Das introduced the manji system of religious organization, Ram Das extended it with adding the masand institution.
- The masand were Sikh community leaders who lived far from the Guru, but acted to lead the distant congregations, their mutual interactions and collect revenue for Sikh activities and temple building.
- Birth anniversary of guru ram das has commemorated recently.

15. GEOGRAPHY

15.1 Lotus Silk

- Lotus silk is one of the rarest fabrics in the world, and is only extracted by a few skilled craftspeople across the world.
- It is produced only in small scale across Cambodia, Myanmar, and Vietnam.
- Extracting enough lotus silk for one scarf can take two months, and the final product can cost 10 times as much as regular silk.
- The lotus plants are only available to harvest between April and October.
- The key difference between the bright yellow silk and the paler lotus version is that every single strand of lotus silk must be extracted by hand.
- Each stem contains a minuscule amount of thin, sticky fibers, which must be rolled together and dried.
- Once dry, these threads are carefully weighed down and delicately hand-spoiled, then they're put into the loom.

- The final product is soft like silk, breathable like linen, and slightly elastic.

15.2 Distress Migration in Bonda Tribes

- Odisha's Bondas, a particularly vulnerable tribal group, and known for their secluded lives away from the mainstream.
- The endangered Bonda tribe are classified as one of India's Particularly Vulnerable Tribal Groups (PVTGs)
- They are known for their distinctive cultural traditions, the Bondas are divided into two groups:
 1. **Lower Bondas** - who live in south Odisha's Malkangiri district bordering Andhra Pradesh and Chhattisgarh.
 2. **Upper Bondas** - who live in the hilly terrains of the remote villages in the district.
- According to the 2011 census, there are 12,231 Bondas and they speak Remo, one of the Mundari group of languages spoken by Munda peoples in India.
- In recent times they are being forced leave their pristine hamlets for low-paid jobs in distant towns of Andhra Pradesh, Telangana and States even farther.

15.3 Tristan da Cunha

- Tristan da Cunha is a remote group of volcanic islands in the south Atlantic Ocean.
- It is the most remote inhabited archipelago in the world
- It is a British Overseas Territory with its own constitution.
- It is declared as the largest fully protected marine reserves in the Atlantic Ocean at 687,000 square kilometres.
- The island group is also home to the World Heritage Site of Gough and Inaccessible Islands, which is one of the most important seabird islands in the world.
- UK's Blue Belt Programme supports the UK Overseas Territories with the protection and sustainable management of their marine environments.
- After joining the UK's Blue Belt Programme, Tristan da Cunha will become the largest no-take zone in the Atlantic and the fourth largest on the planet.
- This means fishing, mining and any such activities will not be allowed.
- This will close over 90 percent of their waters to harmful activities such as bottom-trawling fishing, sand extraction and deep-sea mining.

15.4 Glacial Lake Outburst

- Glacial lake outburst floods will happen all over the Indian Himalaya, however not all of these events have catastrophic outcomes.
- It largely depends on urban planning, the size of the lake, the distance between the lake and affected villages, the valley section and some more aspects.
- In some cases, cloudbursts can also trigger glacial lake outburst flood events like in the Kedarnath disaster in 2013.
- These events have been regarded as a major risk in the central Himalayan region including Sikkim.
- Glacial lake outburst floods in the arid Trans-Himalayan regions of Ladakh have received attention only recently.
- In August 2014, a glacial lake outburst flood hit the village of Gya in Ladakh, destroying houses, fields and bridges.
- The cause of this was not spill over but rather a tunnelling drainage process.i.e. There was a thawing of the ice cores in the moraine [a field of dirt and rocks that have been pushed along by the glacier as it moves] which drained through the subsurface tunnels.
- Recently using remote sensing data, researchers from Germany have mapped the evolution of Gya glacial lake and note the cause of the flood.

- This illustrates the problem of potentially hazardous lakes being overlooked.
- The team notes that thawing of ice cores may accelerate in the future due to global climate change, and there is an urgent need to use multiple methods for better risk assessment and early warning.

15.5 Mansar Lake Development Plan

- Surinsar Lake and Mansar Lake are considered to be twin lakes.
- Surinsar is rain-fed without permanent discharge, and Mansar is primarily fed by surface runoff and partially by mineralized water through paddy fields, with inflow increasing in the rainy season.
- Mansar is of immense importance from Pilgrimage as well Heritage point of view beyond being the most scenic attraction due to vast Mansar Lake and its flora and fauna.
- It is one of the 26 Ramsar Sites designated as Wetlands of International importance located in Jammu & Kashmir.
- The SurinsarMansar Wildlife Sanctuary is nestled in the midst of both the lakes.
- The site is socially and culturally very important with many temples around owing to its mythical origin from the Mahabharata period.
- Union government has recently inaugurated the Mansar Lake Development Plan in Jammu and Kashmir.
- The project is eyed to attract almost 20 lakh tourists every year and create employment for 1.15 crore man-days with an income generation of ₹ 800 crore per year.

15.6 La Nina

- La Niña means the large-scale cooling of ocean surface temperatures in the central and eastern equatorial Pacific Ocean, together with changes in the tropical atmospheric circulation, namely winds, pressure and rainfall.
- It has the opposite impacts on weather and climate as El Niño, which is the warm phase of the El Niño Southern Oscillation (ENSO).
- La Niña will result in sea surface temperatures between 2- and 3-degrees Celsius cooler than average.
- La Niña could last into 2021, affecting temperatures, precipitation and storm patterns in many parts of the world.
- The La Niña of 2020 is expected to be moderate to strong.
- According to World Meteorological Organization, La Niña weather phenomenon is back in the central and eastern equatorial Pacific Ocean after nearly a decade's absence.
- In India, La Niña means the country will receive more rainfall than normal, leading to floods.

15.7 Luhri Stage-I Hydro Electric Project

- It is located on River Satluj in Shimla and Kullu districts of Himachal Pradesh.
- This project will generate 758.20 million units of electricity annually, which will help in providing grid stability and improve the power supply position.
- Besides adding valuable renewable energy to the grid, the project would also lead to a reduction of 6.1 lakh tons of carbon dioxide from the environment annually, thus contributing to an improvement in air quality and less air pollution.
- Himachal Pradesh will benefit with free power worth around Rs. 1140 crore, during the Project Life Cycle of 40 years.
- The project affected families will be provided with 100 units of free electricity per month for ten years.
- It is being implemented by Satluj Jal Vidyut Nigam Limited (SJVN) on Build-Own-Operate-Maintain (BOOM) basis with active support from Government of India and the State Government.

- Recently Cabinet Committee on Economic Affairs has approved the investment for 210 MW Luhri Stage-I Hydro Electric Project.

15.8 Baghjan Oilfield

- The Baghjan oilfield is located in Tinsukia district of Assam, in June 2020, a gas leak has occurred at the oil well following a blowout.
- It has been burning for 160 days by now, it continues to impact an area of 10 kilometres around.
- The Baghjan well is a purely gas-producing well in Tinsukia district, and is at an aerial distance of 900 metres from the Dibru-Saikhowa National Park.
- NGT's principal bench headed by AK Goel, constituted a committee led by former Judge BP Katakey June 26 to investigate the cause and the impact of the blowout.
- According to committee's report NGT Baghjan oil field along with 26 oil wells in Assam was operating without mandatory environmental clearances.

15.9 Hazira-Ghogha Ro-Pax Ferry Service

- Hazira-Ghogha Ro-Pax ferry service has inaugurated recently.
- It will work as a Gateway to South Gujarat and Saurashtra region.
- It will reduce the distance between Ghogha and Hazira from 370 Kilometres to 90 Kilometres.
- The reduced cargo travel time will result in huge savings of fuel approximately 9000 litres per day and will lead to reduction in CO2 emission by approximately 24 million tonnes per day.
- With the onset of Ferry services, the port sector, furniture and fertilizer industries in Saurashtra and Kutch region will get a big boost.
- The benefits of enhanced connectivity through this ferry service will also result in increased inflow of tourists in the famous Asiatic lion wildlife sanctuary at Gir.

15.10 Survey of River Ganga

- Survey of Ganga River was initiated by Wildlife Institute of India (WII) on behalf of the National Mission for Clean Ganga.
- This is the first study ever done in the country on the entire river, and the first also of all its biodiversity.
- The institute has been tracking biodiversity through some key aquatic and semi-aquatic species such as the Gangetic Dolphins, gharials, otters, turtles and various species of water birds.
- Highlights of the Survey findings are as follows
 1. Ganga river (main river without its tributaries), has found that 49% of the river has high biodiversity.
 2. 10% of the high biodiversity areas fall alongside national parks and sanctuaries such as Rajaji national park in Uttarakhand, Hastinapur wildlife sanctuary in UP and Vikramshilagangetic Dolphin sanctuary in Bihar.
 3. Increased biodiversity sightings, including of the Gangetic Dolphin and Otters, indicates reduced pollution levels and a healthier state of the river.
 4. Many species that used to be found in the main stem and had disappeared, are now coming back, Few such sightings are as follows
 - a) Nesting colonies of the Indian Skimmer found.
 - b) Seibold's, a species of water snake, disappeared 80 years ago and has now resurfaced.
 - c) New distributions of the puffer fish found.
 5. Many other species have started travelling back from tributaries to the main stem of the river indicating improving water quality and increasing Biodiversity.



15.11 Saffron Cultivation in North East

- Saffron is a plant whose dried stigmas (thread-like parts of the flower) are used to make saffron spice.
- India cultivates about 6 to 7 tonnes of saffron while the demand is 100 tonnes.
- To meet the growing demand of saffron the MoS&T through the Department of Science and Technology (DST), is now looking at extending its cultivation to some states in the Northeast.
- This is because there is a huge similarity of climate and geographical conditions between Kashmir and few regions of Northeast.
- Sikkim was first to implement the pilot project, and later it will be extended to Meghalaya and Arunachal Pradesh.
- North East Centre for Technology Application and Reach (NECTAR) is an autonomous body under the DST.
- NECTAR in collaboration with the Botany and Horticulture departments of Sikkim Central University implemented a pilot project in Yangyang village of South Sikkim.
- The Yangyang pilot project of saffron cultivation has yielded successful results, which produced its first crop of saffron recently.

Pampore Saffron

- Saffron production has long been restricted to a limited geographical area in the Union territory of Jammu & Kashmir.
- Pampore region, commonly known as Saffron bowl of Kashmir, is the main contributor to saffron production.
- Pampore Saffron Heritage of Kashmir is one of the Globally Important Agricultural Heritage systems (GIAHS) recognised sites in India.

Ideal Conditions for Saffron Cultivation

- In India, saffron Corms (seeds) are cultivated during the months of June and July and at some places in August and September, It starts flowering in October.
- Saffron grows well at an altitude of 2000 meters above sea level.
- It needs a photoperiod (sunlight) of 12 hours.
- It grows in many different soil types but thrives best in calcareous (soil that has calcium carbonate in abundance), humus-rich and well-drained soil with a pH between 6 and 8.
- For saffron cultivation, we need an explicit climatological summer and winter with temperatures ranging from no more than 35 or 40 degree Celsius in summer to about -15 or -20 degree Celsius in winter.
- It also requires adequate rainfall that is 1000-1500 mm per annum.

15.12 Dobra-Chanthi Bridge

- Recently, the Dobra-Chanthi suspension bridge has been dedicated to public in Tehri-Garhwal district.
- Dobra Chanti bridge is India's longest motorable single lane suspension bridge which is 440-metre long.
- It is built over Tehri Lake, it will cut travel time between Tehri and Pratapnagar districts from 5.5 to 1.5 hours.

15.13 Maritime Cluster

- Maritime Cluster is conceived as a dedicated ecosystem of Ports, Maritime Shipping and Logistics services providers.
- The concept of maritime clusters is new to India, but these clusters have been driving some of the most competitive ports of the world like Rotterdam, Singapore, Hong Kong, Oslo, Shanghai, and London.
- To ensure a significant footprint in global supply chains of the world with the help of such innovative Ideas, India is planning to set up its first maritime cluster in GIFT City Gujarat.
- It will host an array of maritime, shipping industry players and service providers, along with relevant Government regulatory agencies.
- The Gujarat Maritime Board (GMB), has been trying to develop such a cluster through its subsidiary Gujarat Ports Infrastructure and Development Company Ltd (GPIDCL).

- While the project was conceptualised back in 2007, it received in-principle approval from the state government in 2015.

15.14 Tigray Region

- Ethiopia's administration has ordered troops to counter an allegedly violent attack by armed forces in the country's northern Tigray region.
- The Tigray Region is the northernmost of the nine regions (kililat) of Ethiopia.
- Tigray is bordered by Eritrea to the north, Sudan to the west, the Amhara Region to the south and the Afar Region to the east and south east.
- Tigray is the homeland of the Tigrayan, Irob and Kunama peoples, Mekelle is its capital and largest city.

16. POLITY

16.1 Disqualification of MLA

- India's first Member of Parliament to have been disqualified from the Lok Sabha has now been disqualified as an MLA in Mizoram.
- Lalduhoma was a retired IPS officer who was in charge of former Prime Minister Indira Gandhi's security.
- In 1988, he became the first MP to have been disqualified under the Anti-Defection Law for giving up membership of the Congress (I).
- Now, Mizoram Assembly Speaker debarred Lalduhoma from the House.
- Disqualification was on the ground that he had declared himself as a representative of a party despite being elected as an independent candidate.

16.2 Sarna Religion

- Recently, Jharkhand government has passed a resolution to recognise Sarna religion and include it as a separate code in the Census of 2021.
- It is believed that 50 lakhs tribal in the entire country put their religion as 'Sarna' in the 2011 census, although it was not a code.
- Many of the tribals who follow this faith have later converted to Christianity, the state has more than 4% Christians most of whom are tribals.
- The population of Sarna tribals in the state has declined from the 38.3 per cent in 1931 to 26.02 per cent in 2011.
- One of the reasons for this was tribals who go for work in different states not being recorded in the Census, in other states they are not counted as Tribals.
- The separate code proposed by the state government will ensure recording of their population.
- If the Centre approves the new Sarna code, Census 2021 would have to make space for a new religion.
- Currently, citizens can choose from only six religions: Hinduism, Islam, Christianity, Sikhism, Buddhism and Jainism.

16.3 Maintenance to Estranged Wife

- The Supreme Court ruled that Computation of maintenance to estranged wife will include child care.
- Normally, the courts take into account the husband's income and assets while quantifying interim maintenance to an estranged wife.
- Recently SC noted that with advancement of age, it would be difficult for a dependent wife to get an easy entry into the workforce after a break of several years.



- **Interim Maintenance:** Hindu Marriage Act nor the Protection of Women from Domestic Violence Act specified the date from which interim maintenance was to be granted, leading to exercise of discretion by family courts.
- Recently SC said interim maintenance had to be granted from the day the estranged woman filed an application in court.
- **Computing the maintenance:** The SC said the family court must also take into consideration the educational expenses of children staying with the estranged wife in computing maintenance as *"education expenses of the children must be normally borne by the father"*.
- This is the first time that the highest court has considered the sacrifices made by career women in taking care of children.
- The SC ruled that this would be an added component for enhancing the grant of interim compensation to her, so that she could lead a life almost akin to what she was used to when all was well in the matrimonial home.
- **Penalty for non-Payment:** The SC also said non-payment of maintenance could lead to arrest and detention of the delinquent husband and may even lead to confiscation of his assets and their auction to make good the dues to the estranged wife.

16.4 National Agricultural Higher Education Policy

- ICAR has recently launched Rs.1100 crore ambitious National Agricultural Higher Education Project (NAHEP).
- It aims to attract talent and strengthen higher agricultural education in the country.
- It is funded by the World Bank and the Indian Government on a 50:50 basis.
- The objective of the NAHEP for India is to support participating agricultural universities and ICAR in providing more relevant and higher quality education to Agricultural University students.
- In addition, a four-year degree in Agriculture, Horticulture, Fisheries and Forestry has been declared a professional degree.
- The overall objective of the project is to provide more relevant and high-quality education to the agricultural university students that is in tune with the New Education Policy – 2020.
- It is set to bring academic credit banks and degree programmes with multiple entry and exit options to the 74 universities focussed on crop sciences, fisheries, veterinary and dairy training and research.

17. GOVERNMENT INITIATIVES

17.1 Sahakar Pragya

- Recently, the Union Minister of Agriculture & Farmers Welfare has unveiled 'Sahakar Pragya' training module.
- It is part of a series of initiatives taken up by NCDC to strengthen India's cooperative societies.
- It is an innovative capacity building initiative for the farmers associated with such entities in the country.
- The 45 new training modules will impart training to primary cooperative societies in rural areas of the country.
- It embodies enhancing NCDC's training capacity through an elaborate network of 18 Regional Training Centres across the country.

Other Sahakar Initiatives

- **Sahkar Mitra SIP** - The "Scheme on Internship Program" (SIP) is an arrangement where NCDC will provide short term opportunity to young professionals acquire learning experience by applying skills and knowledge.
- **YuvaSahakar** - Its objective is to motivate and promote the entrepreneurs of India in the Cooperative Enterprise and those individuals working for the business.

- **Ayushman Sahakar** - It is a unique scheme to assist cooperatives play an important role in creation of healthcare infrastructure in the country.
- Recently, the World Health Organisation (WHO) has suspended Remdesivir from the official list of medicines.
- **SahakarCooptube NCDC Channel** - It is an initiative towards One Nation One Market with the objective for India to become food factory of the world.
- **SAHAKAR-22** - It aims to develop cooperatives in Focus 222 districts, including aspirational districts, for doubling the farmers' income through providing new employment opportunities generated through cooperatives.

17.2 Study on Radicalisation

- Union Ministry of Home Affairs (MHA) has, for the first time, approved a research study on “status of radicalisation in India.
- The study would attempt to legally define “radicalisation” and suggest amendments to the Unlawful Activities (Prevention) Act (UAPA).
- The Bureau of Police Research and Development (BPR&D), the police think tank of the MHA, had invited research proposals from academicians and legal experts in the year 2018.
- It received 75 proposals, and two topics - “Status of Radicalization in India: An Exploratory Study of Prevention and Remedies” and “Functioning and Impact of Open Prisons on Rehabilitation of Prisoners” were shortlisted by the MHA recently.
- G.S. Bajpai, Director of the Centre for Criminology and Victimology, National Law University (NLU), Delhi, will conduct the research on radicalisation.

17.3 National Monsoon Mission

- Recently, the National Council of Applied Economic Research (NCAER) has evaluated the economic benefits of the National Monsoon Mission (NMM).
- The study refers to economic benefits as direct monetary gains to crop farmers, livestock rearers, and fishermen in the country.
- National Monsoon Mission was launched by the Ministry of Earth Sciences in 2012.
- It aims to improve the forecasting skills by setting up a state-of-the-art dynamic prediction system for monsoon rainfall different time scales.
- NMM builds a working partnership between the academic and research and development (R&D) organisations, both national and international.
- Its augmentation with the HPC facilities has helped the country in achieving a paradigm shift in weather and climate modelling for operational weather forecasts.
- The benefits are from accurate weather forecasting by the India Meteorological Department (IMD) and other agencies working under the Ministry of Earth Sciences.

17.4 SAGAR – II

- Security and Growth for All in the Region (SAGAR) was launched in 2015.
- It is India’s strategic vision for the Indian Ocean Region (IOR).
- Mission Sagar-II, follows the first ‘Mission Sagar’ undertaken in 2020.
- As part of Mission Sagar-II, Indian Naval Ship Airavat will deliver food aid to Sudan, South Sudan, Djibouti and Eritrea.
- Mauritius, Madagascar, Comoros and Seychelles along with La Réunion are part of Indian Ocean Commission.
- The assistance is in line with India’s role as the first responder in the Indian Ocean region.
- The strategic importance of these island nations is highlighted by their location along key Sea Lines of Communication (SLOCs).



- Earlier, India had sent Indian Naval Ship (INS) Kesari, carrying food items and medical assistance teams, to countries in the southern Indian Ocean to deal with Covid-19 pandemic as part of a "Mission Sagar" initiative.

17.5 Propel India

- Propel India mission is one of the 3 missions launched under National Digital Communications Policy in 2018.
- It aims to enable Next Generation Technologies and Services through Investments, Innovation and IPR generation.
- It also aims to attract investments of USD 100 Billion in the Digital Communications Sector, expand IoT ecosystem to 5 Billion connected devices, and accelerate transition to Industry 4.0 by 2022.
- The objective of the mission are as follows
 1. Creation of innovation led Start-ups in Digital Communications sector.
 2. Creation of Globally recognized IPRs (Intellectual Property Rights) in India.
 3. Development of Standard Essential Patents (SEPs) in the field of digital communication technologies.
 4. Train/ Re-skill 1 Million manpower for building New Age Skills.

17.6 Garima Greh

- Garima Greh - Shelter Home for Transgender Persons has been inaugurated, in Vadodara, Gujarat.
- It includes shelter facility, food, clothing, recreational facilities, skill development opportunities, legal support, technical advice for gender transition and surgeries, etc.
- The Nodal Ministry has identified 10 cities to set up the 13 Shelter Homes and extend the facilities to Transgender persons, in association with selected 13 Community based organizations (CBOs) in the country on pilot basis.
- The cities include Vadodara, New Delhi, Patna, Bhubaneswar, Jaipur, Kolkata, Manipur, Chennai, Raipur and Mumbai.
- The scheme will rehabilitate a minimum of 25 transgender persons in each home identified by the Ministry.

18. BILATERAL RELATIONS

18.1 Greater Male Connectivity Project (GMCP)

- GMCP consists of a number of bridges and causeways to connect Male to Villingili, Thilafushi and Gulhifahu islands that span 6.7 km.
- It would ease much of the pressure of the main capital island of Male for commercial and residential purposes.
- When completed, the project would render the Chinese built Sinamale Friendship Bridge connecting Male to two other islands, thus far the most visible infrastructure project in the islands.
- At present, India-assisted projects in the region include
 1. Water and sewerage projects on 34 islands,
 2. Reclamation project for the Addl island,
 3. A port on Gulhifalhu,
 4. Airport redevelopment at Hanimadhoo,
 5. Hospital and a cricket stadium in Hulhumale.
- India recently signed a MoU for granting of a \$500 million package to the Maldives.
- Following this the Exim Bank of India and the Maldives's Ministry of Finance signed an agreement for \$400 million in Male.

18.2 AIM- Sirius Innovation Programme 3.0

- 'AIM–Sirius Innovation Programme 3.0' is a 14-day virtual programme for Indian and Russian schoolchildren.
- It is first Indo-Russian bilateral youth innovation initiative, launched by Atal Innovation Mission (AIM).
- AIM–Sirius programme seeks to develop technological solutions (both web- and mobile-based) for the two countries.
- Under the program students and educators and mentors will create 8 virtual products and mobile applications addressing global challenges in the wake of the covid-19 pandemic.
- Innovations developed by the student teams will leverage 21st-century technologies such as app development, artificial intelligence, block chain, machine learning etc.

18.3 India-Nordic-Baltic Conclave

- The Nordic-Baltic Cooperation (NB8) or NB8 is a regional cooperation format which as of 1992 has brought together five Nordic countries and three Baltic countries.
- The five Nordic (Denmark, Finland, Iceland, Norway and Sweden) and the three Baltic countries (Estonia, Latvia and Lithuania) cooperate in an informal and close way.
- Recently, the Union External Affairs Minister has addressed the first India-Nordic-Baltic Conclave.
- India and the Nordic-Baltic nations have much in common and the shared values have led to a similar outlook towards global challenges and opportunities.
- The India-Nordic-Baltic Conclave will provide for greener, smarter, digital & innovation-led future between India and Nordic-Baltic countries.
- The theme of the first India-Nordic-Baltic Conclave was "An Innovation-driven Partnership for Growth in a New World".

19. INTERNATIONAL ORGANISATIONS

19.1 One Health Global Leaders Group on AMR

- Recently UN has launched, a global group called 'One Health Global Leaders Group on Antimicrobial Resistance', in the wake of rising antimicrobial resistance (AMR).
- It is a collaborative effort of the Food and Agriculture Organization (FAO), World Organisation for Animal Health (OIE) and the World Health Organization (WHO).
- It is a 20-member group comprises heads of states, current and former ministers of different countries, leaders from the private sector and civil society.
- The group will meet twice a year. It is co-chaired by the prime ministers of Barbados and Bangladesh.
- The heads of FAO, OIE and WHO are ex-officio members of the group.
- The group was created in response to a recommendation from the Interagency Coordination Group on Antimicrobial Resistance (IACG) that submitted its report to the Secretary-General of the United Nations in April 2019.
- The IACG was convened by the Secretary-General of the United Nations after the UN high-level meeting on AMR in 2017.
- Key tasks undertaken by the group are as follows
 1. The group has to monitor the global response to antimicrobial resistance.
 2. It needs to maintain public momentum, provide regular reports on the science and evidence related to AMR to the UN member states.
 3. It advocates for the inclusion of AMR 'lens' in investments on agriculture, health, development, food and feed production.

4. It also pushes for multi-stakeholder engagement on the issue.

19.2 APEC Summit

- Asia-Pacific Economic Cooperation was established in 1989, it has 21 members.
- Member Nations are - Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, South Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, Singapore, Chinese Taipei, Thailand, Vietnam and the United States.
- Its 21 member economies are home to around 2.8 billion people and represented approximately 59% of world GDP and 49% of world trade in 2015.
- India had requested membership in APEC, and received initial support from the United States, Japan, Australia and Papua New Guinea.
- However, officials have decided not to allow India to join as India does not border the Pacific Ocean, which all current members do.
- India was invited to be an observer for the first time in 2011.
- Recently the virtual meeting of the 21-member Asia-Pacific Economic Cooperation (APEC) forum was held.
- In the meeting, APEC leaders adopted the Putrajaya Vision 2040, a new 20-year growth vision to replace the Bogor Goals named after the Indonesian town where leaders agreed in 1994 to free and open trade and investment.

19.3 UN ACABQ

- UN Advisory Committee on Administrative and Budgetary Questions (ACABQ) is a subsidiary organ of the General Assembly.
- ACABQ consists of 16 members appointed by the Assembly in their individual capacity.
- ACABQ ensures that fund contributions to the UN system are put to good effect and that mandates are properly funded.
- The 193-member General Assembly appoints members of the Advisory Committee.
- Members are selected on the basis of broad geographical representation, personal qualifications and experience.
- The major functions of the Advisory Committee are
 1. To examine and report on the budget submitted by the Secretary-General to the General Assembly
 2. To advise the General Assembly concerning any administrative and budgetary matters referred to it.
- Recently Indian diplomat Vidisha Maitra was elected as a member to the Assembly for a three-year term beginning January 1, 2021.

19.4 UNESCO Global Geopark

- UNESCO Global Geoparks are single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development.
- A UNESCO Global Geopark uses its geological heritage, in connection with all other aspects of the area's natural and cultural heritage, to enhance awareness and understanding of key issues.
- A UNESCO Global Geopark is given this designation for a period of four years after which the functioning and quality of each UNESCO Global Geopark is thoroughly re-examined during a revalidation process.
- UNESCO Global Geopark status does not imply restrictions on any economic activity inside a UNESCO Global Geopark where that activity complies with indigenous, local, regional and/or national legislation.
- UNESCO Global Geoparks give local people a sense of pride in their region and strengthen their identification with the area.
- Recently INTACH is pushing to get recognition of a UNESCO Global Geo Park for Visakhapatnam consisting of

1. Erra Matti Dibbalu (red sand dunes),
 2. Natural rock formations at Mangamaripeta,
 3. Million-years-old Borra Caves,
 4. Volcanic ash deposits in Araku Valley.
- India does not have any UNESCO Global Geo Park as of now.

19.5 Global Centre for Traditional Medicine

- Recently, the World Health Organisation (WHO) has announced that it will set up a Global Centre for Traditional Medicine in India.
- The Traditional Medicine Centre will be aimed at strengthening the evidence, research, training and awareness of traditional and complementary medicine.
- The new centre will support WHO's efforts to implement the WHO traditional medicine strategy 2014-2023.
- The traditional systems of medicine such as Ayurveda can play an important role in integrated people-centric health services and healthcare.

19.6 Global Prevention Coalition

- Global Prevention Coalition (GPC) is a global coalition of United Nations Member States, donors, civil society organizations which was established in the year 2017 to support global efforts to accelerate HIV prevention.
- It includes the 25 highest HIV burden countries, UNAIDS Cosponsors, donors, civil society and private sector organizations.
- It aims to strengthen and sustain political commitment for primary prevention by setting a common agenda among key policy-makers, funders and programme implementers.
- Recently, the Union Minister for Health and Family Welfare digitally addressed the Ministerial meeting of the Global Prevention Coalition (GPC) for Human immunodeficiency virus (HIV) Prevention.
- It was hosted by Joint United Nations Programme on HIV/AIDS (UNAIDS) and United Nations Population Fund (UNFPA) on behalf of the Global HIV Prevention Coalition (GPC).

19.7 UN Sanitation and Hygiene Fund

- It will fund countries with high burden of diseases stemming from lack of sanitation services and have the least ability to respond to them.
- The fund is hosted by the UN Office for Project Services, which provides technical advice and project implementation to the UN and its partners.
- The objectives of the Fund are:
 1. Expanding household sanitation
 2. Ensuring menstrual health and hygiene
 3. Providing sanitation and hygiene in schools and healthcare facilities
 4. Supporting innovative sanitation solutions

19.8 Global Conference on Criminal Finances and Cryptocurrencies

- Recently virtual 4th Global Conference on Criminal Finances and Cryptocurrencies is organised by Working Group on Cryptocurrencies and Money Laundering.
- Working Group on Cryptocurrencies and Money Laundering is established by the Interpol, Europol and the Basel Institute on Governance in 2016.
- The conference aims to shape international cross-sector solutions against the criminal use of cryptocurrencies.
- Representatives from law enforcement and the judiciary, Financial Intelligence Units (FIUs), international organisations and the private sector have met virtually.



- The conference underlined the need to expand capabilities on ways to probe virtual assets and regulate virtual asset service providers to prevent money laundering.
- The conference's agenda included trends and investigations on cryptocurrency related offences, exploring criminal flows and operations in the dark markets, ransomware and sextortion case studies, money laundering involving virtual assets, and the transfer of drug proceeds using cryptocurrencies.

20. ECONOMY

20.1 Floating Rate Bonds

- FRS bonds are fixed income instruments offered by the Government of India which come with a lock-in period.
- Unlike regular bonds that pay a fixed rate of interest, floating rate bonds have a variable rate of interest.
- The rate of interest of a floating rate bond is linked to a benchmark rate and is reset at a regular interval.
- The interest rate risk is largely mitigated as these bonds will pay higher return when prevailing rates are high.
- There is no certainty of the future stream of income when investing in a floating rate bond.
- The best time to buy floating rate bonds is when rates are low and are expected to rise.
- The FRS bonds are a 100% risk free investment option as interest payments on these are guaranteed by the Government of India.
- The interest earned on FRBs will be taxed, TDS will be deducted on interest payment similar to an Fixed Deposit, the same can be claimed back while filing Income Tax returns.
- The minimum amount that a person can invest is INR 1,000 and in multiples of INR 1,000 thereof and there is no cap on investments that a person can make.
- All residents of India and Hindu Undivided Family (HUF) are eligible to invest in FRBs, However a Non-Resident Indian (NRI) cannot invest in the scheme.
- Recently, the Ministry of Finance has provided the information that the outstanding balance of 'Government of India Floating Rate Bonds (FRB) 2020' is repayable at par on December 21, 2020.

20.2 Failed Banks

- The closing of an insolvent bank by the regulator is known as a bank failure.
- The bank deposits are insured by Deposit Insurance and Credit Guarantee Corporation (DICGC) which is a subsidiary of the Reserve Bank of India (RBI).
- The account holders who have accounts in the failed bank will not experience any change using the bank with new ownership as they will still have access to their cash and should be able to use their debit cards and cheques.
- Recently RBI said the financial position of the Chennai-based LVB has undergone a steady decline and consider the bank as a failed one.

Terminologies with respect to Recession

- In an economy, a recessionary phase is the counterpart of an expansionary phase.
- **Expansionary Phase** - When the overall output of goods and services (measured by the GDP) increases from one quarter (or month) to another, the economy is said to be in an expansionary phase.
- **Recessionary Phase** - When the overall output of goods and services (measured by the GDP) decreases from one quarter (or month) to another, the economy is said to be in a recessionary phase.
- In a recessionary phase, the GDP contracts from one quarter to another.
- **Business Cycle** - In an economy, the expansionary phase and recessionary phase together are called a "business cycle".



- **Recession** - In an economy, when a recessionary phase sustains for long enough, it is called a recession i.e. when the GDP contracts for a long enough period, the economy is said to be in a recession.
- There is no universally accepted definition of a recession but most economists agree with the definition that the National Bureau of Economic Research (NBER) in the United States uses.
- According to NBER, “During a recession, a significant decline in economic activity spreads across the economy and can last from a few months to more than a year”.
- **Technical Recession** - The commentators often consider a recession to be in progress when real GDP has declined for at least two consecutive quarters in order to get around the empirical technicalities associated with the recession.
- The real quarterly GDP has been accepted as a measure of economic activity and a benchmark for ascertaining a “technical recession”.
- According to recent bulletin of Reserve Bank of India on state of economy there is a contraction for a second consecutive quarter (Quarter 2).
- The contraction of Q2 is crucial because it implies that India has entered a “technical recession” in the first half of 2020-21 for the first time in its history.

Actionable Claim

- Section 2(52) of the GST Act defines ‘goods’ to include ‘actionable claims’ like lotteries.
- An ‘actionable claim’ is a claim to debt by means other than mortgage or hypothecation of property.
- Hence, lotteries, despite being actionable claims, can be taxed as ‘goods’ under the Act.
- According to recent judgement Actionable claims can never be termed as goods and these are two separate concepts.
- However, the GST Act has blurred the distinction only with regard to lotteries, which is impermissible.
- It cannot be said that the sale of a lottery ticket involved a sale of goods.
- There was no sale of goods within the meaning of Sales Tax Acts of the different States but at the highest a transfer of an actionable claim.

20.3 GST on Lotteries

- Recently Supreme Court has reserved its judgment on the constitutional validity of imposing Goods and Services Tax (GST) on sale of lotteries across the country.
- Petitions filed by lottery dealers, argued that the Central GST Act of 2017 and notifications wrongly viewed lotteries as “goods” while they were only “actionable claims”.
- They said lottery tickets by themselves were only “valueless pieces of paper” and the GST Council was wrong to recommend the imposition of tax on them.
- A three-judge Bench pronounce the verdict on charges of discrimination raised against the law for imposing 12% GST on lotteries sold within the same State and 28% GST for sale of tickets from other States.
- The bench noted this is Arbitrary, discriminatory, unreasonable and clearly violative of Articles 14 of the Constitution.
- In the earlier tax regime, in which no VAT was levied on lotteries, but service tax was levied, the rate of tax was 1.28% or .82% on the face value of the lottery tickets depending on the prize money payout.
- Thus the Legislature never intended to tax the prize money component in the lottery trade, as it did not form part of the income of lottery traders, but payable to the winner of the ticket prize.
- However, the notifications levy GST on the face value of the tickets without adjusting or taking into account the prize money component.

20.4 ECLGS 2.0

- Emergency Credit Line Guarantee Scheme (ECLGS) 2.0 was expanded by the National Credit Guarantee Trustee Company Limited (NCGTC).
- Under the scheme, 100% loan guarantee would be provided by NCGTC.
- While the ECLGS 1.0 will remain, the ECLGS 2.0 will cover entities in 26 stressed sectors identified by Kamath Committee, plus the health sector.



- These entities should have a credit outstanding of above Rs. 50 crore and up to Rs. 500 crores as on February 29, 2020.
- It provides a one-year moratorium on loans and four years.
- Facility under ECLGS 2.0 shall be on '**Opt-in**' basis - to enable eligible borrowers to choose whether they wish to opt in the GECL facility.
- The borrower accounts should be less than or equal to 30 days past due as on February 29, 2020.
- 20% of credit dues will be given as working capital without collateral.
- The rate of interest charged by banks will not exceed 9.25%.
- It will be extended to the scheduled commercial banks, financial institutions, NBFCs, eligible MSMEs/business enterprises, individual borrowers and Pradhan Mantri Mudra Yojana (PMMY) borrowers.

20.5 Honey FPO Programme

- Agriculture Ministry has launched five Farmer Producer Organisations (FPOs) for producing honey.
- These FPOs would be set up with the help of National Agricultural Cooperative Marketing Federation of India (NAFED).
- 5 FPOs - East Champaran (Bihar), Morena (Madhya Pradesh), Bharatpur (Rajasthan), Mathura (Uttar Pradesh) and Sunderbans (West Bengal).
- Through these FPOs, NAFED would help bee-keepers and honey collectors in branding, collective marketing, and also explore overseas markets for them.

20.6 PLI Scheme to Solar Manufacturing

- The Union Cabinet decided to award 'Performance Linked Incentive' (PLI) to solar panel manufacturers.
- While the wind power sector has a strong domestic supply chain, solar power projects are majorly dependent on imported solar panels.
- This scheme for solar PV modules will incentivize domestic and global players to build large-scale solar PV capacity in India.
- It will help India leapfrog in capturing the global value chains for solar PV manufacturing.

21. ENVIRONMENT

21.1 Released norms on NOx Emissions

- NOx or Oxides of nitrogen are a criteria pollutant emitted on burning coal.
- NOx is harmful, it also triggers the formation of ground level ozone and leads to secondary particulate matter worsening health risks and needs to be controlled.
- Coal-based power plants, besides the transport sector, are a major source of this pollutant.
- There were no limits placed to control emissions of NOx from power plants before 2015.
- The MoEF&CC introduced limits of 300 mg / Nm³.
- Recently Union Ministry of Environment, Forest and Climate Change (MoEF&CC) has relaxed NOx emission norms.
- It has been relaxed to 450 mg / Nm³, from 300 mg / Nm³, for power stations commissioned between 2003 and 2015.
- The relaxations were brought about as the power sector strongly lobbied watering down the norms, alleging it was not possible to meet the 300 mg / Nm³ standard at all loads.



- Boiler companies assured government that a NO_x emission level of 450 mg / Nm³ can be achieved by combustion modification.
- To meet emissions below it would mean installation of slightly expensive pollution control equipment like selective non-catalytic reactors (SNCR) will be required.

21.2 Lonar and Soor Sarovar Ramsar Sites

- Recently the following lakes have been declared as Ramsar Sites.
- **Meteor lake at Lonar, Maharashtra** - The Lonar lake, was created by the impact of a meteor 35,000 to 50,000 years ago.
- It is part of Lonar Wildlife Sanctuary which falls under the unified control of the Melghat Tiger Reserve (MTR).
- It is the second Ramsar site in Maharashtra after NandurMadhmeshwar Bird Sanctuary in Nashik district.
- The water in the lake is highly saline and alkaline, containing special microorganisms like anaerobes, Cyanobacteria and phytoplankton.
- **Soor Sarovar, Agra** - It is also known as Keetham lake situated within the Soor Sarovar Bird Sanctuary.
- This lake is situated alongside river Yamuna in Agra, Uttar Pradesh.
- The Soor Sarovar bird sanctuary covered an area of 7.97 sq km.
- It also has a Bear Rescue centre for rescued dancing bears.
- Earlier this year Kabartal Wetland (Bihar) and Asan Conservation Reserve (Uttarakhand) were also designated as Ramsar sites.
- With latest inclusions, the total number of Ramsar sites in India is 41, the highest in South Asia.

21.3 Vulture Action Plan 2020-25

- Recently, the Union Minister for Environment, Forests and Climate Change has launched a Vulture Action Plan 2020-25.
- Conservation project for vultures is being carried out by the MoEFCC since 2006, and the plan is to now extend the project to 2025.
- The action plan was launched after, DCGI banning the veterinary use of diclofenac in the same year and the decline of the vulture population being arrested by 2011.
- Diclofenac is a veterinary non-steroidal anti-inflammatory drug (NSAID) used to treat pain and inflammatory diseases such as gout.
- The action plan aims to carry forth what has already been set in motion by ensuring that sale of veterinary NSAIDs is regulated and livestock are treated only by qualified veterinarians.
- The four rescue centres have been proposed for treatment of vultures in the country different geographical areas like
 1. Pinjore in the north,
 2. Bhopal in Central India,
 3. Guwahati in Northeast
 4. Hyderabad in South India.
- Under the 2020-25 plan, the ministry will also work for conservation breeding programme of Red Headed Vulture and Egyptian Vulture.

Vultures in India

- There are nine recorded species of vultures in India, they are
 1. Oriental white-backed - Critically Endangered (IUCN)
 2. Long-billed - Critically Endangered (IUCN)
 3. Slender-billed - Critically Endangered (IUCN)
 4. Red-headed - Critically Endangered (IUCN)
 5. Egyptian - Endangered (IUCN)
 6. Himalayan Griffon - Near Threatened (IUCN)
 7. Bearded Griffon - Near Threatened (IUCN)
 8. Cinereous Griffon - Near Threatened (IUCN)
 9. Indian Griffon - Near Threatened (IUCN)

- The action plan will also help states in establishing at least one 'Vulture Safe Zone' in each state for the conservation of the remnant population.

21.4 Environmental Appraisal

- Recently Ministry of Environment and Forests (MoEF) issued fresh guidelines to accelerate environment appraisal of industrial projects.
- Environmental appraisals, as per norms, are conducted by independent panels of experts that have representatives from the government as well as from outside, trained in matters of ecology, wildlife and habitat preservation.
- The Expert Appraisal Committees (EACs) opine on whether a proposed project beyond a certain size ought to be commissioned and recommend ways to mitigate the potential environmental impact.
- Their advice is critical to the MoEF's eventual decision to either clear or red flag a project.
- There are separate EAC committees for industrial projects, coal mining, non-coal mining, river and hydroelectric projects, each with its own independent chairperson and committee members.
- However, several members have full-time jobs independent of their commitments to EAC meetings.

SPECIES IN NEWS

21.5 UV resistant Water Bears

- Tardigrades, small aquatic creatures known as water bears, can survive extreme heat, radiation, and even the vacuum of outer space.
- Recently scientists have discovered a new species of tardigrade that can endure ultraviolet (UV) light so lethal, it is regularly used to get rid of hard-to-kill viruses and bacteria.
- When reddish brown species of water bears exposed to a dose of UV radiation all survived.
- Fluorescent pigments, likely located under the tardigrades' skin, transformed the UV light into harmless blue light.
- Researchers extracted the fluorescent pigments and used them to coat *H. exemplaris* and several *Caenorhabditis elegans* earthworms.
- Animals with the jury-rigged shields survived at almost twice the rate of animals without the shields.
- It's likely, scientists say, that the tardigrades evolved fluorescence as a means to tolerate the high doses of UV typical for hot summer days in southern India.

21.6 Willow Warbler

- Recently, Willow Warbler has been sighted for the first time in the country at Punchakkari, Kerala.
- It is one of the longest migrating small birds that breed throughout northern and temperate Europe.
- The scientific name of Willow Warbler is *Phylloscopus Trochilus*.
- It is usually seen in European and the Palearctic regions and migrates to sub-Saharan Africa during early winter.
- It is found in wooded habitat which is from mixed forest to willow thickets in open country.
- It is a bird of open woodlands with trees and ground cover for nesting, including most importantly birch, alder, and willow habitats.
- It is listed as 'Least Concern' under the IUCN Red List of Threatened Species.

21.7 Bioluminescent Mushroom

- Recently Researchers in North-East India has discovered a bioluminescent or light emitting variety of mushroom.

- The new species is named as *Roridomyces phyllostachydis*.
- The discovery is important because it was the first mushroom in the *Roridomyces* genus to be found in India.
- It is the only member in its genus to have light emitting from its stipe or stalk.
- It is now one among the 97 known species of bioluminescent fungi in the world.
- It was first sighted in Meghalaya's Mawlynnong in East Khasi Hills district and later at Krang Shuri in West Jaintia Hills district.

21.8 Striped Bubble-Nest Frog

- Recently a group of scientists has reported a new genus of tree frog from the Andaman Islands called Striped Bubble-nest frog.
- Striped Bubble-nest frog belongs to the genus of the Old World tree frog family Rhacophoridae.
- This is the first report of a tree frog species from the Andaman Islands.
- It has a small and slender body (2-3 cm long).
- It lays Light green-coloured eggs in arboreal bubble-nests, Arboreal means living in trees or related trees.
- They are also known as Asian Glass Frog or see through frogs.
- While the general background coloration of most glass frogs is primarily lime green, the abdominal skin of some members of this family is translucent (allowing light to pass through).
- The internal viscera, including the heart, liver, and gastrointestinal tract, are visible through this translucent skin, hence the common name.

21.9 New Gecko in the Eastern Ghats

- A new species of lizard *Cnemaspis avasabinaem*, commonly known as Sabin's Nellore dwarf gecko, has been discovered in the Eastern Ghats.
- It is the smallest known Indian gekkonid that lives in dry evergreen forest and measures less than 2.9 cm (snout to vent length).
- The most interesting find was that the males lacked femoral pores.
- Generally, most variants of lizards have femoral pores in both the sexes, and the secretions from these pores help in communication.
- In India, 45 species of genus *Cnemaspis* have been found, of which 34 are from the Western Ghats.
- This dwarf gecko is the twelfth species of the genus to be discovered outside the Western Ghats.
- This discovery suggests that the genus may be even more widely distributed than previously thought.

21.10 Sea Sparkle Bloom in Karnataka

- The bloom of *Noctiluca Scintillans*, known as "sea sparkle" has been witnessed in the Karnataka coast for about a month.
- The bioluminescent green dinoflagellate *N. Scintillans* also brightened the sea water during night.
- It has displaced microscopic algae called diatoms (basis of the marine food chain), which has deprived food for the planktivorous fish.
- The species was found to accumulate toxic levels of ammonia.
- It is then excreted into the surrounding waters, possibly acting as the killing agent in blooms.
- *N. Scintillans* acts as both a plant and an animal.
 1. It grazes on other micro-organisms such as larvae, fish eggs, and diatoms.
 2. The phytoplankton that live inside it can photosynthesise, turning sunlight into energy.



22. SCIENCE AND TECHNOLOGY

SPACE

22.1 Asteroid 16 Psyche

- Asteroid 16 Psyche is located 370 million kilometres away from earth between Mars and Jupiter and has a diameter of 140 miles.
- It was discovered in the year 1853 by the Italian astronomer Annibale de Gaspard and was named after the ancient Greek goddess of the soul, Psyche.
- Unlike most asteroids that are made up of rocks or ice, scientists believe that Psyche is a dense and largely metallic object thought to be the core of an earlier planet that failed formation.
- Psyche's shape is like a potato which takes about five earth years to complete one orbit of the sun but only a bit over 4 hours to rotate once on its axis.
- Recently NASA has found out that asteroid 16 Psyche could be made entirely of metal.
- The primary target of the Psyche mission to be launched in 2022 by NASA is to study this asteroid completely and confirm the assumptions being made by the scientists.
- Psyche mission will be the first mission to investigate this metallic asteroid.
- Psyche spacecraft will land on the asteroid in early 2026.
- As the composition of Psyche is very similar to earth's own core, its study will also give an insight to earth's violent history of collisions and accretion that created it.

22.2 Chang'e-5 Mission

- China has launched an unmanned spacecraft to bring back lunar rocks, the first attempt by any nation to retrieve samples from the Moon in four decades.
- Recently, China has launched the Long March-5 Y5 rocket, carrying the Chang'e-5 spacecraft from Wenchang Space Launch Center (China).
- It is named after the ancient Chinese goddess of the moon, will seek to collect lunar material to help scientists understand more about the moon's origins and formation.
- The Mission will drill 2 meters beneath the moon's surface and scoop up about 2 kilograms of rocks and other debris to be brought back to Earth.
- There will be an attempt to collect 2 kg of samples in a previously unvisited area in a massive lava plain known as OceanusProcellarum or "Ocean of Storms".
- If this is successful, the samples will be transferred to a return capsule that will return them to Earth, with a landing in China's Inner Mongolia region.
- The entire mission is scheduled to take around 23 days.
- The sample collected would help scientists learn about the following
 1. Moon's origins,
 2. Volcanic activity on its surface and its interior, and
 3. When its magnetic field, key to protecting any form of life from the sun's radiation dissipated.
- If the mission is completed as planned, it would make China only the third country to have retrieved lunar samples, joining the United States and the Soviet Union.

Other missions that had collected lunar samples

- The other two missions that had brought back the lunar samples from the moon surface were the following
 1. **USA's Apollo programme** (which first put men on the moon) – brought 382 kg of rocks and soil.
 2. **USSR's Luna** had deployed three successful robotic sample return missions in the 1970s, samples were collected from Mare Crisium, or "Sea of Crises" - a lunar basin.



22.3 M Dwarf Stars

- M dwarfs, also known as Red Dwarfs, are the tiniest of the stars that have masses ranging from about 8 percent to about 50 percent of the Sun's mass.
- The planets circling an M dwarf must be in a close orbit to the star to be warm enough for life, like campers huddling around a small fire.
- The term "red dwarf" does not refer to a single kind of star.
- It is frequently applied to the coolest objects including K and M dwarfs which are true stars and brown dwarfs, often referred to as "failed stars" because they do not sustain hydrogen fusion in their cores.
- Characteristic features of M Dwarf Stars are
 1. The red dwarf stars have relatively low pressures, a low fusion rate, and a low temperature.
 2. The low temperature of red dwarfs implies that they are far dimmer than stars like the sun.
 3. The low temperature also means that they burn through their supply of hydrogen less rapidly.
 4. The red dwarf stars live for so long that not one of them has reached an advanced stage of evolution since the universe was created.
- Recently total of 53 M dwarfs were studied using the TIFR Near-Infrared (NIR) Spectrometer and Imager (TIRSPEC) instrument on the 2-m Himalayan Chandra Telescope (HCT) at Hanle, India.
- Using effective temperature (Teff), radius, and luminosity of nearby bright calibrator stars, the team has created new empirical relationships among those fundamental parameters and spectral indices of M dwarfs that could identify them as potentially habitable.

22.4 Fast Radio Bursts

- According to recent observations Intense pulses of radio waves known as fast radio bursts (FRB) that have been frequently detected in other galaxies, have now been found in the Milky Way.
- The latest studies reported that two radio telescopes, one in the United States and the other in Canada detected a FRB, and it was named FRB 200428.
- FRBs were first discovered in 2007 and there are still many gaps in information regarding them.
- Many theories have also suggested that FRBs are caused by neutron stars, that are the corpses of stars which died in explosions called supernovas.
- Recent study identifies FRBs are in fact generated by a rare type of neutron star known as a 'magnetars'.
- The source of the FRB was traced to a magnetars known as SGR 1935+2154, located about 30,000 light-years from the earth.
- It lies in the centre of the Milky Way, in the constellation Vulpecula.
- The FRB generated by this magnetar was so powerful that it emitted as much energy in one millisecond as the sun does in 30 seconds, according to the scientists.
- The scientists also concluded that most FRBs in other galaxies also were generated by magnetars.

Magnetars

- Magnetars are the most powerful magnets in the cosmos.
- Their magnetic fields are 5,000 trillion times more powerful than that of the Earth.

DEFENCE

22.5 Aero India

- Aero India is a biennial international military and civil air show.
- It is a premier event that draws international and Indian military and civil aircraft makers, their support industries, military brass and government dignitaries and business visitors.
- It provides a unique opportunity for the exchange of information, ideas and new developments in the aviation industry, in addition to giving a fillip to the domestic aviation industry furthering the cause of Make in India.



- The Yelahanka air base, about 30 km from the city centre Bengaluru, has been hosting the air show in February since it was started in 1996.
- In 2019, it was organised by Hindustan Aeronautics Ltd. (HAL) and in 2021, it will be organised by the Defence Exhibition Organisation, Ministry of Defence.

22.6 INS- Vagir

- Recently Indian Navy's fifth Kalvari-class Diesel Electric attack submarine INS Vagir was launched.
- The features of the vessel are as follows
 1. Superior stealth features such as advanced acoustic absorption techniques, low radiated noise levels, and hydro-dynamically optimised shape.
 2. The ability to attack the enemy using precision guided weapons.
 3. The submarine is designed to operate in all theatres of operation, showcasing interoperability with other components of a Naval Task Force.
 4. It can launch attacks with both torpedoes and tube launched anti-ship missiles, whilst underwater or on surface.
 5. It can undertake multifarious types of missions i.e Anti-Surface warfare, Anti-Submarine warfare, Intelligence gathering, Mine Laying, Area Surveillance, etc.
- The design of Kalvari class of submarines is based on Scorpene class of submarines designed and developed by French defence major Naval Group.
- This class of submarines have Diesel Electric transmission systems and these are primarily attack submarines or 'hunter-killer' type which means they are designed to target and sink adversary naval vessels.
- The modern variants of the Scorpence class of submarines have what is called the Air Independent Propulsion (AIP) which enables non-nuclear submarines to operate for a long time without access to surface oxygen.
- Indian Naval Ship (INS) Vagir is the fifth among the six Kalvari-class submarines being constructed by the public sector shipbuilder Mazagon Dock Ltd (MDL) in Mumbai.
- The other vessels in the class are INS Kalvari, INS Khanderi, INS Karanj, INS Vela and INS Vagsheer.

Defence Exhibition Organisation

- DEO is an autonomous organisation of the Indian Government established in 1981, to promote the export potential of the Indian defence industry.
- It is responsible for organising international exhibitions such as DefExpo and Indian participation at overseas exhibitions.

22.7 Direct Energy Weapons

- Microwave Weapons are supposed to be a type of direct energy weapons, which aim highly focused energy in the form of sonic, laser, or microwaves, at a target.
- These weapons are based on the principle that microwave radiation of a certain kind can cause a buzzing sensation in the head, due to a phenomenon known as the Thermo Elastic effect.
- Such a weaponized microwave beam may cause a very slight expansion of the brain and produce a sound-like pressure, which strictly speaking is not really sound but can be traumatic.
- Broadly speaking, DEWs are of two types
 1. **High-energy lasers** - These laser weapons can knock off rockets and missiles at the speed of light
 2. **High power microwaves** - These weapons can use an electromagnetic explosion to take out the entire communication network of the enemy and destroy its electronic equipment.
- While they both comprise radio waves and light waves, lasers have shorter wavelength and higher frequency while microwaves have longer wavelength and low frequency.
- The idea behind both is to use powerful energy beams to hit targets (and in some cases destroy them) without much collateral damage.
- DEWs can inflict a wide variety of damage on an individual including dizziness, nausea and convulsions.

- The pain and severity of repercussions can be increased by changing the frequency.
- Recently India has denied reports that Chinese forces at the LAC used microwave weapons against Indian troops in eastern Ladakh.

Microwave weapon capabilities of Different countries include

1. **Poly WB-1** - China had first put on display its “microwave weapon”, called Poly WB-1, at an air show in 2014.
2. **Active Denial System** - The United States has also developed a prototype microwave-style weapon, which it calls the “Active Denial System”.
3. **Anti-Drone DEW Systems** - India’s DRDO has developed two anti-drone DEW systems, and plans are afoot to invest in DEW tech in a big way.

22.8 Defence Land Management System

- Recently Union Defence Ministry has launched the portal for Defence Land Management System (LMS).
- It has been developed by Department of Defence in collaboration with Directorate General Defence Estates (DGDE) and Armed forces.
- The Intra-net portal shall digitize all requests of defence land management received by the Department in future.
- The portal is expected to bring in greater speed, transparency and efficiency into the Land Management System (LMS) of the Department.
- The portal, along with integration of GIS based tool, will improve decision making process by removing duplication/unnecessary communication between various stakeholder groups involved in the decision-making process.
- It will integrate several mapping tools into the existing “Raksha Bhoomi” software, which was launched with the data updated in 2011.
- The technical support for the GIS-based system has been provided by Bhaskaracharya Institute for Space Applications and Geoinformatics (BISAG) which is India’s premier organization in GIS based informatics.

22.9 Raksha Bhoomi

- In 2006 Defence Estates Department has developed Raksha Bhoomi software in collaboration with NIC, Chennai.
- This software records complete defence land data.
- This software can be used to generate area wise, state wise and category wise reports of defence lands throughout the country.
- The present version of Raksha Bhoomi Software is 3.3. Updated in 2011.

HEALTH

22.10 Chapare virus

- US researchers have recently discovered a rare Ebola-like illness that is believed to have first originated in rural Bolivia in 2004.
- The virus is named Chapare after a rural province in the northern region of central Bolivia, in which it was first observed.
- It belongs to the same Arenavirus family that is responsible for illnesses such as the Ebola virus disease (EVD).
- They are generally carried by rats and can be transmitted through direct contact with the infected rodent, its urine and droppings, or through contact with an infected person.
- A disease vector is any agent which carries and transmits an infectious pathogen into another living organism.
- The virus causes Chapare Hemorrhagic Fever (CHHF), with the following symptoms

1. Hemorrhagic fever much like Ebola.
 2. Viral hemorrhagic fevers are a severe and life-threatening kind of illness that can affect multiple organs and damage the walls of blood vessels.
- Virus can spread from person to person, it spreads only through direct contact with bodily fluids.
 - The disease is also known to be most commonly transmitted in more tropical regions, particularly in certain parts of South America where the small-eared pygmy rice rat is commonly found.
 - Since there are no specific drugs to treat the disease, patients generally receive supportive care such as intravenous fluids.
 - The recent biggest outbreak of the 'Chapare virus' was reported in 2019, when three healthcare workers contracted the illness from two patients in the Bolivian capital of La Paz.

22.11 Tinnitus

- Tinnitus is the perception of noise or ringing in the ears.
- Tinnitus isn't a condition itself — it's a symptom of an underlying condition, such as age-related hearing loss, ear injury or a circulatory system disorder.
- Tinnitus can significantly affect quality of life.
- One may experience fatigue, stress, sleep problems, trouble concentrating, memory problems, depression, anxiety and irritability, etc. Although it can worsen with age, for many people, tinnitus can improve with treatment.
- Treating an identified underlying cause sometimes helps. Other treatments reduce or mask the noise, making tinnitus less noticeable.
- Treatments may include hearing aids, sound-masking devices, medicines, and ways to learn how to cope with the noise.
- New research has found that Tinnitus is being exacerbated by Covid-19 and also by the measures being taken to fight the infection.
- It found that 40% of those displaying symptoms of Covid-19 simultaneously experience a worsening of their tinnitus.

22.12 m-RNA Vaccine

- It is a coronavirus vaccine based on mRNA, once injected into the body, will instruct the body's cells to create copies of the spike protein.
- The mRNA is coded to tell the cells to recreate the spike protein of the coronavirus SARS-CoV-2, which causes Covid-19.
- It is the spike protein which appears as spikes on the surface of the coronavirus that initiates the process of infection and it allows the virus to penetrate cells, after which it goes on to replicate.
- The mRNA vaccines work by using mRNA or messenger RNA, which is the molecule that essentially puts DNA instructions into action.
- The mRNA vaccines have the advantage that scientists are not growing the virus in the lab, which has been a hindrance sometimes to create enough virus or viral particles to give in a vaccine.
- Recently, US based pharma company announced results of human trials on the mRNA vaccine, it is found the vaccine 94.5 per cent effective.

22.13 Guillain Barre Syndrome

- Recently some patients infected with Covid-19 have been found suffering from Guillain Barre Syndrome (GBS).
- Guillain Barre Syndrome is a very rare autoimmune disorder in which the patient's immune system attacks nerves.



- The exact cause of Guillain-Barre syndrome is unknown, but as per the World Health Organisation (WHO), GBS is often preceded by an infection.
- This could be a bacterial or viral infection.
- It may also be triggered by vaccine administration or surgery.
- In the past, patients of Middle East respiratory syndrome (MERS), Zika virus, Human Immunodeficiency Virus (HIV), Herpes virus and Campylobacter jejuni have shown symptoms of GBS.
- Symptoms of GBS include - Weakness or tingling sensations, which usually start in the legs, and can spread to the arms and face.
- Difficulty with facial movements, including speaking, chewing or swallowing.
- Double vision, rapid heart rate, low or high blood pressure.
- Complication will lead to respiratory failure as the worst outcome, or weakness and effect on walking and limb movement.
- Intravenous immunoglobulin (IVIG) and Plasma therapy can be used as treatments

22.14 Campylobacter Jejuni

- Campylobacteriosis is an infection by the Campylobacter bacteria. It is more commonly known as C. jejuni.
- It is among the most common bacterial infections of humans, often a foodborne illness.
- It produces bloody diarrhea or dysentery syndrome, mostly including cramps, fever and pain internally.

22.15 Suspension of Remdesivir

- Remdesivir is a drug with anti-viral properties that was manufactured by US-based Biotechnology Company in 2014, to treat Ebola cases.
- Recently WHO has dropped Remdesivir from the prequalification list which is an official list of medicine for Covid-19.
- The suspension is a signal to countries that WHO, in compliance with the treatment guidelines, does not recommend countries procure the drug for Covid-19.
- WHO concluded that Remdesivir had no meaningful effect on mortality or on other important outcomes for patients, such as the need for mechanical ventilation or time to clinical improvement.

OTHERS

22.16 Param Siddhi

- Recently, Param Siddhi has achieved global ranking of 63 in TOP 500 most powerful non-distributed computer systems in the world.
- Param Siddhi is the high performance computing-artificial intelligence (HPC-AI) supercomputer established under National Supercomputing Mission (NSM).
- It is installed in the Centre for Development of Advanced Computing's (C-DAC) unit.
- The AI system will strengthen application development of packages in areas such as advanced materials and computational chemistry & astrophysics.
- The National Super Computing Mission (NSM) is rapidly boosting high power computing in the country through its various phases to meet the increasing computational demands.
- These super computers are used by academia, researchers, MSMEs, and startups in areas like oil exploration, flood prediction as also genomics, and drug discovery.
- The highlight of the NSM is to build more Peta Flops, High-Performance Computing (HPC) Facilities with convergence of Artificial Intelligence (AI).

Other Super Computers of India are



- **Pratyush** - It is a supercomputer used for weather forecasting at the Indian Institute of Tropical Meteorology, Pune.
- It is the 4.0 Peta flops (PF) high performance computer.
- It was ranked 78th on the November edition of the list.
- **Mihir** - It is installed at the National Centre for Medium Range Weather Forecast in Noida.
- It was ranked 146th on the November edition of the list.
- **Param Super Computers** and its locations
 1. PARAM Shivay - IIT-BHU
 2. PARAM Shakti - IIT-Kharagpur
 3. PARAM Bhrahma - Indian Institute of Science, Education and Research (IISER), Pune.

22.17 Gandhian Young Technological Innovation

- Union Ministry of Science & Technology announced Gandhian Young Technological Awards in two categories.
- The awards and appreciations are given under these two categories to encourage technology students to move towards setting up Biotech and other start-ups.
- **SITARE-GYTI** - Students Innovations for Advancement of Research Explorations - Gandhian Young Technological Innovation (SITARE-GYTI) under Biotechnology Industry Research Assistance Council (BIRAC), Department of Biotechnology (DBT).
- The SITARE-GYTI awards are given every year to the most promising technologies developed by the students in life sciences, biotechnology, agriculture, medical devices etc.
- **SRISTI-GYTI** - Sustainable Technological Innovations-Gandhian Young Technological Innovation (SRISTI-GYTI) given by SRISTI.
- This award is given to students in other engineering disciplines.

22.18 Desalination Plant

- Recently, Maharashtra announced the setting up of a desalination plant in Mumbai.
- The plant will process 200 million litres of water daily (MLD), and will help in overcoming the water shortage faced by Mumbai in the months of May and June.
- Maharashtra will be the fourth state to experiment with Desalination Plants.
- It can extend water supplies beyond what is available from the hydrological cycle, providing an “unlimited”, climate-independent and steady supply of high-quality water.

23. INDEX AND REPORT

23.1 G20's New Global Index

- Recently, India called for a “New Global Index” for the post-Corona world at the G20 Nations summit held virtually.
- New Global Index will be based on 4 pillars of
 1. **Talent** - The focus must shift to multi-skilling and reskilling from capital and finance to create a vast human talent pool.
 2. **Technology** - Ensuring that technology reaches all segments of the society and the value of new technologies should be measured by their benefit to humanity.
 3. **Transparency** - Reforms such as Right to Information and Ease of Doing Business promote transparency in governance in India.

4. **Trusteeship towards the planet** - The world should deal with the environment and nature as trustees rather than owners which would inspire us towards a holistic and healthy lifestyle.

23.2 WWF Report on Water Scarcity

- World Wide Fund for Nature (WWF) has recently release a report on water scarcity.
- According to the recent report hundred cities worldwide, including 30 in India, face the risk of 'severe water scarcity' by 2050.
- This will be due to a dramatic increase in Cities population percentage to 51 per cent by 2050, from 17 per cent in 2020.
- The cities include global hubs such as Beijing, Jakarta, Johannesburg, Istanbul, Hong Kong, Mecca and Rio de Janeiro.
- In the report more than half of the identified cities are from China and India.
- Thirty Indian cities are included in the list, the top five cities are as follows
 1. Jaipur
 2. Indore
 3. Thane
 4. Vadodara
 5. Srinagar
- The report suggested that, Cities needed to invest more in nature-based solutions and enhance the health of river basins, watersheds and wetlands to build resilience to water risks.

23.3 Rise in PMI

- Purchasing Managers Index (PMI) is an indicator of business activity - both in the manufacturing and services sectors.
- It is calculated separately for the manufacturing and services sectors and then a composite index is also constructed.
- The PMI summarizes whether market conditions as viewed by purchasing managers are expanding, neutral, or contracting.
- PMI Data means the following
 1. The headline PMI is a number from 0 to 100.
 2. PMI above 50 represents an expansion when compared to the previous month;
 3. PMI under 50 represents a contraction, and
 4. A reading at 50 indicates no change.
- The PMI is usually released at the start of every month.
- Recently India's PMI rose from 56.8 in September to 58.9 in October 2020.
- PMI is compiled by IHS Markit for more than 40 economies worldwide.
- IHS Markit is a global leader in information, analytics and solutions for the major industries and markets that drive economies worldwide.

23.4 Global Seasonal Update

- Global Seasonal Climate Update is prepared and released by World Meteorological Organization.
- It is based on an ensemble of global prediction models run by WMO-accredited centres around the world.
- It includes data on Global-scale seasonal forecasts, including those of precipitation and surface temperature, which take into account ENSO as well as other climate drivers.

- There are now 13 WMO Global Producing Centres of Long-Range Forecasts, whose products are consolidated by a Lead Centre of Long-Range Forecast Multi Model Ensemble

23.5 Likelihood of Future Pandemics Report

- Recently IPBES has released a report on future pandemics.
- The report has warned that future pandemics will emerge more often, they'll spread more rapidly, do more damage to the world and kill more people than COVID-19, unless significant measures are taken.
- Key Findings of the report are as follows
 1. COVID-19 is at least the sixth pandemic to have taken place in the last century since the Great Influenza Pandemic of 1918.
 2. Three of the pandemics were caused by influenza viruses, one by HIV followed by SARS and COVID-19.
 3. Almost all the pandemics so far, have been zoonoses (diseases caused by germs that spread between animals and people).
 4. While the current pandemic's origins lie in microbes carried by animals, "like all pandemics, its emergence has been entirely driven by human activities.
 5. More than 70% of emerging diseases, such as Ebola, Zika and Nipah, are caused by microbes found in animals which spread due to contact among wildlife, livestock and people.
 6. About 30% of emerging infectious diseases are attributed to land-use change, agricultural expansion and urbanisation.
 7. There are over 1.7 million currently 'undiscovered' viruses that exist in mammals and birds, out of which up to 827,000 could have the ability to infect people.
- **Suggestions from the report** - Pandemic risk can be lowered by reducing the human activities that drive loss of biodiversity.

23.6 Academic Freedom Index

- Academic freedom, in general, refers to a scholar's freedom to express ideas without risk of official interference or professional disadvantage.
- It has been published by Global Public Policy Institute as a part of a global time-series dataset (1900-2019).
- It compares levels of academic freedom worldwide and enhances the understanding of its curtailments.
- The AFI used eight components to evaluate the scores namely Freedom to research and teach, Freedom of academic exchange and dissemination, Institutional autonomy, Campus integrity, Freedom of academic and cultural expression, Constitutional protection of academic freedom, International legal commitment to academic freedom under the International Covenant on Economic, Social and Cultural Rights, and existence of universities.
- The scores are scaled 0-1. In the recent AFI, India has scored considerably low with a score of 0.352.
- India with a score of 0.352, is closely followed by Saudi Arabia (0.278) and Libya (0.238).
- The index did not report data for 35 countries - including the United States and Australia.
- Top Performers of the Index are Uruguay and Portugal top the AFI, with scores of 0.971 each, followed closely by Latvia (0.964) and Germany (0.960).