

VISION IAS

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PERSONALITY DEVELOPMENT PROGRAMME

CIVIL SERVICES EXAMINATION 2019

Programme Features

- ★ DAF Analysis Session with senior faculty members of Vision IAS
- ★ Mock Interview Session with Ex-Bureaucrats/ Educationists
- ★ Interaction with Previous toppers and Serving bureaucrats
- ★ Performance Evaluation and Feedback
- ★ Recorded Mock interview sessions to be provided

1. POLITY & GOVERNANCE

1.1. CITIZENSHIP AMENDMENT ACT

Why in News?

Citizenship Amendment Act (CAA), 2019 was recently enacted by the Parliament that seeks to amend the Citizenship Act, 1955.

Background

- **Article 11 of Indian constitution** empowers Parliament to make any provision with respect to the acquisition and termination of citizenship and all other matters relating to citizenship.
- Citizenship (Amendment) Act, 2003 provided that **'illegal migrants' will not be eligible to apply for citizenship by either registration or naturalisation.**
- Section 2(1)(b) of Citizenship Act, 1955 defines **illegal migrant** as a foreigner who:
 - enters the country without valid travel documents, like a passport and visa or
 - enters with valid documents, but stays beyond the permitted time period.
- However, considering the plight of minorities in these countries, some concessions have been given in recent times, such as:
 - Foreigners Act, 1946 (regulates the entry and departure of foreigners in India) and the Passport (Entry into India) Act, 1920 (mandates foreigners to carry passport) empower the central government to imprison or deport illegal migrants.
 - ✓ In 2015 and 2016, two notifications were issued by Central government exempting certain groups of illegal migrants from provisions of the 1946 and the 1920 Acts. These groups are Hindus, Sikhs, Buddhists, Jains, Parsis and Christians from Afghanistan, Bangladesh and Pakistan, who arrived in India on or before December 31, 2014. This implies that these groups of illegal migrants will not be deported or imprisoned for being in India without valid documents.
 - A Citizenship Amendment Bill was introduced in Parliament in 2016 but the bill got lapsed.

Link between CAA and NRC/NRIC

According to Section 14A of the Citizenship Act, 1955 (inserted by Citizenship (Amendment) Act, 2003):

- The Central Government **may compulsorily register every citizen of India** and issue **national identity card** to him.
- The Central Government may maintain a **National Register of Indian Citizens (NRIC)** and for that purpose **establish a National Registration Authority.**
- **Registrar General, India**, appointed under Registration of Births and Deaths Act, 1969 shall act as the National Registration Authority and he shall function as the **Registrar General of Citizen Registration.**
- To implement CAA, citizens and illegal migrants have to be identified. So, a National Register of Indian Citizens (NRIC) is the necessary first step.

Link between NRC and NPR

- The **National Population Register (NPR)** is a list of "usual residents of the country". A "usual resident of the country" is one who has been residing in a local area for at least the last six months or intends to stay in a particular location for the next six months. So, **NPR may have foreigners as well.**
- However, after a list of residents is created, if a nationwide NRC is needed, it could be done by verifying the citizens from that list. So, a NRC, if undertaken, would flow out of NPR.

Key provisions of the Citizenship Amendment Act (CAA), 2019

- The amendment provides that illegal migrants who fulfil four conditions **will not be treated as illegal migrants under the Act.** The conditions are:
 - they are Hindus, Sikhs, Buddhists, Jains, Parsis or Christians
 - they are from Afghanistan, Bangladesh or Pakistan
 - they entered India on or before December 31, 2014 they are not in certain tribal areas of Assam, Meghalaya, Mizoram, or Tripura included in the Sixth Schedule to the Constitution, or areas under the "Inner Line" permit, i.e., Arunachal Pradesh, Mizoram, and Nagaland.
 - ✓ These tribal areas include Karbi Anglong (in Assam), Garo Hills (in Meghalaya), Chakma District (in Mizoram), and Tripura Tribal Areas District.
- All **legal proceedings against above category of migrants** in respect of their illegal migration or citizenship will be closed.
- The **period of naturalisation** has been reduced **from 11 years to 5 years** for **above category of migrants.**

- The 1955 Act allows a person to apply for citizenship by naturalisation, if the person meets certain qualifications. One of the qualifications is that the person must have resided in India or been in central government service for the last 12 months and at least 11 years of the preceding 14 years.
- **Grounds for cancelling OCI registration:** The amendment provides that the central government may cancel registration of OCIs, if the OCI has **violated Citizenship Act or any other law so notified by the central government**. Also, the cardholder has to be given an opportunity to be heard.
 - The Act provides that the central government **may cancel registration of OCIs on five grounds** including **registration through fraud, showing disaffection to the Constitution, engaging with the enemy during war, necessity in the interest of sovereignty of India, security of state or public interest**, or if within five years of registration the OCI has been sentenced to imprisonment for two years or more.

Arguments in favour of the Amendment Act

- **Religious persecution-** Nehru-Liaquat pact, also known as the Delhi Pact, signed in 1950, sought to provide certain safeguards and rights to religious minorities like unrecognition of forced conversions and returning of abducted women and looted property etc.
 - However, Afghanistan, Pakistan and Bangladesh have a state religion with discriminatory blasphemy laws, religious violence and forced conversions which has resulted in religious persecution of minority groups.
 - For instance, in 1951, the Non-Muslim minorities population 23.20% in Bangladesh which is around 9.6% in 2011.
- **Illegal immigration** from neighboring countries has been a contentious issue for decades. E.g. During the 6-year long agitation that started in 1979 in Assam, the protestors demanded the identification and deportation of all illegal foreigners – predominantly Bangladeshi immigrants. This act would **differentiate between** illegal immigrants and persecuted communities seeking refuge.

Arguments against the Amendment Act

- **Classification of countries:** It is not clear why migrants from these countries are differentiated from migrants from other neighboring countries such as Sri Lanka (Buddhism is the state religion) and Myanmar (primacy to Buddhism).
 - Sri Lanka has had a history of persecution of a linguistic minority in the country, the Tamil Eelams.
 - Myanmar has had a history of persecution of a religious minority, the Rohingya Muslims.
- **Classification of minority communities:** The amendment simply mentions the 6 'minority communities' and there is no mention of 'persecuted minorities' or 'religious persecution.' So, ideally it should not differentiate between religious persecution and political persecution. Moreover, exclusion of Muslims, Jews and Atheists from CAA is said to be violation of Article 14 of the constitution. For example:
 - Persecution of co-religionists like Shias, Hazaras or Ahmadiyya Muslims in Pakistan (who are considered non-Muslims in that country).
 - The murder of atheists in Bangladesh has also been noticed.
- **Classification based on date of entry:** CAA also offers differential treatment to migrants based on their date of entry into India, i.e., whether they entered India before or after December 31, 2014.
- **Against the letter and spirit of Assam Accord:** The Assam accord put the date of detection and deportation of foreigners as March 25 1971, whereas, for other states, it was 1951. CAA extends the cut-off date for NRC from 25th March 1971 to 31st Dec 2014. CAA extends the cut-off date for NRC from 25th March 1971 to 31st Dec 2014.
- **Cancellation of OCI registration:** giving the central government the power to prescribe the list of laws whose violation result in cancellation of OCI registration, may amount to an excessive delegation of powers by the legislature.
- **Implication on external relations:**
 - The amendment implies that **religious persecution of the Hindu minority in Bangladesh** as one of the reasons for the amendment and also implies that Muslim migrants from Bangladesh will be "thrown out". This invites trouble from Bangladesh with bearing on bilateral issues.
 - India's strong commitment to civic nationalism and religious pluralism, have been important pillars on which **India's strategic partnerships with the US and the West** have been built, which may be imperiled.

Conclusion

- Indian democracy is based on the concept of welfare and secular state and a progressive constitution where Article 21 provides the Right of a dignified life. So, it becomes a moral obligation of the state to allay the fears of minority communities, if any. Hence, the classification done in CAA on the basis of country of origin and religious minorities can be made more inclusive.
- Moreover, India should enact a refugee law wherein the right to live a life without fear or confinement can be protected. If the fear is that people may seek permanent asylum, the UNHCR can work with them officially for their voluntary repatriation, and without rendering long-term refugees ineligible for applying for citizenship.

Note: For more details on NPR, please refer to VisionIAS Current Affairs-September 2019 edition.

1.2. CREAMY LAYER CRITERIA FOR SC/ST IN PROMOTIONS

Why in News?

The Central Government has demanded for a review of 2018 Supreme Court Verdict in **Jarnail Singh vs Lachhmi Gupta Case**, related to reservations in promotions for SC/ST.

Background

- **M. Nagaraj vs Union of India Case (2006)**
 - The Supreme Court upheld the constitutional validity of **reservations for SCs and STs to include promotions** with three conditions:
 - ✓ quantifiable data on the backwardness of Scheduled Castes (SC) and Scheduled Tribes (ST)
 - ✓ the facts about their inadequate representation
 - ✓ the overall administrative efficiency
- The Centre approached supreme Court that the verdict in the M Nagaraj case put **unnecessary conditions in granting quota benefits**.
- Thus, In **Jarnail Singh vs Lachhmi Gupta Case (2018)** Supreme Court allowed for grant of quota for promotions in the government jobs to SCs and STs **without the need to "collect quantifiable data"**.
- The court also asked the government to examine the possibility of **introducing creamy layer for Scheduled Castes (SCs) and Scheduled Tribes (STs)** by saying that if some sections bag all the coveted jobs, it will leave the rest of the class as backward as they always were.
- It declined the demand to refer the case to a **7 judge bench** to reconsider its 2006 Nagaraj judgement.
- Now, the union government has urged the court to reconsider the ruling and refer the issue to a seven-judge Bench.

Creamy Layer

- The concept has its genesis in **the Indira Sawhney Case (1992)**. Supreme Court asked the Government to define the criteria by fixation of **income, property or status**.
- Currently creamy layer criteria is applicable to **Other backward classes (OBCs)** in reservation.
- At present, Group A and Group B officers of both Central and State Government, Employees of Armed Forces and PSUs along with people earning more than 8 lakh per annum come under the purview of Creamy layer.

Arguments for applying the Creamy Layer concept to SCs/STs

- **Improved income and status:** The creamy layer within the SCs and STs has improved socio-economic mobility and by that virtue does not face discrimination of similar intensity.
- **Article 335:** It states that Affirmative action should be subject to the overall efficiency of Public Administration. Reservation in promotions may affect the merit-based culture of the organization.
- **Prioritizing most marginalized:** Supreme Court in Jarnail Singh Case Judgement noted that the benefits, by and large are **snatched away by the top creamy layer** of the backward caste or class, keeping the weakest among the weak always weak and leaving the fortunate layers to consume the whole cake.

Arguments for not applying the Creamy Layer concept to SCs/STs

- **Discrimination within service:** It is argued that there is widespread discrimination within services. For example, there are **about 12,000 cases** lying with the SC/ST Commission, complaining about **discrimination in service**.

- **Not Anti-poverty programme:** Reservation for Dalits is **not to undo economic backwardness** but as a remedy for societal discrimination based on untouchability. Thus, it may not possess a direct correlation with economic status.
- **Difference between OBCs and SCs:** OBCs don't face the kind and extent of discrimination faced by SCs. Generally, if OBCs manage to cross a certain economic threshold, the extent of social discrimination reduces substantially.

Way Forward

- **Consultative Approach:** Reservation is a very sensitive topic, thus any decision on it should be in consultation with all the stakeholders.
- **Strengthening Other tools:** like encouraging Dalit Entrepreneurship, providing loans (E.g. Stand-up India Scheme), Increasing awareness etc. can also indirectly improve the Socio-Economic mobility of Dalits.

1.3. 126TH CONSTITUTIONAL AMENDMENT BILL

Why in news?

Recently, **126th Constitutional Amendment Bill** was passed by Parliament.

More on news

- This bill was brought for two objectives:
 - **Extend reservation for Scheduled castes (SC) and Scheduled Tribes (ST)** to Lok Sabha and legislative bodies.
 - **Remove provision of nominating Anglo Indians** to Lok Sabha and legislative bodies.
- **The bill has provisions for amending article 334 and extending reservation only for Scheduled castes (SC) and Scheduled Tribes (ST)** to Lok Sabha and legislative bodies till 25th January, 2030 (which was expiring in 2020).
- **Article 334** originally provided that reservation of seats and special representation would cease 10 years after the commencement of Constitution. But this was extended every 10 years (8th, 23rd, 45th, 62nd, 79th and 95th amendments).
- Currently, only some state Assemblies like Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand etc. have one Anglo-Indian member each. The Amendment does away with this as well.
- No member from the Anglo-Indian community has been nominated to the current Lok Sabha.
- Earlier a panel, comprising Union Defence Minister, Home Minister, Social Justice Minister etc. had observed that the community was doing well and did not need reservation.
- Since, the amendment falls within the purview of Article 368 (2) (d) dealing with **“the representation of States in Parliament”**, it is required to be **ratified by the Legislature of not less than half of the States** by simple majority.
 - **Article 368** deals with power of Parliament to amend the Constitution and procedure therefor.

Who is An Anglo-Indian?

According to Article 366(2), An Anglo-Indian means a person whose father or any of whose other male progenitors in the male line is or was of European descent but who is domiciled within the territory of India and is or was born within such territory of parents habitually resident therein and not established there for temporary purposes only”.

Constitutional Provisions for reservation of seats

- **For SC/STs**
 - **Article 330 and 332** provides for the reservation of seats for SC/STs in Lok Sabha and State Legislative Assemblies respectively, **on the basis of their population ratio**.
 - Also, **there is no bar** on SC/STs candidates **contesting from general seats**.
- **For Anglo-Indians:**
 - **The reservation for Anglo Indians was provided as they were in very small numbers** and were **diffused over different parts** of the country.
 - The idea of such nominations is traced to Frank Anthony, who headed the All India Anglo-Indian Association. Article 331 was added in the Constitution following his suggestion to Jawaharlal Nehru.

- **Provisions**

- ✓ **Under Article 331** President can nominate two members of Anglo-Indian community in Lok Sabha, if not adequately represented.
- ✓ **Article 333** provides same powers to Governor of a state to nominate one Anglo-Indian member.
- ✓ **According to the 10th Schedule** of the Constitution, Anglo-Indian members of Lok Sabha and state Assemblies can take the membership of any party within six months of their nomination. But, once they do so, they are bound by their party whip.
- ✓ The Anglo-Indian **members enjoy the same powers** as other MPs, but they cannot vote in the Presidential election.

1.4. REFORMS IN CRIMINAL LAWS

Why in news?

Recently, the Union Ministry asked all state governments to send their suggestions for a **major overhaul and recasting of the Indian Penal Code (IPC) and the Code of Criminal Procedure (CrPC)**, thus paving way for reforming criminal justice system of India.

More about news

- **Bureau of Police Research and Development (BPRD)** will undertake review of the laws such as IPC, CrPC, Indian Evidence Act and Narcotic Drugs and Psychotropic Substances Act.
 - BPRD under Ministry of Home Affairs was set up in 1970 in furtherance of the objective of the Government for the **modernisation of police forces**.

Need for reforms in Criminal laws (IPC and CrPC)

- **To make the laws more moral and ethical:** Some penal code offences need to be dropped to make the code consistent with the new ideals of constitutional morality, viz. the narrowest possible definitions of crimes, presumption of innocence etc.
- **To give a fair share to individual:** In a criminal justice system, since an accused as an individual is pitted against the might of the state, criminal law must ensure that the state does not take undue advantage of its position as prosecutor.
- **To get rid of obsolete and archaic provisions:** Criminal and penal codes need substantial changes to fit into the liberty model and its obsolete provisions must go.
 - **IPC was intended to be regularly revised by legislative amendment.** This did not happen, as a result the courts had to undertake this task upon themselves.
 - The **result was not very satisfactory** as most amendments have been ad hoc and merely reactive.
- **To remove ambiguity and vagueness:** For instance, the distinction between 'culpable homicide' and 'murder' is criticised as the 'weakest part of the code' as definitions are obscure.
 - 'Culpable homicide' is defined, but 'homicide' is not defined at all.

Way Ahead

- Any revision of the IPC, therefore, needs to be done while keeping several principles in mind. Such as:
 - Reforms must be introduced to **uphold democratic values**, and human rights must be given a high priority. **Victimological underpinnings** ought to be given a major thrust in reforming laws to identify the rights of crime victims.

About IPC and CrPC

- IPC determines the definition of crime, while the CrPC informs about the criminal investigations process
- **Indian Penal Code:** It is the **official criminal code** of India.
 - It is a comprehensive code intended to cover all **substantive aspects** of criminal law.
 - The code was drafted in 1860 on the **recommendations of first law commission of India established under Lord Macaulay**.
 - The Code has been amended several times and is now supplemented by other criminal provisions.
 - **Ex:** Section 377(Unnatural offences), Repealed Section 309(Suicide), Section 497(Adultery), now repealed
- **CrPC:** It is the **main legislation on procedure for administration of substantive criminal law** in India.
 - It was enacted in 1973, though initially created in 1882.
 - It provides the machinery for the **investigation** of crime, apprehension of suspected criminals, collection of evidence, determination of guilt or innocence of the accused person and the **determination of punishment** of the guilty.

- **Construction of new offences** and reworking of the existing classification of offences must be informed by the principles of criminal jurisprudence which have substantially altered in the past four decades.
- **New types of punishments** like community service orders, restitution orders, and other aspects of restorative and reformatory justice could also be brought in this fold.
- **Classification of offences** must be done in a manner conducive to management of crimes in the future.
- **Unprincipled criminalisation must be avoided** to save the state from dealing with too many entrants into the criminal justice system.
- **On the procedural side**, sentencing reforms are highly imperative. Principled sentencing is needed as judges at present have the discretion to decide the quantum and nature of sentence to be imposed.

Criminal justice is in a **state of policy ambiguity** therefore there is a need to draft a **clear policy** that should inform the changes to be envisaged in the IPC or CrPC.

1.5. DOCTRINE OF NEUTRALITY

Why in news?

In recent times, constitutional offices have come under the scanner of Supreme Court (SC) **on the grounds of political neutrality**.

Background

- Through its various judgements, SC has highlighted the need for authorities like Speaker and Governor **to be faithful to doctrine of neutrality and not vacillate under “prevailing political pressures”**.
- **Karnataka Case (Speaker in question)**: On various petitions filed by former dissident Karnataka legislators against the Speaker’s decision to disqualify them for defection, the SC said
 - “if Speaker is not able to disassociate from his political party and **behaves contrary to the spirit of the neutrality and independence, such person does not deserve** to be reposed with public trust and confidence”
- Recent years have seen central governments cross swords with the **Comptroller and Auditor General, Reserve Bank of India, Election commission (EC), etc. Alternatively**, there are also jibes that these institutions allow themselves to be **controlled by the government**

Understanding doctrine of Neutrality

- It is a bedrock of a constitutional democracy. Neutrality is about being **‘a third’ vis-à-vis a conflict between others**.
- The claim of neutrality is a claim addressed to the belligerent parties to show respect for the choice of the neutral and **not to become involved in their conflict**.

Significance of Neutrality Doctrine in case of Constitutional offices

- **Upholding constitutional trust**: A constitutional trust has been vested in the office of Speaker, Governor, EC etc. which needs to ensure their neutrality in their actions.
- **Ensuring political fairness**: The exercise of the wide constitutional powers by the constitutional office such as Governor’s, speaker’s, CAG’s and Election Commission’s is supposed to be in line with the “sacred” conventions of political neutrality and fairness.
 - However, we see erosion of such conventions in case of Uttarakhand and Arunachal Pradesh, the Speakers in both assemblies had helped ruling parties keep their flocks together by using their powers to disqualify MLAs under the Tenth Schedule.
- **Upholding federalism**: In India, the balance of power is tilted towards the Union. The importance of the constitutional posts such as Governor’s arises from, he being the crucial link within this federal structure in maintaining effective communication between the Centre and a State.
- **For continuity in governance and keeping a check on the executives**: Constitutional posts such of Speakers and Governors, acting independently of each other or in concert, can navigate the destiny of State governments.
 - As a figurehead who ensures the continuance of governance in the State, even in times of constitutional crises, Governor’s role is often that of a neutral arbiter in disputes settled informally within the various strata of government, and as the conscience keeper of the community.

- **For a fair system of election and thus strengthening democracy:** Elections are pivotal to the quality of a country's governance and can either greatly advance or set back a country's long-term democratic development. Therefore here EC's neutrality is of utmost significance and value.
- **To maintain the health of the economy:** The independence, powers and responsibilities of the constitutional offices like CAG's place high ethical demands on the auditor and the staff he employs or engages for auditing and accounting work.
 - The general standards for the CAG include independence from the legislature and from the executive so that any economic misconduct by the government or siphoning of the public exchequer can be pointed out.

Conclusion

The principle of political neutrality, which requires the state to remain neutral on disputed questions is an extension of traditional liberal principles of toleration and independence of opinion.

Thus, political neutrality casts duties not only on constitutional offices but also on government of the day. The political leaders must protect independent constitutional offices from political interference and must not involve them in political activities or debates.

For details on Karnataka Case refer to November 2019 Monthly Current Affairs.

1.6. GOOD GOVERNANCE INDEX

Why in News?

Recently, Ministry of Personnel, Public Grievances & Pensions launched 'Good Governance Index' on the occasion of Good Governance Day (25th December).

About Good Governance Index

- Good Governance Index (GGI) is a uniform tool across States to **assess the Status of Governance and impact of various interventions** taken up by the State Government and UTs.
- The **objectives of GGI** are to **provide quantifiable data to compare the state of governance in all states and UTs.**
- The GGI takes into consideration **ten sectors** as shown in Infographic.
- The **states and UTs are divided into three groups:** a) Big States, b) North-East & Hill States and c) UTs.
- The states and UTs are ranked on all indicators separately, at the same time composite ranking is also calculated for these states and UTs under their respective groups based upon these indicators.
- GGI helps to formulate and implement suitable strategies for improving governance and shift to result oriented approaches and administration.



Composite Ranking of All the States

- Big States category: Tamil Nadu has topped followed by Maharashtra, Karnataka, Chhattisgarh and Andhra Pradesh.
- North-East and Hill States category: Himachal Pradesh ranked first, followed by Uttarakhand, Tripura, Mizoram and Sikkim.
- UTs: Puducherry topped followed by Chandigarh and Delhi.

Related News

'Nagpur Resolution: A holistic approach for empowering citizens' was adopted during a regional conference on **'Improving Public Service Delivery – Role of Governments'**, in Nagpur.

- The conference was organised by the **Department of Administrative Reforms and Public Grievances (Ministry of Personnel, Public Grievances & Pensions)**, in collaboration with the **Government of Maharashtra** and the **Maharashtra State Commission for Right to Public Services**.
- The resolution emphasized upon:
 - Empowering citizens through **timely updation of citizens charters**,
 - Empowering citizens by **adopting a bottom-up approach to improve quality of grievance redressal**
 - Adopting a holistic approach **for improved service delivery through digital platforms**;
 - Focussing on **dynamic policy making and strategic decisions, monitoring of implementation, appointment of key personnel, coordination and evaluation**;
 - Ensure **timely publication of Good Governance Index** to identify the quality of governance in 10 sectors.

1.7. POLITICAL PARTIES REGISTRATION TRACKING MANAGEMENT SYSTEM (PPRTMS)

Why in news?

Election Commission of India launched PPRTMS recently.

About PPRTMS

- It will be **implemented through an online portal to facilitate tracking of status of application**.
- The **applicant is required to provide contact mobile number and email address** of the party / applicant in application if wishes to track the progress of the application.

Registration of Political Parties

- The Election Commission registers political parties for the purpose of elections and grants them **recognition as national or state parties on the basis of their poll performance**.
- The other parties are simply declared as **registered-unrecognised parties**.
- Registration of political parties is governed by the provisions of **section 29A of the Representation of the People Act, 1951**.
 - A party seeking registration has to **submit an application to the Election Commission within a period of 30 days following the date of its formation of party** with certain basic particulars such as name, address, membership details, names of office bearers etc.
 - After submitting the application applicant party is required to get an **advertisement published in two National and two Local Dailies** giving the name and address of the party and its office bearers.
 - Name of political parties seeking registration **should not have religious connotation and name should not be similar to existing political parties**.
 - Also, **names which are translated version of existing political parties (either in Hindi, English or regional language) shall not be granted registration** under section 29A of RPA 1951.
 - The party must declare in its constitution that it **must contest an election conducted by EC within 5 years of its registration** (it will be taken off the list of registered parties if it fails to do so).
 - There should be a **specific provision of the rules/constitution of the party regarding internal democracy**, organisational elections at different levels etc.
 - If anyone has any objection to the Party being registered, they can **place their objections before the Election Commission**.

1.8. ARMS (AMENDMENT) ACT, 2019

Why in news?

Recently, Parliament passed Arms (Amendment) Act, 2019 which seeks to amend Arms Act, 1959.

Need of amendment

- To **check illicit trafficking and commission of criminal offences** as indicated by law enforcement agencies.
- To **check illegal manufacturing of arms and punish people involved** in such acts.
- To **ensure that firearms not to be used in a rash or negligent manner** in celebratory gunfire endangering human life or personal safety.

Provisions under Arms (Amendment) Act, 2019

- **License and number of permitted firearms:** A license must be obtained to acquire, possess, or carry any firearm. The Act **reduces the number of permitted firearms from three to one.**
- **Time period to deposit excess firearms:** It provides a time period of one year to deposit the excess firearms with the officer-in-charge of the nearest police station or with a licensed firearm dealer. The excess firearms will be delicensed within 90 days from the expiry of the one-year period.
- **Duration of validity:** It also **increases the duration of the validity of a firearm license** from three years to five years.
- **Ban on firearms:** It bans manufacture, sale, use, transfer, conversion, testing or proofing of firearms without license.
- It additionally prohibits obtaining or procuring un-licensed firearms and the conversion of one category of firearms to another without a license.
- **Increase in punishment and addition of new offences:** It amends the punishment in relation to several offences. It adds new offences like
 - Forcefully taking a firearm from police or armed forces punishable with imprisonment between 10 years and life imprisonment along with fine.
 - Using firearms in a celebratory gunfire which endangers human life or personal safety of others punishable with imprisonment of up to two years or fine of up to one lakh rupees or both.
 - It also defines offences committed by organised crime group and illicit trafficking. Illicit trafficking is punishable with imprisonment between 10 years and life along with a fine.
- **Special status to sportsperson:** It has also accorded special status to sportsperson who need firearms and ammunition for practice and participating in tournaments.
- **Tracking of firearms:** The central government may make rules to track firearms and ammunition from manufacturer to purchaser to detect, investigate and analyse illicit manufacturing and trafficking.

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2. INTERNATIONAL RELATIONS

2.1. INDIA-US 2+2 DIALOGUE

Why in news?

Recently, the second edition of India-US 2+2 ministerial dialogue took place in Washington D.C., U.S.A.

About 2+2 ministerial dialogue

- The 2+2 dialogue is an official meeting between **foreign & defence ministers** of India & U.S.A.
- This mechanism was conceptualised in 2017 with an aim to enhance the Indo-US engagement on multiple issues ranging from defence, trade, policies that affects both countries relation, role in Indo-Pacific region & terrorism etc.
- The inaugural '2+2' Indo-US dialogue was held in New Delhi in September 2018.

Importance of 2+2 mechanism

- It is the **highest-level institutional mechanism** between the two countries and provides for a review of the security, defence and strategic partnership between India and the United States.
- A crucial advantage emanating from this format is that the strategic matters of vital importance which fall under the domain of both the external affairs as well as defence ministries, **are comprehensively covered** and **any issue of jurisdiction and follow up** is taken care of.
- Given the recent **challenges in relations** between two nations – emanating from Trump on **trade** and the US Congress on **Kashmir** – the delineation of strategic ties is set to be the biggest takeaway from this high-level engagement.
- It moves away from the erstwhile approach of depending on the **personal chemistry** between political leaders.

Key Outcomes of the dialogue

- **Signing of Industrial Security Annex (ISA)**- which will facilitate the **exchange of classified military information** between Indian and the U.S. defense industries.
 - It would enable US arms manufacturers to transfer sensitive technologies to entities beyond the Indian public sector, to even corresponding partners in the private sector.
 - It will not only **allow sharing of information during crisis** through secure defence related channels but also **helps in Make in India program** in key items through collaboration between private companies of both sides.
 - It will go a long way in actualising the **Defence Technology and Trade Initiative (DTTI)** which would move the relationship from a traditional “**buyer-seller**” dynamic to one of **co-production** and **co-development**.

Other mechanisms of Indo-US engagement

- **Strategic Domain**- The **first India-U.S. Strategic and Commercial Dialogue** was held in 2015 in Washington and the second in New Delhi in 2016.
- **Defence Domain**- Bilateral dialogue mechanisms in the field of defence include Defence Policy Group (DPG), Defence Joint Working Group (DJWG), Defence Procurement and Production Group (DPPG), Senior Technology Security Group (STSG), Joint Technical Group (JTG) etc.
 - **Counter-Terrorism**- India-U.S. Joint Working Group on Counterterrorism held its 14th meeting in July 2016.
- **Economic Domain**- There are several dialogue mechanisms like Ministerial level Economic and Financial Partnership, Ministerial Trade Policy Forum, India-U.S. CEO's Forum, U.S.-India Infrastructure Collaboration Platform etc.
- **Energy and Climate Change**- It includes the U.S.-India Energy Dialogue, PACE (Partnership to Advance Clean Energy), Joint Clean Energy Research and Development Center (JCERDC), U.S.-India Partnership for Climate Resilience etc.
- **Science and Technology**- It includes Indo-U.S. Science & Technology Joint Commission, India-U.S. Science & Technology Forum (IUSSTF), U.S.-India Science & Technology Endowment Fund etc.
 - A “**monsoon desk**” has been established at the U.S. National Centres for Environmental Prediction.
 - India's contribution of \$250 million towards **Thirty-Meter Telescope Project** in Hawaii and Indian Initiative in Gravitational Observations (**IndiGO**) with U.S. LIGO Laboratory are examples of joint collaboration to create world-class research facilities.

Other 2+2 dialogues of India

- With Australia- Defense Secretary and Foreign Secretary
- With Japan- Foreign and Defence Ministerial dialogue

- **Finalisation of Defense Technology and Trade Initiative (DTTI) Standard Operating Procedure (SOP):** This will harmonise the two side's processes for identification, development and execution of projects under the DTTI.
 - The proposed **Industry-to-Industry Framework** under DTTI will establish a standing mechanism for dialogue and exchanges between the U.S. and Indian defence companies and their governments on defense technology and industrial cooperation.
- **Coalition for Disaster Resilient Infrastructure (CDRI):** United States has announced its commitment to be the founding member of the CDRI whose headquarters will be located in India.
 - U.S. participation in CDRI is a significant development since the U.S. has considerable expertise in the area.
- **Cooperation in Space-** Both sides have agreed to cooperate for exchange of information in **Space Situational Awareness (SSA)**, including space debris and space traffic management.
 - Space Situational Awareness (SSA) refers to keeping track of objects in orbit and predicting where they will be at any given time.
- **Other key outcomes -**
 - **Signing of Water Agreement-** to **promote technical cooperation** in water resources management and water technology.
 - **Signing of Science and Technology (S&T) Agreement-** It updates and **replaces the 2005 Agreement** and provides a framework for collaboration between the two countries.
 - **The Young Innovators Internship Programme (YIIP)-** it will create short-term internship opportunities in the U.S. for Indian students at post-secondary level or recent graduates.

2.2. RUSSIA-CHINA RELATIONS AND INDIA

Why in News?

- Recently, China and Russia inaugurated the first cross-border pipeline between their countries, called the **"Power of Siberia"**.
- The year 2019 marks the 70th anniversary of bilateral diplomatic relations between Russia and China.

About the Power of Siberia project

- The central aim of this gas pipeline is **to pump natural gas** to China from Russia's far-east regions like **Yakutia**.
- Construction for this pipeline started in 2014. The pipeline is over 4,000 km in length and has an annual capacity of over 61 billion cubic metres.
- **Importance of the project:**
 - China is the world's **largest energy importer and consumer**. It will help China to move away from coal to cleaner alternatives.
 - Russia is home to the largest reserves of natural gas on the planet which is 20% of the global total. The pipeline is a hedge against a potentially shrinking market in Europe, due to souring diplomatic relations.



Other signs of growing cooperation between Russia and China

- Before 2014 Russia never sold its most advanced weaponry to China but since then Russian arms exports to China have grown both quantitatively and qualitatively. E.g. Russia recently sold Sukhoi-35s fighter jets and S-400 surface to air missiles to China
- **Vostok 18**, the biggest Russian military exercise since the end of the cold war, involved Chinese participation at large scale.
- Both are part of **Shanghai Cooperation Organisation (SCO)** which is widely regarded as the "alliance of the East". SCO is a Eurasian political, economic, and security alliance and India is also a member.
- **On economic front:**
 - Both are part of **BRICS** and its other institutions such as **New Development Bank** which is often perceived to be a counter to Western institutions like World Bank.

- **Eastern Economic Forum**, an international forum held in Russia each year for the purpose of encouraging foreign investment in the Russian Far East, saw participation from China.

Implications on India-Russia Relations

- The steady **drift of Russia towards the strategic embrace of China** is becoming a new strategic headache for India.
- Russia's relationship with China has achieved a certain stage in which it feels it can no longer give India a **favourable position vis-à-vis China**. E.g. Russia has been at the forefront of advising India not to challenge China's ambitious **Belt and Road Initiative (BRI)**.
- Russia is being involved into the **Sino-Pakistan nexus**. Russia is reaching out to Pakistan despite Indian reservations and is changing its tune on the Afghanistan issue as well. E.g. It is now a **strong votary of negotiating with the Taliban and has not given due attention to Indian reservations** in this regard.

Conclusion

India's strategic response has reflected the hedging strategy. India has also cultivated a 'special and privileged partnership' with Russia. Despite the threat of American sanctions, the India recently signed a \$5.2 billion pact with Russia for procuring five S-400 air defence systems. In the world of complex inter-dependence, it is necessary for India and Russia to prevent third countries from exerting significant influence on their bilateral ties.

2.3. UN PEACEKEEPING FORCES

Why in News?

Indian peacekeepers in South Sudan received prestigious **UN medal**.

More about the News

- About 850 Indian peacekeepers serving in South Sudan have been awarded for their service and contribution to building peace in the strife-torn nation and supporting the local communities.
- Currently, **2,342 Indian troops and 25 police personnel** are deployed with the UN Mission in South Sudan (**UNMISS**).

About UN Peacekeeping Forces

- UN Peacekeeping is an instrument developed by the UN as a way to help countries torn by conflict to create the conditions for lasting peace.
- The **first UN peacekeeping mission was established in May 1948**, when the UN Security Council authorized the deployment of UN military observers to the Middle East to monitor the Armistice Agreement between Israel and its Arab neighbours.
- Currently, more than 110,000 military, police and civilian personnel from 125 countries currently serve in 14 peacekeeping operations.
- The **financial resources** of UN Peacekeeping operations are the collective responsibility of UN Member States. Decisions about the establishment, maintenance or expansion of peacekeeping operations are taken by the United Nations Security Council.

India's contribution to UN peacekeeping

- India's contribution to UN peacekeeping dates back to its inception in the 1950s, when the Indian Army contributed troops as well as medical corps during the **Korean War from 1950 to 1954**.

Types of Medals given by UN

- **Dag Hammarskjöld Medal**: A **posthumous award** to members of peacekeeping operations who lost their lives during service with a peacekeeping operation.
- **Captain Mbaye Diagne Medal**: To be awarded to those military, police, civilian United Nations personnel and associated personnel who **demonstrate exceptional courage**.
- **UN Medal**: To be awarded to military personnel and civilian police who **are or have been in the service** of the United Nations.

Principles of UN peacekeeping:

These principles, act as a tool for maintaining international peace and security, are inter-related and mutually reinforcing:

- **Consent of the parties**: UN peacekeeping operations are deployed with the consent of the main parties to the conflict.
- **Impartiality**: Peacekeepers should be impartial in their dealings with the parties to the conflict, but not neutral in the execution of their mandate.
- **Non-use of force except in self-defence and defence of the mandate**: UN peacekeeping operations are not an enforcement tool. However, they may use force at the tactical level, with the authorization of the Security Council, if acting in self-defence and defence of the mandate.

- India has provided **more than 2 lakh military and police** officers to UN Peacekeeping over 70 years, in **more than 50 missions**.
- Currently India is among the **largest troop contributors in the world**, with over 7,500 personnel deployed in Cyprus, Congo, Haiti, Lebanon, the Middle East, South Sudan and Western Sahara, helping save lives, protect people and setting the stage for a lasting peace.
- India has **lost the highest number of its peacekeepers** in various UN peacekeeping operations in the last 70 years, with 168 military, police and civilian personnel from the country laying down their lives in the line of duty.
- India has a long **tradition of sending women on UN peacekeeping missions**. E.g. In 2007, India became the first country to deploy an all-women contingent to a UN peacekeeping mission.
- India's Specific Contributions-
 - In Eritrea, Indian engineers helped to **rehabilitate roads** as part of the UN Mission in Ethiopia and Eritrea (UNMEE).
 - **Indian doctors provide medical care** to the local population in missions around the world.
 - Peacekeepers have also brought the **ancient Indian practice of yoga** to UN missions.

2.4. NATO

Why in news?

North Atlantic Treaty Organization (NATO) summit was recently held in London which also marked its 70th anniversary.

About NATO

- NATO is an **intergovernmental military alliance**, between **29** North American and European countries.
- It was formed in 1949, during cold war to defend member nations from threats by communist countries. Also, The United States wanted to maintain its presence in Europe.
- NATO's purpose is to **guarantee the freedom and security of its members** through political and military means.
- If the stability is threatened, NATO would **also defend non-members**. E.g. Though Ukraine is not a member, it had worked with NATO over the years.
- NATO is based on principle of **collective defence**. i.e. NATO's Article 5 states, "an armed attack upon one... shall be considered an attack upon them all."

Current challenges facing NATO

- **Finances to NATO:** Traditionally US is the largest contributor to NATO (22% of NATO's common budget) and has biggest defence budget among members (3.6% of its GDP). Trump's criticism is that other members are not contributing to NATO. At present, among major countries, only the U.K. spends 2% of its GDP on defence. France is at 1.8% and Germany at 1.2%.
- **USA's unilateralism:** US's unilateral decision to withdraw U.S. troops from Syria, gave another NATO member, Turkey, the license to undertake military operations in Syria. This, coupled with '**America First**' policy, **the U.S.'s commitment to NATO is undergoing a change**.
- **Relationship with Russia:** There is divergence of interests over resetting ties with Russia. A possible rapprochement with Russia in the light of changing geo-political realities makes Poland, Czech Republic and the Baltic countries nervous.
- The **democratic backsliding** that's occurring within NATO member states. E.g. Hungary openly claims to represent an '**illiberal democracy**'. Also, with the Russia's new closeness with Hungary and Turkey, the security implications of democratic decline, and distrust between allies will have implications on joint decisions, communications, and operations.
- **China factor:** China has now become a significant question mark for NATO on three levels: an expanding military posture in the Indo-Pacific and a more assertive presence in Africa and the Middle East; an economic and technological footprint that threatens Europe's own industrial and technological base; and a growing great power play between US and China, with Europe caught in the middle.

3. ECONOMY

3.1. NATIONAL INFRASTRUCTURE PIPELINE (NIP)

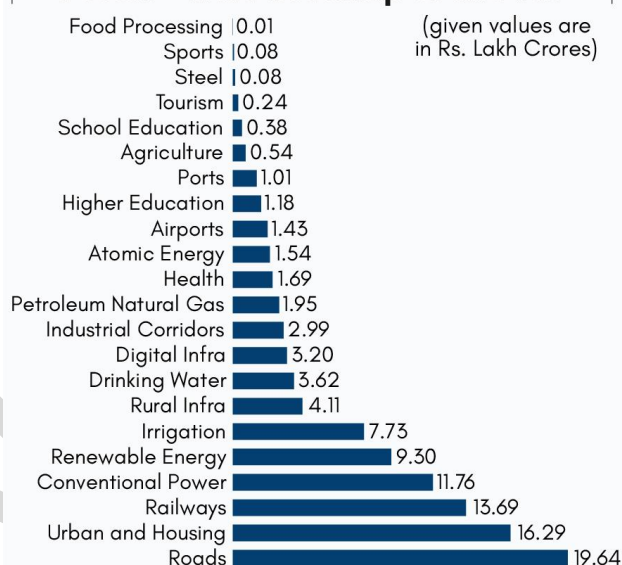
Why in News?

Government released a report titled **National Infrastructure Pipeline (NIP)**.

About NIP

- To achieve the GDP of **\$5 trillion by 2024-25**, India needs to spend about **\$1.4 trillion (Rs. 102 lakh crore)** over these years on infrastructure.
- National Infrastructure Pipeline (NIP) takes account projects to be implemented over the next five years **(2019-2025)** in 18 States.
- NIP includes both **economic and social infrastructure projects**. (see sector-wise breakup in picture)
 - Economic infra includes: Roads, energy, railways, shipping, steel etc.
 - Social infra includes: Education, health, sports etc.
- Expected yearly investments, share of funds from centre, states and private entities in these investments and status of projects in NIP has been shown in picture below.

Sector - wise breakup of the NIP



• Roads, urban & housing, railways, power (renewable & conventional) & irrigation to comprise ~80% of the NIP

Why NIP?

The report identifies **five specific reasons** why Indian infrastructure needs an overhaul.

- Increasing urbanization:** 42 per cent of population to live in urban areas in 2030 as opposed to 31 per cent now.
- Growing working-age population:** It is expected that the working-age population of India will grow ~1.2x times during 2015-2030. India is expected to have the world's largest working-age population of 1.03 billion (~68%) by 2030 compared with 0.97 billion in China and 0.22 billion in the US.
- Contribution of urban areas in total employment** will increase at a higher rate than the contribution of rural areas during the period 2018-30. The proportion of urban areas in total employment will increase from 29% in 2012 to 41% in 2030 while that of the rural areas will decrease from 71% in 2012 to 59% in 2030.
- Shift to services-based economy:** The trends in GDP and employment are reflective of India's economy gradually transitioning from an agrarian economy to a service centric economy.
- Climate change and disaster resilience:** There is a clear need for ensuring that all new and existing infrastructure systems are climate and disaster resilient.

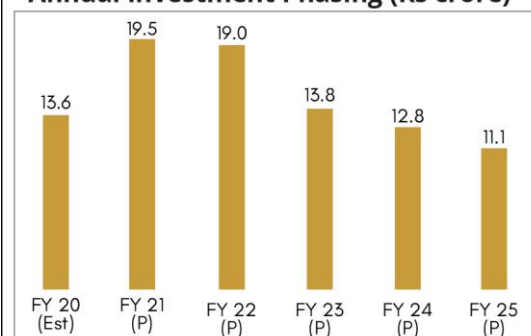
Benefits expected from NIP

- For Economy:** **Economic Survey 2018-19** argues that growth can be sustained by a **virtuous cycle approach** where investment is the key driver that **drives demand, creates capacity, increases labour productivity, improve ease of living, generates jobs** etc. NIP is prepared as a pipeline of projects based on viability and cost considerations to enable such investments.
- For Government:** Well-developed infrastructure improves revenue base of the government, and ensures that quality of expenditure is focused in productive areas.
- For Developers:** Make developers better prepared for project bidding, reduce aggressive bids/ failure in project delivery and enhanced access to sources of finance.
- For Banks/ financial institutions (FIs)/ investors:** Builds investor confidence as identified projects are likely to be better prepared, exposures less likely to suffer stress given active project monitoring, thereby less likelihood of NPAs.

Important reforms suggested in the report

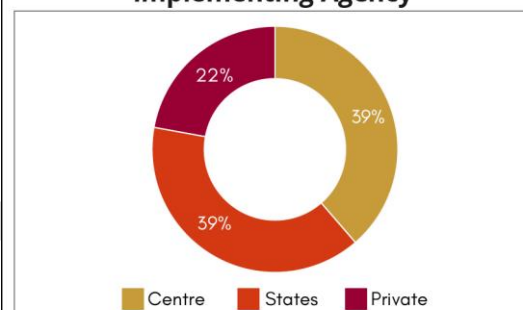
- **Improving project preparation processes** with transparent policy and legislative framework, presence of an empowered public institution for infrastructure planning, presence of guidelines, national standards, well-defined workflows etc.
- **Enhancing execution capacity of private sector participants:** Collaborations and joint-ventures with strong global infrastructure developers must be facilitated to build domestic capacity.
- **Robust enabling environment** to reduce delays and prevent financial stress. It includes:
 - There should be **optimal risk sharing** between the government and the private sector, to encourage private sector participation.
 - Adoption of **international contract standards** by all infrastructure departments and strict legal enforcement of contracts.
 - Adequate safeguards in case the project termination in the form of clearly quantified **termination payments** should be there.
- **Dispute resolution** through institutionalising dispute resolution mechanism to efficiently resolve disputes related to PPP projects. Investments must be made in the institutions created under The Commercial Courts Act 2015, The Specific Relief (Amendment) Act 2018 and the New Delhi Arbitration Centre Act 2019 to enable them to deliver sound results in enabling speedy resolution.
- **Strengthening infrastructure quality:** National Framework for Infrastructure Quality must be laid down in each sector within the next three months, based on global and national standards.
- **Promoting competition** to improve collaboration between Competition Commission of India (CCI) and sector regulators to ensure coordination and operationalisation of the National Competition Policy 2011 to establish uniform competition principles across different sectors.
- **Financial sector reforms:**
 - **Revitalising the bond and credit markets:** to ensure the financing for infrastructure projects does not suffer.
 - **Strengthening the municipal bond market in India:** to ensure effective participation of states.
 - **Revitalising asset monetization:** InvITs and REITs are promising but haven't taken off as yet in a big way.
 - **Enabling User charges to finance infrastructure.**
 - **Long-term financing landscape** by encouraging usage of innovative mechanisms such as loan securitisation, increased participation of Infrastructure Development Funds (IDFs), Development Finance Institutions (DFIs) etc.

Annual Investment Phasing (Rs crore)

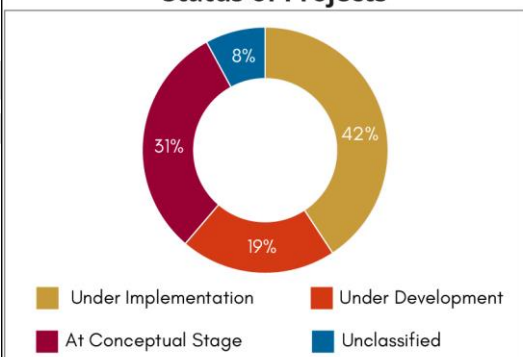


*Excludes the power sector and some states with phasing not provided

Implementing Agency



Status of Projects



*Power sector data has no classification provided

Concerns raised about the report

- **Lack of fiscal space:** In FY 2019, India's total infrastructure investments were about Rs. 10 lakh crores only. And given the challenges like high debt-to-GDP ratio, fiscal deficit and increasing twin balance sheet problem, it would be very tough to finance these projects.
- **Lending by banks:** Infrastructure financing is the cause of a major part of the bad loans in banks. So, banks would be apprehensive to finance such a large scale of investment.
- **Cooperation from States:** centre and the states have to work together to sort issues like **land acquisition and environmental clearances** which have imposed **huge time and cost delays** on several key projects nationally.
- **Lack of new projects:** About 42% of identified projects are already under implementation, 19% are under development.

3.2. INDIA'S DIGITAL FINANCE INFRASTRUCTURE

Why in news?

Recently, a Paper titled '**The design of digital financial infrastructure: lessons from India**' was released by the Bank for International Settlements (BIS).

Introduction

- Access to finance for individuals is critical for tapping the full potential of an economy. India has faced issue of financial inclusion of its population, due to factors like societal attitudes, legal frameworks and high transaction costs.
- Recent evidence from India highlight the **role of digital technologies** in overcoming these barriers and boost access to the banking and financial system.

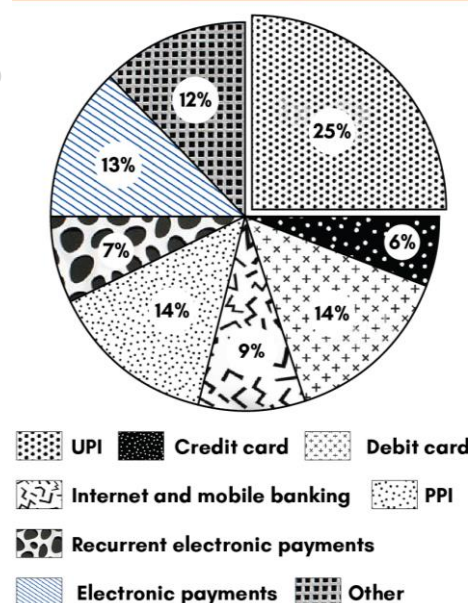
About Bank for International Settlements (BIS)

- Founded in 1930, BIS is an international financial organisation owned by 60 central banks, representing countries from around the world **including India**.
- **Mission:** to serve central banks in their pursuit of monetary and financial stability, to foster international cooperation in those areas and to act as a bank for central banks.
- It carries out its work through its meetings, programmes and through the Basel Process – hosting international groups pursuing global financial stability and facilitating their interaction.
- Its headquarter is in **Basel, Switzerland**.

Digital financial infrastructure: Challenges and solution

- **Financial Inclusion through identity-** Identification is **one of the key elements of financial inclusion**. Verifiable ID proofs makes it easy to open bank accounts, obtain credit and enroll in social welfare programmes.
 - India had low levels of formal identification (in 2008, only 1 in 25 people) and inclusion (1 in 4 Indian adults had a bank account).
 - **India addresses this problem with rollout of Aadhar Card.** Aadhaar has also served as the basis for other significant policy initiatives – most notably, the Pradhan Mantri Jan Dhan Yojana (PMJDY). By December 2019, almost 380 million bank accounts had been opened under PMJDY.
 - As per an estimate, without Aadhar it would have taken 47 years to achieve 80% of adults with a bank account had India solely relied on traditional growth processes.
- **Improving payment services within the formal financial system-** In the face of emerging competition, keeping consumers within the banking system after they have entered it is very challenging.
 - Costly payment transfers, processes that are cumbersome to navigate and slow to execute, and limited availability of transaction window etc are certain **deterrent**.
 - India addressed this challenge through **Unified Payments Interface (UPI)** which acts as a **single interoperable interface** to bank accounts effectively granting everyone mobile access to the payment system and allowing **instant financial transactions**, on demand, and **in fiat money** inside the formal financial system.
 - ✓ Recently the **Merchant Discount Rate (MDR) charges** has been removed on payment through UPI platforms. This will further lower the cost of transaction.
 - ✓ UPI has facilitated the large-scale adoption of digital retail payments in India, increasing from 65% in 2013-14 to 95% in 2018-19
- **Data empowerment with consent-** India is becoming data-rich with **increasing penetration of internet** connectivity and mobile phones. It is challenging to balance out **information asymmetries** and **lack of trust** on the part of customers while ensuring that stakeholders do not **misuse the data** of these consumers.
 - To address this challenge, in 2016 the **RBI established the legal framework** for a class of regulated data fiduciary entities, called **account aggregators**, which enable customer data to be shared within the regulated financial system **with the customer's knowledge and consent**.
 - ✓ Customer can restrict consent in terms of time and data categories, as well as revoke it at any time.

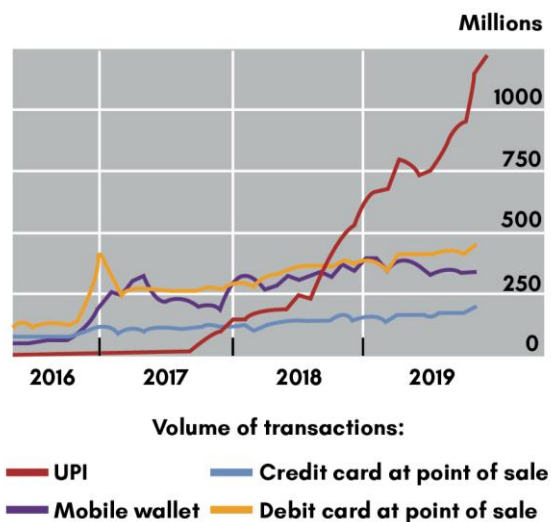
Share of digital payments by volume from April to Sept 2019¹



India's approach towards Digital Finance Infrastructure

From the above discussion it can be summarised that **India's approach is built upon four pillars:**

- **Providing digital financial infrastructure as a public good-** In the last decade, since the launch of Aadhaar programme, India has created several innovative digital platforms, built as public goods. Each platform, designed within the regulatory system, solves a single need such as identity, payments or data sharing.
- **Encouraging private innovation by providing open access to this infrastructure-** When these digital identities through various platforms connect different parties, it attracts private sector to innovate in fintech by supporting open, free and contestable markets in digital finance. E.g. Digital Payment segment for private sector such as **use of UPI platform by Paytm, PhonePe and OlaMoney.**
- **Creating a level playing field through the regulatory framework-** which has enabled a type of collaboration between the public and private sectors that harnesses the rapid force of private innovation while protecting the economy (and consumers) through the traditional issues of regulation. Thus, the central bank has partnered with the private sector in fostering technological innovations in the financial sphere.
- **Empowering individuals through a data-sharing framework that requires their consent-** so that they can be protected from data theft, hackers and state's intrusion into the private details of users.



Conclusion

India offers an example of how various policy reforms related to digital finance including transformation of the traditional banking system with the central bank playing a pivotal role can solve many of the challenges of inclusive financial development that once seemed out of reach.

3.3. INDIA SKILLS REPORT 2020

Why in news?

Recently, the 7th edition of India Skills Report 2020 was released.

About the India Skills Report

- It is a joint initiative of Wheebox (a global talent-assessment company), People Strong and Confederation of Indian Industry (CII) in collaboration with UNDP, AICTE and Association of Indian Universities.
- India Skills Report 2020 aims to provide an overview of the supply of talent and the demand from industry.
- The report brings together the readiness of our present talent pool for new-age jobs or job types and the skills that employers are today seeking in prospective employees.

Skilling in India: Status

- According to NSSO Report 2011-12, India's **formally trained workforce stand at merely 2.3%** in comparison to economies like South Korea which are at a mammoth share of 96%.

Key Findings of India Skills Report

- **Employability of India's youth has remained stagnant** for the past three years, lingering at 46.21% of participants who are job-ready.
- **Female employability witnessed an upward trend** at 47% while that of male workforce declined from 47.39% in 2019 to 46% this year. This reflects the opportunity for the industries to leverage female resource pool.
 - However, Hiring Intent Survey for 2020 reflects a likely hiring ratio of 71:29 for Male to Female candidates.
- It also indicated the **rising share of gig workers** in the economy at 13% share in the overall hiring intent by employment type.
- **Top 5 skills that Employers emphasize on** are domain knowledge, adaptability to the environment, learning agility and positive attitude and interpersonal skills.
- Only 60% of students were aware of the National Apprenticeship Promotion Scheme (NAPS).
- About 50% of employers acknowledge the role of government initiated programmes in recruitments, of which almost 9 in 10 employers admit that candidates meet their requirements.

- According to **Periodic Labour Force Survey (PLFS) 2017-18**, only 1.8% of the population reported receiving formal vocational/technical training. 5.6% reported receiving informal vocational training (such as hereditary, self-learning, and on the job training).
 - The bulk of the trainees were in the fields of electronics, IT/ ITeS sector, apparels, and mechanical engineering.
 - Moreover, around 33% of the formally trained youth was unemployed in 2017-18. Nearly a third of trained young men and more than a third of trained young women were unemployed.

Skill Development Initiatives

- Keeping in view the predominance of young population, the Government had formulated the **National Policy on Skill Development & Entrepreneurship, 2015** under which the **Skill India Mission by 2022** was formulated.
- The government had launched a comprehensive skill development programme in the last five years with the setting up of a Ministry for Skill Development & Entrepreneurship. Some of the major skill development programmes are listed in Table.

Initiatives	Objectives	Achievements
Pradhan Mantri Kaushal Vikas Yojana (PMKVY) (1.0), 2015	Mobilize youth to take up industry relevant skill training. Targets to train 1 crore youth by 2020. Recognizes and certifies prior learning	During 2015-16, 19.8 lakh youth were trained as against the target of 24 lakh.
Pradhan Mantri Kaushal Vikas Yojana (2.0), 2016-20	PMKVY version 2 has mandatory provisions for placement tracking .	Short term training: 30 lakh candidates enrolled, 27.9 lakh trained, 12.05 lakhs placed. Placement percentage: 54%. Recognition of Prior Learning: 22.65 lakh enrolled, 22.08 lakh trained, and 17.84 lakh assessed out of which 16.60 lakh passed as on May 2019.
Pradhan Mantri Kaushal Kendra (PMMK), 2015	Aspirational Model Training Centers to be opened in every district.	Till June 2019, 851 PMKKs have been allocated, 601 PMKKs have already been established.
National Apprenticeship Promotion Scheme, 2016	To promote apprenticeship. Consists of Basic Training and On-the-Job Training/ Practical Training at workplace.	Till June 2019, 11.87 lakhs candidate registered. 76,860 establishments registered under the scheme.
SANKALP, 2017	Creating convergence among all skill training activities, improving quality of skill development programmes, creating industry led and demand driven skill training capacity.	As on December 2018, the process of disbursements of funds to States/ UTs is underway. Regional workshops with States/ UTs are also being held to facilitate roll out.
STRIVE, 2017	Creating awareness through industry clusters, integrating and enhancing delivery quality of ITIs.	As on December 2018, the operations manual of the project has been prepared.

3.4. FUTURE SKILLS PRIME

Why in News?

Ministry of Electronics and IT along with NASSCOM, have approved the expansion of the Future Skills initiative - Future Skills PRIME (Programme for Reskilling/Up-skilling of IT Manpower for Employability).

Background

- In February 2018, **Future Skills Initiative** was announced at Hyderabad to reskill the IT industry workforce in emerging technologies and job roles.
- The Future Skills platform currently offers reskilling/ upskilling in 10 emerging technologies like Artificial Intelligence, Cyber Security, Blockchain, etc. across 70 new job roles and 155 new skills.
- Now, Future Skills initiative is extended as PRIME to industry professionals across different segments, higher education students and government officials, with the goal to train 4 lakh professionals in next three years.
- Through this new initiative, Government aims to create **India Digital Talent Stack** that will propel India into a leadership position in the digital world.

Salient Features of Future Skills PRIME

- Jointly rolled out by **Ministry of Electronics and IT along with NASSCOM, it will-**
 - offer **diagnostics for learner preference** and **skill gaps** leading to identification of relevant courses.
 - help in **building digital fluencies** in emerging technologies.
 - offer **online upskilling** in identified skill competencies.
 - offer blended programmes** with online and classroom trainings.
 - enable **assessment and certification of learners** in line with industry needs and Government standards.
- In addition to these each learner will-
 - get a **Skills Passport** where competencies acquired by the learner will get accumulated.
 - get a **Skills Wallet** where he/she will have the opportunity to get upto Rs. 12,000 from the Government of India as an incentive upon certification.
- This digital platform is being developed in strong partnership with the IT Industry, academia and government. Apart from industry, the existing infrastructure of CDAC and NIELIT centers will also be leveraged as **resource centers in hub and spoke model**.
- The data center for this digital platform will be kept in India.

3.5. MEGA FOOD PARKS

Why in news?

- Recently, Avantee mega Food Park in Dewas (Madhya Pradesh) was inaugurated. This is the first food park of central India.
- Government has come up with **Draft National Food Processing Policy in 2019** to boost the food processing industry.

Introduction

- A well-developed food processing sector with higher level of processing helps in the reduction of wastage, improves value addition, promotes crop diversification, ensures better return to the farmers, promotes employment as well as increases export earnings.
- This sector is also capable of addressing critical issues of food security, food inflation and providing wholesome, nutritious food to the masses.
- Major challenges** and the **potential for development** of the food processing sector in India is **depicted in the infographic**.

Status of Food Processing Sector

- The sector constituted nearly 8.83% and 10.66% of Gross Value Added (GVA) in Manufacturing and Agriculture sector respectively in 2017-18 at 2011-12 prices.
- Nearly **7 million persons** are engaged in this sector.
- The **value of processed food exports** in 2018-19 was \$35.30 Billion accounting for about 10.69% of India's total exports.
- The **annual value of harvest and post-harvest losses** of major agricultural produces at national level was at Rs.92,651 crore calculated using production data of 2012-13 at 2014 wholDAle prices.

Major Challenges in food processing industry



Growth Potential of food processing industry

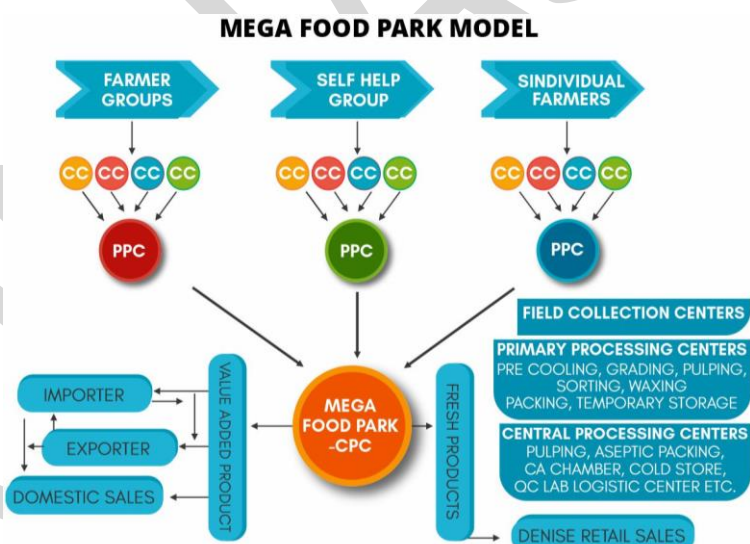


These constraints are sought to be addressed through Central Sector umbrella scheme of **Pradhan Mantri Kisan Sampada Yojana (PMKSY)** of Ministry of Food Processing Industries (MoFPI). **One of its components is the Mega Food Parks.**

Mega Food Parks (MFP):

- Introduced in 2008, the scheme aims at providing modern food processing infrastructure along the integrated value chain from farm to market with a **cluster-based approach**.
- It operates in **"hub and spoke model"** comprising Collection Centres (CCs) and Primary Processing Centres (PPCs) as spokes and a Central Processing Centre (CPC) as hub.
 - It includes creation of infrastructure for primary processing and storage near the farm in the form of PPCs and CCs and common facilities and enabling infrastructure like roads, electricity, water etc. at CPC.
 - These PPCs and CCs act as **aggregation and storage points** to feed raw material to the processing units located in CPC.
- These are **demand-driven projects** and facilitate food processing units to meet environmental, safety and social standards.
- MoFPI does not establish MFPs on its own** but assist Special Purpose Vehicle (SPV) registered under the Companies Act and State Government/State Government entities/Cooperatives to establish MFPs.
- Financial assistance** is provided as grant-in-aid @ 50% of eligible project cost in general areas and @ 75% in NE Region and difficult areas [Hilly States and Integrated Tribal Development Project (ITDP) areas] subject to a maximum of Rs. 50 crore per project.

- PMKSY** is a comprehensive package resulting in creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet.
- The allocation under PMKSY is **Rs.6,000 crore for the period 2016-20** coterminous with the 14th Finance Commission cycle.
- Seven schemes are implemented under PMKSY:** Mega Food Parks; Integrated Cold Chain and Value Addition Infrastructure; Creation/Expansion of Food Processing & Preservation Capacities (Unit Scheme); Infrastructure for Agro-Processing Clusters; Creation of Backward and Forward Linkages; Food Safety and Quality Assurance Infrastructure; Human Resources and Institutions.
- The MoFPI is also implementing central sector scheme **"Operation Greens"** as a vertical of PMKSY since November 2018.



Significance of MFP Scheme

- The scheme intends to facilitate **establishment of an integrated value chain**, with food processing at the core and supported by requisite forward and backward linkages.
- The scheme aims to bring together farmers, processors and retailers and link agricultural production to the market to ensure maximization of value addition, minimization of wastages and improving farmers' income.

Progress achieved under MFP scheme:

- Government has so far approved 42 Mega Food Parks. However, only 18 MFPs have been operationalized.
- Modern processing and preservation capacity of 23.02 Lakh MT & 63 PPCs with farm level infrastructure of 2.45 Lakh MT have been created so far in operational parks.

Challenges of Mega Food Parks

- The units in the **MFP cannot own land** and, therefore, they cannot use the land as collateral to take loans from banks.
- Delay in statutory clearances** from State Government/Agencies.
- There are also problems of change in Detailed Project Report during implementation of the project, delay on the part of promoters to contribute their equity, change in promoters midway.

- The approach of the scheme is basically **'one-size-fit-all'** and the scheme has not been able to attract investors with different investment requirements.
- The SPVs complaints that **skill levels of workers are poor and skilled workforce is not cheap.**
- The **timeline of 30 months to make the park operational** is too tight and it does not take into account the contingencies.
- The **awareness** of the scheme is **low.**

Way Forward

Government has come up with **Draft National Food Processing Policy, 2019** to boost the food processing industry. It will boost the MFP scheme through following enabling provisions-

- It suggests a **review of the scheme parameters** with a view to ensure flexibility in terms of the requirement of different clusters and continue to extend financial assistance on need basis.
- The Policy envisages **enhanced role of States** in development of food parks, where the state government would-
 - **allot land, on priority basis**, to such parks to promote agri & food processing industry apart from **support setting up of such parks** in their respective states from their own resources.
 - extend **incentives** viz. capital investment subsidy, stamp duty exemption, conversion charges to food parks and the units set up in such parks, under their respective policy.
 - identify crop production and processing clusters **using space technology and other IT tools** and provide end to end value chain solution and backward and forward linkages.
- **Mega Projects**, as defined by Centre and the states governments, **would be supported in fast track mode** and will receive priority in the allotment of land, sheds in industrial parks, electricity, water connection, environmental clearances etc.
 - **Special incentive package** will be provided by the central and state governments to promote such projects which will support development of a cluster of smaller units around it.
- The Policy seeks to promote establishment of **"Specialized Agro Processing Financial Institutions" (SAPFI)** for the food processing sector through appropriate incentives. This will ensure easier access to credit to MFPs.
 - Cold chain and Food Parks have been **declared as infrastructure** to ensure greater flow of funds to the sector on easier terms. However, Given the nature of the industry,

3.6. FOOD GRAIN STORAGE IN INDIA

Why in news?

Recently, **National Agricultural Cooperative Marketing Federation of India (NAFED)**, wasted over half of its onion buffer stock due to poor storage, at a time when government is importing tonnes of onion to keep prices at check.

Background

- As per the report of Central Institute of Post-Harvest Engineering and Technology (CIPHET), **the annual harvest and post-harvest losses of major food grains ranges from 4.65 to 5.99% of total production.**
 - Post-harvest losses occur due to **unscientific storage, insects, rodents, micro-organisms etc.**
- According to World Bank Report (1999), **post-harvest losses in India amount to 12 to 16 million metric tons of food grains each year**, an amount that the World Bank stipulates could feed one-third of India's poor.
- On an average, Indian farmers incur Rs 92,651 crore per year in post-harvest losses, the primary **causes of which are poor storage and transportation facilities.**

National Agricultural Cooperative Marketing Federation of India (NAFED)

- It is registered under the Multi State Co-operative Societies Act with the objective to **promote Co-operative marketing of agricultural produce** to benefit the farmers.
- It was founded to promote the trade of agricultural produce and forest resources across the nation.
- It is the nodal agency to **implement price stabilization measures** under "Operation Greens."
- NAFED along with FCI with proactive role of state governments also physically procures oilseeds, pulses and copra **under the Price Support Scheme (PSS)** which in turn is under the umbrella scheme of PM-AASHA.

- Also, according to the Ashok Dalwai committee report, **an investment of Rs 89,375 crore—a figure marginally lower than the annual post-harvest losses**—is all it takes to improve the state of storage and transportation facilities for food crops.
- **The current food grain storage capacity** in the country is **88 million tonnes (MT)** (covered – 75 MT lakh tonnes and Covered Area Plinth (CAP) – 13 MT) with FCI and State agencies.

Food Grain Storage and Management in India

- FCI is the nodal agency under Ministry of Consumer Affairs, Food and Public Distribution **responsible for the procurement, storage and movement of food grains, public distribution and maintenance of buffer stocks.**
 - Storage plan of FCI is primarily **to meet the storage requirement for holding stocks to meet the requirements of Public Distribution System and Other Welfare Schemes** undertaken by the central government.
 - **FCI procures food grains at minimum support price (MSP) from farmers** on an open ended basis (i.e., accepting all the grains that are sold to it by farmers), provided the food grains meet central government's uniform quality specifications.
 - The procurement is **also done by State Government Agencies (SGAs)** and private rice millers on behalf of the FCI.
 - All the procured food grains form the Central Pool.
 - The grains are moved from the surplus states to the consuming states for distribution and for creation of buffer stocks and stored in FCI godowns for **ensuring food security of the nation.**
 - The food grains are also disposed by FCI and State Governments through sale under **Open Market Sales Scheme (OMSS)** i.e., selling food grains at predetermined prices in the open market from time to time to enhance the supply of grains especially during the lean season and thereby to moderate the open market prices especially in the deficit regions.
 - **The economic cost to FCI** includes acquisition cost of food grains at MSP, procurement incidentals (e.g. labour & transport charges, godown rentals) and distribution cost (freight, handling, storage & interest charges, losses during storage etc).
 - **Difference between Economic Cost and Central Issue Price (CIP)** of food grains under various schemes (including National Food Security Act, 2013) is the operational loss to FCI and is reimbursed by Government of India as food subsidy.
- In India, food grains are stored using traditional structures by small farmers. The surplus grains are stored with government agencies like: **Food Corporation of India (FCI), Central and State warehousing Corporations.**

Significance of storage

- The storage of goods, from the time of production to the time of consumption, **ensures a continuous flow of goods in the market.**
- **Protects the quality of perishable and semi-perishable products** from deterioration.
- Helps in **the stabilization of prices** by adjusting demand and supply;
- **Provides employment and income** through price advantages.
- **Enables farmers to precondition, transport and store their produce,** of their own volition, in safe and secure manner to markets of choice and at a time of choice.

Types of Storage in India

- **Underground Storage Structures:** These are dugout structures similar to a well with sides plastered with cowdung. These are safer from threats from various external sources of damage, such as theft, rain or wind.
- **Surface storage structures:** Bag storage and Bulk or loose storage.
- **For large scale storage:**
 - **CAP Storage (Cover and Plinth):** It is commonly used storage method which is economical but loss of grains is inevitable (vulnerable to wind damage). It is temporary storage method of storing crops in outdoor stacks of bagged grain, covered with a waterproof material.
 - **Silos:** In these structures, the grains in bulk are unloaded on the conveyor belts and, through mechanical operations, are carried to the storage structure. The storage capacity of each of these silos is around 25,000 tonnes.
- **Warehousing:** These are scientific storage structures especially constructed for the protection of the quantity and quality of stored products. Ex: Central warehousing corporation (CWC), State Warehousing Corporations (SWCs), Food corporation of India (FCI).

Issues with Storage in India

- **Improper storage management:** Often the stock stored in the warehouses remain in storage for more than its shelf life and such long storage, makes grains prone to rodents, moisture, birds and pests.

- The **utilization of existing storage capacity** in various states/UTs remains less than 75% in majority of the months. Due to this, the storage space cannot be utilized for fresh arrivals of the ensuing season.
- **Unscientific storage:** About 80% handling and warehousing facilities are not mechanized and traditional manual methods for loading, unloading and handling of food grains and other commodities are used.
 - During procurement season, much of these stock gets damaged because of **seepage of water** from the ground in the absence of proper plinth or height of ground or due to floods and rains.
- **Gap in storage capacity with FCI:** With the increasing food grains stock in the central pool held by FCI, the storage gap with FCI has shown an increasing trend in recent years.
 - The FC has insufficient number of grain silos and covered godowns with adequate storage capacities.
 - Also, the existing cold storage capacity is not integrated with other requirements. There is lack of supporting infrastructure such as integrated pack-houses, reefer trucks, ripening units etc.
 - Therefore, an overall gap of about 84-99 % in achieving the target on improving the state of storage and transportation of the farm produce.
- **Issues with cold storage:** India's cold storage capacity is unorganized and dominated by traditional cold storage facilities.
 - The distribution of cold storages is highly uneven with majority of the cold storages located in Uttar Pradesh, Gujarat, Punjab and Maharashtra. Further nearly two thirds of the **total cold storage capacity is used for potatoes only**.

Storage management: What the Government is doing?

- **Private Entrepreneurs Guarantee (PEG) Scheme** formulated in 2008 in which storage capacity is created by private parties, CWC and State Government Agencies for guaranteed hiring by FCI. After a godown is constructed and taken over by FCI, storage charges are paid to the investor for a guaranteed period of 9/10 years irrespective of the quantum of foodgrains stored.
- **A central sector scheme** is being implemented in the North Eastern States along with Himachal Pradesh, Jharkhand and Kerala. Funds are released by Government to FCI and also directly to State Governments for construction of godowns.
- **Construction of Steel Silos:** In addition to conventional godowns, construction of steel silos has been undertaken in Public Private Partnership (PPP) mode for modernizing storage infrastructure and improving shelf life of stored foodgrains.
- **Government guidelines:**
 - Foodgrains in '**Cover and Plinth**' (CAP) storage are to be stored on elevated plinths and wooden crates are to be used as dunnage material.
 - Stacks are to be **properly covered** with specifically fabricated low-density black polythene water -proof covers and tied with nylon ropes/nets.
 - There is a **regular monitoring mechanism** under which inspections at all levels are carried out.
 - Only **covered rail wagons** are to be used for movement of foodgrains.
- Government is supporting the creation of well-equipped scientific storage facilities to the farmers in the country through the scheme of "**Agricultural Marketing Infrastructure (AMI)**".
 - So far, a total of 38,964 **storage infrastructure projects** (Godowns), with storage capacity of 655.48 Lakh MT have been sanctioned across the country under the scheme.
- **At the level of research,** the Department of Atomic Energy (DAE) & Bhabha Atomic Research Centre (BARC) is engaged in extensive research on use of radiation processing for extending shelf life of food products.
 - It has resulted in shelf life extension of potato, onion and phytosanitary treatments of fruits (like Mango, Pomegranate, etc.).

Recommendations of Ashok Dalwai Committee on Improving Storage in India

- **Promote integrated agri-logistics systems** so as to enable efficient transfer of value from farmgate to end-consumers. These enable monetisation of the transferred value at optimal prices and will enlarge the share of produce that reaches markets.
- **Preparing a district and state-wise storage plan** to ensure efficient spatial distribution and modern warehouses and silos must be the preferred option if new storage creation is decided upon.

About Negotiable Warehouse Receipts (NWR)

- NWR are issued by registered warehouses **enables farmers to seek loans from banks against NWRs**
- It enables them to extend the sales period of modestly perishable products beyond the harvesting season.
- Consequently, NWRs can avoid distress sale of agricultural produce by the farmers in the peak marketing season.

- **Upgrading existing dry warehousing infrastructure** to make them WDRA (Warehouse Development Regulation Authority) compliant and become eligible to issue eNWRs (electronic Negotiable Warehouse Receipts).
 - **Upgrading** the existing godowns and warehouses.
 - Developing comprehensive guidelines/procedures to promote large number of accreditations and enable farmers to access warehousing facility in close proximity of their farm gate.
- **Promotion of the system of warehousing and eNWRs:** Advocate and popularise these among all stakeholders, including bankers, the system of warehousing and eNWRs, which will help in using the facility of interest subvention based postharvest loans and **curb the distress sale practice** common among farmers.
- **Increase accreditation of cold storage:** In order to promote warehouse based post-harvest loans, in case of notified perishable commodities, it is necessary to substantively increase accreditation of cold storages in the country.
- **Building aggregation units at village level: Building aggregation units** (i.e. modern pack-houses and pooling points) at village level with transport links must be aggressively promoted.
 - **Promote self-help groups** (SHGs) of the gatherers and provide them with a well-appointed place (drying yard, storage, primary processing support etc.)

3.7. DIGITISATION OF LAND RECORDS

Why in news?

Recently, Ministry of Rural Development informed that about 90 per cent of villages in India have computerised the Records of Right (RoR) and about 53 per cent of survey maps showing boundaries and ownership of land have been digitised.

More on news

- **Telangana and Maharashtra top the list of states with 99% computerisation** of land records data followed by Andhra Pradesh at 98%.
- Along with **some States in the North East, Kerala at 43.24%** and **Jammu and Kashmir at 9.32%** are lagging behind in the computerisation of land records.

Land ownership in India

- **Land title** is a document that determines the ownership of land or an immovable property. Having a clear land title protects the rights of the title holder against other claims made by anyone else to the property.
- In India, **land ownership is determined through various records** such as sale deeds that are registered, property tax documents, government survey records, etc.
- However, **land titles in India are unclear** due to **various reasons** such as **legacy issues of the zamindari system, lack of unified legal framework** to implement policies between centre and state (land is a state subject) and **poor administration of land records**.
- This **has led to several legal disputes related to land ownership**, and affected the agriculture and real estate sectors and have highlighted the importance of having clear land titles, and a well organised digital land records system.

Advantages of land digitisation: An organised digital land record system can help in:

- **Reduction in litigations and burden of cases:** A NITI Aayog paper suggests that land disputes on average take about 20 years to be resolved. Land disputes add to the burden of the courts and impact sectors and projects that are dependent on these disputed land titles.
- **Promoting agricultural credit:** Land is often used as collateral for obtaining loans by farmers. It has been observed that disputed or unclear land titles inhibit supply of capital and credit for agriculture.
- **Development of new infrastructure:** The economy of the country is shifting from agrarian to manufacturing and services based. However, several new infrastructure projects are witnessing delays, with land related issues like non-updation of land records.
- **Urbanisation and housing:** Slum dwellers do not have access to a clear land title or ownership rights. Further, since such colonies are unauthorised it is difficult for the ULBs to provide basic services to them. Easier online approvals of plans and occupancy certificates will provide clarity over ownership status

- **To check benami transactions:** Unclear titles and non-updated land records enable carrying out property transactions in a non-transparent way. The Standing Committee on Finance in 2015 noted that generation of black money through benami transactions could be eliminated by digitisation of land records and their regular updation.
 - **Transparent and temper proof land records** help to weed out corruption and checks fraudulent property deals.

Government initiatives

- **Digital India Land Records Modernization Programme (DILRMP):** The main aims of DILRMP are to usher in a system of updated land records, automated and automatic mutation, integration between textual and spatial records, inter-connectivity between revenue and registration, to replace the present deeds registration.
 - The respective States/UTs would undertake the implementation of the programme with the financial and technical aid of the Department of Land Resources, under Ministry of Rural Development.
 - The unit of implementation will be the districts where all activities under the programme will converge.
- **Some state governments initiative to digitalise land records**
 - **Bhoomi project:** It was undertaken and developed by the State Government of Karnataka. It was done so in order to computerize all the records of the land in Karnataka.
 - **Bhudhaar:** This is an initiative of **by Andhra Pradesh**. Under this each land parcel will be given an 11-digit Bhudhaar number. It will help in easy identification of the details of the land parcel.
 - **Mahabhulekh:** It is initiative of Maharashtra government to issue digitally signed 7/12 and land record.

Conclusion

The land record computerisation and modernisation schemes have been in process for the last 30 years. However, The Ease of Doing Business report (2015) observed that the pace of modernisation of records and bringing them to an online platform has been slow. From 2008 till September 2017, 64% of the funds released under DILRMP have been utilised.

Some measures that could encourage and improve the computerisation of land records include:

- clarifying the policy and establishing clear criteria and accountability mechanisms for allocation of central funds on this;
- identifying and publicising best practices on technical and legal issues,
- promoting exchange and communication among technical staff across states;
- administrative changes at the state level that streamline the collection and maintenance of land data

3.8. DEDICATED FREIGHT CORRIDOR (DFC)

Why in News?

Indian Railways conducted a trial run on Rewari –Madar Section of Western Dedicated Freight Corridor (WDFC).

About DFC

- DFC is a high-speed and high-capacity railway corridor **dedicated exclusively for freight (goods and commodity) movement**.
- The project was first proposed in April 2005 to **address the needs of the rapidly developing Indian economy**.
- **In 2006**, the Government of India established a dedicated body, the **Dedicated Freight Corridor Corporation of India (DFCCIL)**, to develop two corridors- **Western Dedicated Freight Corridor (WDFC)** and **Eastern Dedicated Freight Corridor (EDFC)**.

About Dedicated Freight Corridor Corporation of India (DFCCIL)

- It is a Special Purpose Vehicle set up under the administrative control of Ministry of Railways **to undertake planning & development, mobilization of financial resources and construction, maintenance and operation of the DFCs**.
- It has been set up with 100% equity by Ministry of Railways and registered as a company under the Companies Act 1956.

Western Dedicated Freight Corridor (WDFC)

- WDFC connecting Dadri in UP to Mumbai-Jawaharlal Nehru Port (JNPT) will traverse through the states of UP, Haryana, Rajasthan, Gujarat and Maharashtra.

Eastern Dedicated Freight Corridor (EDFC)

- EDFC, starting from Dankuni in West Bengal will pass through the States of Jharkhand, Bihar, UP and Haryana to terminate at Ludhiana in Punjab.

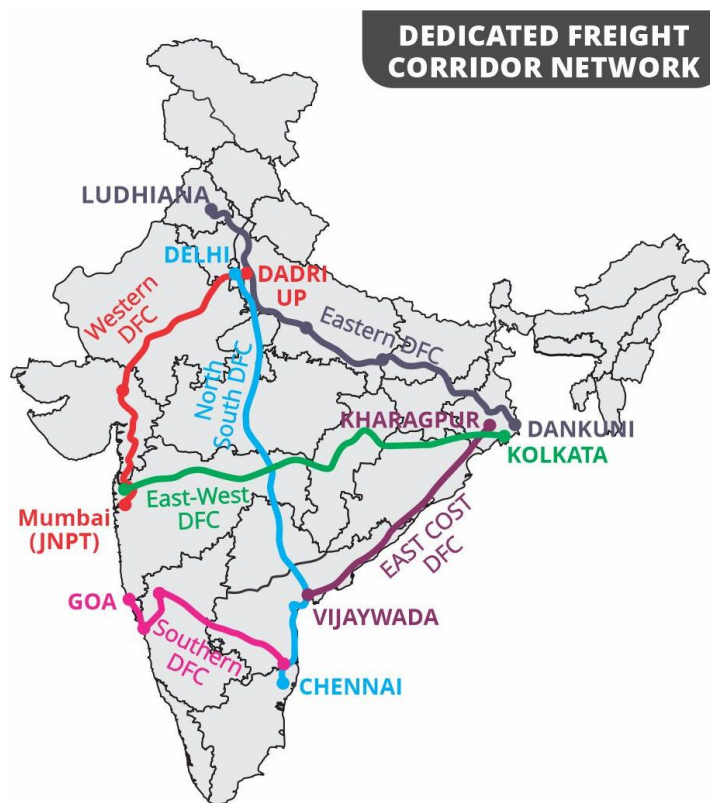
- **Four more Freight Corridors** were also announced in 2010.
 - East-West Corridor (Kolkata-Mumbai)
 - North-South Corridor (Delhi-Chennai)
 - East Coast Corridor (Kharagpur-Vijaywada)
 - Southern Corridor (Chennai-Goa)

Significance of DFC

- **Reduce unit cost of transportation** by speeding up freight train operations & higher productivity:
 - DFC can allow **train speed to a maximum of 100 kmph** from the current average speed of around 25kmph.
 - It will allow a **time-tabled freight services** for movement of the cargo to the gateway ports with guaranteed transit time. This would enhance international connectivity from India.
- **Improving Carrying Capacity:** By adopting state-of-the-art technology, DFC will make significant improvement in basic design features (More height, width, container stack etc.) that will enable it to withstand heavier loads at higher speeds.
 - The current axle load of wagons is 22.9MT which for the DFC would be enhanced to 32.5 MT. The enhancement would cater to the transportation requirement for the next 50 years.
- **Increase rail share in freight market:** by providing customized logistic services. It will also introduce of high-end technology & IT packing of Freight Services.
 - There will be segregated freight infrastructure for focused approach on both passenger and freight business of Railways.
- **Decongestion of traffic:** The golden quadrilateral which is just 16% of rail network carries 58% of total freight traffic.
 - **Golden Quadrilateral** is a national highway network connecting most of the major industrial, agricultural and cultural centres of India.
- **New Economic Activity:** It will facilitate fresh industrial activity and multi-modal value-addition services hubs along the corridors. For example:
 - **EDFC benefit will include coal for power plants in the northern region** from coalfields in Bihar, Jharkhand and Bengal.
- **Reduction in Pollution:** As per a 30 year greenhouse gas (GHS) emission forecast, if there were no dedicated freight corridors, the GHG emissions would be 582 million ton CO₂, while the emissions with the two DFCs in service would be less than one-fourth at 124.5 million ton CO₂.
 - Also, the goods moved by road had 3 times the emission rate in comparison to the corresponding movement by rail.

Challenges faced

- **Issue of Land Acquisition:** Due to route alignment, the railways have to acquire large swathes of private land that are already developed, making the construction of the corridor difficult. The ministry is also required to pay market price for any land acquisition, further compounding to financial problem.
- **Concern over technology:** While the railways want to run double-stacked containers in the Delhi-Mumbai corridor on diesel locomotives, Japanese International Cooperation Agency (JICA), which has financed the project, has suggested electric ones, saying it is more environment-friendly.
 - With an **inclination towards using renewable resources in future**, viability of the corridor could be a concern since the majority of the traffic was expected to be coal for power plants in northern India from the coal fields in the east.



- **Double stack vs single stack:** The project has adopted different technical standards for WDFC and EDFC. WDFC would have moving dimensions made for double stacked containers and moving dimensions for EDFC are being made for single stack container operations.
 - This makes **seamless movement of double stack trains from WDFC to EDFC impossible**.
 - **Double-stack rail transport** is a form of intermodal freight transport where railroad cars carry two layers of intermodal containers.
- **Slow progress:** The progress for both Logistics Parks and Delhi Mumbai Industrial Corridor has been very slow which will have an impact on overall objective of project.

Way Forward

- **New and modern technologies and practices** need to be adopted. For example, in order to leverage the full efficiency of the DFC, need for a locomotive that can take **advantage of the increased axle loading capability**.
- Another important step could be to **allow private participation**, along with Indian Railways in bringing end users.
- **Clear policies** which can integrate and fasten up the process of land acquisition need to be developed.

3.9. RAILWAY RESTRUCTURING

Why in news?

Recently, Union Cabinet approved organisational restructuring of the Indian Railways (IR).

Background

- Presently, the management and administration of Railways is governed by a pool of **Group A officers**, drawn from **Indian Engineering Services** (such as Indian Railway Service of Engineers etc.) and the **Civil Services** (such as Indian Railway Traffic Service etc.) in eight technical and non-technical cadres respectively.
- Restructuring of the Railways has been on the agenda for decades, as unification of services has been recommended by various committees including:
 - Prakash Tandon Committee (1994),
 - Rakesh Mohan Committee (2001),
 - Sam Pitroda Committee (2012)
 - Bibek Debroy Committee (2015).

About Railway Board

- It is the **apex decision-making body** of Indian Railways which reports to the Parliament via the ministry of railways.
- It is organised into various departments like **mechanical, electrical, traffic and finance** that are vertically separated from the top to bottom.
- A member of the board, usually a secretary rank officer, heads each department.

Railway restructuring: The approved reforms

- **Creation of Indian Railway Management Service (IRMS):** A unified central service by the **unification of the existing eight Group A services** of the Railways in consultation with **Department of Personnel and Training and UPSC** to facilitate recruitment and enable Railways to recruit engineers/non-engineers as per need.
- **Re-organisation of Railway Board:** Railway board will no longer be organised on departmental lines, and replaced with a leaner structure organised on **functional lines**.
 - The board will have a Chairman, who will act as 'Chief Executive Officer (CEO)' along with 4 Members responsible for **Infrastructure, Operations & Business Development, Rolling Stock and Finance respectively**.
 - The Board will also have some **independent members**, who will be highly distinguished professionals with deep knowledge and 30 years of experience including at the top levels in industry, finance, economics and management fields to help Railway Board in setting **a strategic direction**.
- The existing service of Indian Railway Medical Service (IRMS) to be consequently renamed as **Indian Railway Health Service (IRHS)**.

Need for restructuring

- **To curb departmentalism and bring more efficiency, accountability and cohesion:** Railway departments are currently working "in silos", which manifests itself in the form of unhealthy competition among departments as well as pursuing narrow departmental goals at the cost of organisational goals and objectives; and

- Unification of services will end this '**departmentalism**', promote smooth working, **expedite decision making**, and create a **coherent vision** for organisation.
- **For Better personnel management:** Officers from a particular service are likely to grow only within their respective departments, except some general roles such as divisional railway manager (DRM), and general manager (GM).
 - Providing three different entries in the organisation **created the distinct problem of fixing seniority among all services**, each having a different (and not fixed) date of entry every year.
- **Modernising the railway:** Govt has set a vision of making railways a 100% safe, fast and reliable mode of transport for passengers and freight. The plan is to modernise the entire network by investing around Rs 50 lakh crore by 2030.
 - This requires speed and scale, and a unified, agile organisation to work single-mindedly on this task and capable of responding to challenges.

Issues raised with respect to restructuring

- Merger of services decision is said to be unscientific and against established norms, because it proposes to **merge two fundamentally dissimilar entities**, with multiple disparities i.e. between IAS and IES.
- The decision that posts of some the general managers from the various departments would be raised to the “apex” level and hence at par with the board members is problematic.
- Even after the merging of cadres, departments will continue to exist, and it would be the executive’s job to settle the disputes at the end of the day.
 - Thus, it should be understood that the problem is not departments but the composition of the same, and their role in the Railway organisation.

Bibek Debroy recommendation on Indian Railways and corresponding steps

Bibek Debroy recommendation	Steps Taken since 2014
Allow private entry in running of private trains.	Efforts towards this have started with Tejas express being run by IRCTC.
Change the composition of the Railway Board.	has been recently announced, with the Board functionally pruned.
Decentralise decision-making to zones/divisions and even further below.	has been done
Separate the core functions of running trains from non-core functions like schools and medical services.	is being implemented at the zonal level
Set up a regulator.	Not done
Unify various railway services.	Recently proposed
Transit to commercial accounting	has been completed at zonal level
Unite the Railway Budget with the Union Budget.	has been done.

3.10. IMF SUGGESTS POLICY ACTIONS TO COMBAT SLOWDOWN

Why in News?

Recently IMF noted that India is now in the midst of a “significant economic slowdown” and suggested urgent policy actions to address it.

More about the news

- According to the **first advanced estimates of National Income, 2019-20**, released by National Statistical Office (NSO), economic growth was just **5% for the whole year**.
- In the same period estimated **nominal GDP growth** is just 7.5% (sector-wise growth estimates are shown in picture).
- Growth in the second quarter of FY 2019-20 came in at a **six-year low of 4.5%** (on a year-on-year basis).
- In April-November 2019, gross tax revenue grew by a paltry 0.8 %.

Reasons identified by IMF for slow economic growth

- **Lingering weakness in some Non-Bank financial companies (NBFCs):** Following ILFS crisis last year, abrupt reduction in NBFC’s credit expansion took place, leading to the associated broad-based tightening of credit conditions.
- **Lesser consumption demand:** Weak income growth, especially rural, has been affecting private consumption.

- **Corporate and Environmental regulatory uncertainty:** Private investment has been hindered by the financial sector difficulties (including in the public sector banks (PSBs)) and insufficient business confidence.
- **Implementation issues with some structural reforms** like goods and services tax (GST).

Recommended policy measures by IMF

- **Financial sector:** these reforms are needed in the short term as per IMF, such as:
 - **Resolve balance sheet issues** including in the commercial banks, the corporate sector, and the NBFCs including housing finance companies.
 - More **information on smaller NBFCs** is needed to better understand the impact of reduced credit on private demand, especially micro, small, and medium-sized enterprises and in rural areas.
- **Fiscal policy** suggestions:
 - **In the short term**, focus on the composition of expenditures and rationalising GST.
 - **Over the medium-term**, focus on domestic revenue mobilisation like increasing personal income tax collections by ending exemptions, reducing the minimum threshold for taxpayers and by raising contributions by top earners, decreasing expenditures on subsidies, and enhancing fiscal transparency and thus reducing uncertainty.
- **Monetary policy** suggestions: **Cut the policy rate** further, especially if the economic slowdown continues.
- **Structural reforms:**
 - Measures to enhance the **efficiency of credit allocation** and **governance reforms in the banking sector** are urgently needed to strengthen confidence.
 - **Labour, land, and product-market reforms** aimed at enhancing competition and governance.
 - **Improvement in human capital** (education and health)

Related News

Former Prime Minister of India Manmohan Singh warned that India could be entering a stagflationary phase.

About Stagflation

- Inflation is the rate of rise in the general level of prices of a basket of selected goods and services in an economy over a period of time
- Usually **inflation** occurs when economy is growing because people are earning more that leads to more demand.
- Also, whenever the economy slows, inflation tends to dip as well as purchasing power gets eroded.
- Stagflation is a peculiar combination of **stagnant** growth and rising **inflation** leading to high unemployment.
 - Stagnation is a prolonged period of little or no growth (usually less than 2 to 3% annually) in an economy.

Indian situation

- Trends point towards a situation similar to stagflation.
 - Retail inflation in India touched 7.35% in December last year, the highest in five-and-a-half-years with food inflation surging to 14.12%.
 - According to the Index of Industrial Production (IIP) data, **18 of the 23 industry groups in the manufacturing sector showed negative growth.**

Why is stagflation dangerous?

In normal low growth situation, the government or the central bank can provide economic stimulus via higher public spending and cut interest rates. But in stagflation, when inflation is already running high, fiscal and monetary stimulus can make it worse as that puts more money in the hands of the consumer.

3.11. THE CODE ON SOCIAL SECURITY, 2019

Why in news?

Recently the code on social security, 2019 has been **tabled in Lok Sabha**. The Code has been referred to the Standing Committee.

Background

- The Second **National Commission on Labour (2002)** had recommended that the existing set of labour laws should be broadly amalgamated into the following groups, namely: (a) industrial relations; (b) wages; (c) social security; (d) safety; and (e) welfare and working conditions.
- In pursuance of the recommendations of the said Commission, the Code on Social Security seeks to consolidate laws relating to social security of workers and **subsume nine central labour** enactments: Employees' Compensation Act, 1923; Employees' State Insurance Act, 1948; Employees' Provident Funds and Miscellaneous Provisions Act, 1952; Employment Exchanges (Compulsory Notification of Vacancies) Act,

1959; Maternity Benefit Act, 1961; Payment of Gratuity Act, 1972; Cine Workers Welfare Fund Act, 1981; Building and Other Construction Workers Welfare Cess Act, 1996; and Unorganised Workers' Social Security Act, 2008.

- The amalgamation of the said laws will **facilitate the implementation** and **remove the multiplicity of definitions** and **authorities** without compromising the basic concepts of welfare and benefits to workers.

Provisions of the Code and their Significance

- **Social security schemes:** The Code proposes **universalisation of social security benefits**. Under the code-
 - The central government may notify **various social security schemes** for the benefit of workers. These include – an **Employees' Provident Fund (EPF) Scheme**, an **Employees' Pension Scheme (EPS)**, and an **Employees' Deposit Linked Insurance (EDLI) Scheme**.
 - The **government may also notify:**
 - ✓ **gratuity** to workers on completing five years of employment (or lesser than five years in certain cases such as death),
 - ✓ **maternity benefits** to women employees,
 - ✓ compensation to employees and their dependants in the case of **occupational injury or disease**.
 - In addition, the central or state government may notify specific **schemes for gig workers, platform workers, and unorganised workers** to provide various benefits, such as life and disability cover.
 - ✓ **Gig workers** refer to workers outside of the traditional employer-employee relationship (e.g., freelancers).
 - ✓ **Platform workers** are workers who access other organisations or individuals using online platforms and earn money by providing them with specific services.
- The code also provides an enabling **provision for constituting special purpose vehicles for the implementation of the schemes** for unorganised sector workers and **seeks to expand the sources of the fund** for various schemes under the Code to include **funds from corporate social responsibility**.
- It also provide for **payment of gratuity** in case of **fixed-term employment** on pro-rata basis even if the period for fixed term contract is less than five years. **Under the current Provisions**, an employee is entitled for gratuity only after completing five years of continuous service.
 - **Fixed-term employment** is a contract in which a company or an enterprise hires an employee **for a specific period of time**. In a fixed-term employment, the employee is **not on the payroll of the company**.
- The Code **empowers the central government** with an enabling provision to lower the mandatory monthly contribution towards **employees' provident fund (EPF)** for a certain class of employees for a certain period.
 - This will help **increase the take-home pay of workers** with relatively lower salaries and may boost consumption, which has been falling, dragging growth down.
- **Social security organisations:** The Code provides for the establishment of several bodies to administer the social security schemes. These include:
 - a **Central Board of Trustees**, headed by the Central Provident Fund Commissioner, to administer the EPF, EPS and EDLI Schemes,
 - an **Employees State Insurance Corporation**, headed by a Chairperson appointed by the central government, to administer the ESI Scheme,
 - national and state-level **Social Security Boards**, headed by the central and state Ministers for Labour and Employment, respectively, to administer schemes for unorganised workers.
- **Provision for inspections and appeals:**
 - The appropriate government may **appoint Inspector-cum-facilitators to inspect establishments** covered by the Code and advise employers and employees on compliance with the Code.
 - **Administrative authorities** may be appointed under the various schemes **to hear appeals** under the Code. For instance, the appropriate government may notify an appellate authority to hear appeals against the order of the Inspector-cum-facilitator for non-payment of maternity benefits.
 - The Code also **specifies judicial bodies** which may **hear appeals from the orders of the administrative authorities**. For example, industrial tribunals (constituted under the Industrial Disputes Act, 1947) will hear disputes under the EPF Scheme.

- **Provision for offences and penalties:** The Code specifies **penalties for various offences**, such as:
 - The **failure by an employer to pay contributions** under the Code after deducting the employee's share, **punishable with imprisonment** between one and three years, and **fine of one lakh rupees**, and
 - **Falsification of reports**, punishable with imprisonment of up to six months.
- The Code will make **Aadhaar mandatory for seeding at the time of registration of member or beneficiary or any other person** to register or for receiving benefits.

Concerns

- **Lack of its universal character**, since the existing thresholds for applicability of provident fund, employee state insurance, gratuity, maternity benefits have not been removed.
- Code provides enough room for change in many substantive provisions of the Code be made through executive decisions by **bypassing the Parliament** and other stakeholders. There are as many as 128 instances of terms "as may be prescribed" or "maybe framed" in the Code.
 - For example, the provision to provide social security to unorganised sector workers leaves it to the government to formulate and notify suitable welfare scheme.
- The **provision of production of Aadhaar** for the purpose of availing benefits under the Code may be challenged by employees. This is in view of the judgment of the Supreme Court in **KS Puttaswamy case**, wherein it was held that **Section 7 (proof of Aadhaar number necessary for receipt of certain subsidies, benefits and services) of the Aadhaar Act, 2016 cannot be applied** to benefits earned by an employee on account of his / her services.

3.12. INDEPENDENT DIRECTOR'S DATABANK

Why in news?

Recently, the **Ministry of Corporate Affairs (MCA)**, launched the **Independent Director's Databank** in accordance with the provisions of the Companies Act, 2013.

About the Independent Director's Databank

- This databank seeks to provide an easy to access & navigate platform for the **registration of existing IDs** as well as **individuals aspiring to become IDs**.
- **Companies also may register themselves with the databank** to search, select and connect with individuals who possess the right skills and attitude for being considered for appointment as independent directors.
- Also, IDs are now required to pass a basic **online proficiency self-assessment test**.
- The **Indian Institute of Corporate Affairs (IICA)**, under the MCA, would be maintaining the databank portal.
- Powered by an **Integrated Learning Management System**, the **data bank portal** also provides for a **wide array of e-learning courses** on various topics including the Companies Act, Securities laws, basic accountancy, board practices, board ethics and board effectiveness.
- Several **other value-added services** are also expected to be rolled out through the portal for **capacity building of Independent Directors**.

Corporate Governance

- It is the **system of rules, practices and processes** by which a firm is directed and controlled. It deals with the ways in which suppliers of capital to corporations, especially faceless, powerless small investors, can assure themselves of getting fair treatment as stakeholders.
- At the **core of corporate governance** practice is the **Board of Directors** which oversees how the management serves and protects long-term interests of all stakeholders of the Company.
 - It is based on the premise that a group of **trustworthy** and **respectable** people should look after the interests of the large number of shareholders who are not directly involved in the management of the company.
 - They are **governed by the Companies Act 2013**.
- To further strengthen the corporate governance practices, the **Companies Act also provides for the Independent Directors** within the Board of Directors.

About Independent directors (ID)

- An **ID** is a director on a board of directors representing minority shareholders and who does not have a pecuniary relationship with the company or related persons, except for sitting fees.
- As per the Companies Act, 2013, Independent Director means **any director other than a managing director or whole-time director or a nominee director**.
- **Schedule IV of the Companies Act, 2013** provides for the Duties, Role and Functions of IDs. It provides that the **Independent Directors shall**
 - uphold ethical standards of **integrity** and **probity**;
 - **report concerns about unethical behaviour**, actual or suspected fraud or violation of the company's code of conduct or ethics policy;
 - help in **bringing an independent and objective judgment** to bear on the Board's deliberations especially on issues of strategy, performance, risk management, resources, key appointments and standards of conduct;
 - ensure their **concerns** about the running of the company or a proposed action are **addressed** by the Board;
 - ascertain and ensure that the company has an **adequate and functional vigil mechanism** and to safeguard the interests of a person using such mechanism;
 - safeguard the **interests of all stakeholders**, particularly the minority shareholders;
 - moderate and arbitrate in the **interest of the company as a whole**, in situations of conflict between management and shareholder's interest.

Given the importance of this role, the institution of independent directors must be continually supported and strengthened. In this regard, Companies Act, 2013 confers greater power and responsibility on them in the governance of a company.

- Companies Act requires every listed company to have **at least one-third of total number of directors as IDs**.
- In line with **Kotak Committee recommendations**, SEBI (Listing Obligations and Disclosure Requirement (LODR)) (Amendment) Regulations, 2018 impose stricter obligations that require **at least half of the total directors** of the board of a listed entity to be IDs if the Chairperson is executive/related to the promoter, and in other cases, at least one-third IDs.
 - Moreover, it has mandated top 500 listed companies to have **at least one women independent director**. Same will be applicable for top 1000 listed companies by April 1, 2020.
- The Act also requires the **Corporate Social Responsibility Committee** of the Company to consist of at least three directors, including **at least one independent director**.

Challenges to the working of IDs

- **Legal Provisions:** The provisions in Companies Act, 2013, and SEBI listing norms say that **IDs can be held personally liable** for any acts of omission or commission by a company, with his knowledge, or consent, or connivance, or in cases where he had not acted diligently.
 - The **number of independent directors who resigned from board positions doubled in 2019**, compared with total exits in the previous two years.
 - Greater liability, rising number of corporate governance cases, increasing fear of fraud risk and being held liable and chances of personal reputation being at stake led to the exodus of IDs.
 - IDs are also concerned because of reluctance of companies on signing up for the **Directors and Officers Liability Insurance**. This helps to protect the IDs in case they are being sued for mismanagement or wrong decisions.
- **Information asymmetry:** The problem of legal liability is compounded by the lack of information.
 - IDs are outside the company and usually interact with the management on a quarterly basis.
 - They have **no independent sources of information**. They rely on the information provided by the company and by statutory and internal auditors who are appointed by the board of directors **but are paid for by the company**.
 - However, there is a **big gap** between what auditors' report and what IDs are expected to do.
 - Therefore, Independent directors have increasingly **onerous fiduciary responsibilities**, but **no resources or tools** to discharge them.

- **Challenges to the Independence:** Independence of Board is critical to ensure that Board fulfils its role objectively and holds management accountable to company. Lack of 'true' independence stems from the fact that most companies utilize the **promoters' or other board members' personal network** to search and appoint independent directors.

Conclusion

- These challenges have manifested into **big corporate scams** in recent times such as IL&FS crisis, various Bank frauds (ICICI bank, PNB), Infosys, Tata etc. Government is committed to address these challenges. Launching of Independent Director's Databank is a right step in this direction.
- Against the backdrop of the government making efforts to make its role minimal in the affairs of corporates, the role of IDs is more vital. There is a need to have a **better understanding of the role of IDs** and the kind of challenges faced by them.

3.13. DRAFT NATIONAL STATISTICAL COMMISSION (NSC) BILL, 2019

Why in news?

Recently, The Ministry of Statistics and Programme Implementation (MoSPI) has sought suggestions on the Draft National Statistical Commission (NSC) Bill 2019 to make data collection more transparent and reliable.

Background

- The need for an independent apex advisory body for official statistics has been long felt. Rangarajan Commission was set up by the government in year 2000-2001 with a mandate to propose overhauling reforms for Official statistical system.
- In pursuance of the recommendations of Rangarajan Commission, **National Statistical Commission was set up as an interim measure by a Notification dated 1st June 2005.**
- It is an advisory body on statistical matters.
- In the absence of any legislative framework, the NSC has faced challenges in implementing its recommendations.
- The present draft NSC Bill 2019 proposes to establish a National Statistical Commission as the nodal and autonomous body for all core statistical activities for the country, to evolve, monitor and enforce statistical priorities and standards and to ensure statistical coordination.

The salient features of the Bill

- **The Composition of NSC:** The Bill proposes for the Commission to be composed of
 - **A fulltime Chairman and five full time members** (appointed by the Central Government on the recommendation of the Search Committee)
 - Deputy Governor, RBI as nominated by the Governor, RBI
 - Chief Statistician of India (the position was created by the same executive order that established the present NSC in 2005.)
 - Chief Economic Advisor (Ministry of Finance) as ex-officio member
- **Statistical Audit:** It provides for **establishing National Statistical Audit and Assessment Organization within NSC with a Chief Statistical Auditor** in the rank of Secretary to the GoI.
- **Independent secretariat for the Commission:** To further strengthen the autonomy of the commission, the bill also proposes **setting up of an independent secretariat** for the Commission headed by a Secretary rank officer of GoI.

Powers and Functions of the National Statistical Commission (NSC)

- The Government shall seek advice from the Commission on **legislative measures to be undertaken** in the matters relating to official statistics.
- **To identify and evolve national policies and priorities** relating to the official statistical system.
- Laying down standard statistical concepts, definitions, classifications and methodologies
- **Establishing high professional standards and devising code of conduct** to build up ethos for the profession of statistics to achieve highest standard and professional excellence.

- Promoting public awareness and devising measures for improving public trust in official statistics.
- Promoting teaching, research and participation of academia in fields of official statistics.
- To exercise statistical coordination between Ministries, Departments, State Governments and other agencies.
- The NSO shall maintain a “warehouse” for Core Statistics, for dissemination amongst all users in the public and private sectors inside and outside the country and serve as the sole provider of information to foreign Governments, international bodies and United Nations agencies.
- Government also proposed to give sweeping power to the commission on its authority over non-government agencies, which produce vital data, such as Centre for Monitoring Indian Economy (CMIE).

फाउंडेशन कोर्स सामान्य अध्ययन प्रारंभिक एवं मुख्य परीक्षा 2021

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4. SECURITY

4.1. CHIEF OF DEFENCE STAFF (CDS)

Why in news?

- Recently, Ministry of Defence (MoD) created the post of Chief of Defence Staff (CDS) to provide “effective leadership at the top level” to the three wings of the armed forces.
- The outgoing Army chief, **Gen. Bipin Rawat** has been appointed as the country’s first Chief of Defence Staff (CDS).

Background

- The first proposal for a CDS came from the **Kargil Review Committee (KRC)**, set up in 2000.
- Later, the **Group of Ministers Task Force** that studied the KRC Report and recommendations, proposed to the Cabinet Committee on Security that a CDS would be created.
- In 2011, the **Naresh Chandra Committee on defence and security** also suggested a watered-down version of the CDS proposal.
- **Shekatkar Committee** which submitted its report in 2016 also opined for CDS, having recommendations pertaining to tri-service integration.

About CDS

- The post of Chief of Defence Staff created in the rank of a four-star General with salary and perquisites equivalent to a Service Chief.
- The post is created to
 - **promote jointness in procurement, training and staffing for the Services** through joint planning and integration of their requirements.
 - **facilitate restructuring of Military Commands for optimal utilisation** of resources by bringing about jointness in operations, including through establishment of joint/theatre commands.
 - **promote use of indigenous equipment** by the Services.
- Central government has set **65 as the maximum serving age for the CDS**.
- The Chief of Defence Staff will **also head the Department of Military Affairs (DMA)**, created within the Ministry of Defence and function as its **Secretary**.
- He would be primus inter pares or **first among equals**. He is also vested with the authority to **provide directives to the three chiefs**.
- CDS will act as the **principal military adviser** to the defence minister on all tri-services matters.
- The three Chiefs will continue to advise Defence Minister on matters exclusively concerning their respective Services.
- CDS **will not exercise any military command**, including over the three Service Chiefs, so as to be able to provide impartial advice to the political leadership.
- He will serve as the **permanent chairman of the Chiefs of Staff Committee (CoSC)** which comprises the three service chiefs.
- As the Permanent Chairman of Chiefs of Staff Committee, CDS will perform the following functions:
 - CDS will administer tri-services organisations including those related to Cyber and Space.
 - Be a member of the **Defence Acquisition Council (DAC)** chaired by the Defence Minister and the Defence Planning Committee headed by National Security Advisor
 - Function as the **Military Adviser to the Nuclear Command Authority**.
 - Implement the **five-year Defence Capital Acquisition Plan (DCAP)** and the two-year roll on **Annual Acquisition Plans** as a follow up of the Integrated Capability Development Plan.

Functions of DMA

The following areas will be dealt by the Department of Military Affairs headed by CDS:

- The Armed Forces of the Union, namely, the Army, the Navy and the Air Force.
- Integrated Headquarters of the Ministry of Defence comprising Army Headquarters, Naval Headquarters, Air Headquarters and Defence Staff Headquarters.
- The Territorial Army.
- Works relating to the Army, the Navy and the Air Force.
- Procurement exclusive to the Services except capital acquisitions, as per prevalent rules and procedures.

- Assign inter-Services prioritisation to capital acquisition proposals based on the anticipated budget.
- Bring about reforms in the functioning of three Services aimed at augmenting combat capabilities of the Armed Forces by reducing wasteful expenditure.

Need for CDS

- **Inadequate existing structure:** India has had a feeble equivalent to CDS, known as the **Chairman, Chiefs of Staff Committee (CoSC)**, where the seniormost among the three Service Chiefs is appointed as head.
 - However, the CoSC arrangement has been often cited “unsatisfactory”, and its Chairman as a “figurehead”, therefore could not further tri-service integration, resulting in inefficiency and an expensive duplication of assets.
- **Need for a central nerve centre:** India currently has 17 Service commands at different locations and duplicating assets, therefore the CDS is seen to be **vital to the creation of “theatre commands”** as well as integrating tri-service assets and personnel.
- **To weed out the policy paralysis:** Major deficiency of the planning process led to lack of inter- and intra-service prioritisation, duplication of efforts, and sub-optimal utilisation of resources. The CDS could be entrusted with the task of defence planning, subject to overall guidance and directions from the Defence Planning Committee.
- **Lack of co-ordination between the Government and Armed forces:** The KRC Report pointed out that in India, the armed forces headquarters is outside the apex governmental structure, therefore, the top executives do not have the benefit of the views and expertise of military commanders, which hurts India’s position in critical war like situations.
- **To further defence diplomacy:** Presently, the crucial aspect of defence diplomacy is being conducted in an ad-hoc manner without an overarching policy direction from the Ministry of Defence. It would be ideal if the CDS is made responsible for all aspects of defence diplomacy, subject to clear policy guidelines from the government.
- **Need for capital procurement:** The armed forces play a vital role in arms procurement. The CDS would be ideally suited to have larger delegated financial powers, over and above those exercised at the lower level, to expedite the procurement process.
- **Needed for quality assurance:** The Department of Defence Production (DDP) is often accused of conflict of interest because of its dual responsibility of being the administrative department for both production and quality assurance, however with the CDS coming up, it would be ideally suited to take up this responsibility of quality certification.
- **Resource crunch:** Duplication of assets in infrastructure and human resources, whether in training or in operational commands, is a huge drag on the defence budget, leaving scant little for capital acquisition. CDS is therefore needed to help cut back infructuous spending in defence.

Conclusion

In the fast-changing security and defence environment, the country expects a payoff in the form of leaner and meaner forces, who will obtain synergy through planning, training and executing joint operations. Thus appointment of CDS is undoubtedly a bold and decisive step in reforming India’s higher defence management.

4.2. ANTI-MARITIME PIRACY BILL 2019

Why in news?

Recently, the bill was introduced in Lok Sabha by the **Ministry of External Affairs**.

Need for the bill

- **To bring a comprehensive, and a specific domestic legislation** on piracy.
 - Till now, the provisions of the Indian Penal Code pertaining to armed robbery and the Admiralty jurisdiction of certain courts have been invoked to prosecute pirates apprehended by the Indian Navy and the Coast Guard.
- **To deal with increasing incidences of piracy**, within India's Exclusive Economic Zone
 - With the enhanced naval presence in the Gulf of Aden, pirates shifted their area of operations eastwards and southwards. This led to a flurry of piracy incidents towards the western coast of India as well.

- **Other reasons for increase:** geographical expanse of the seas; non-existent air and land security and surveillance systems; lack of collaboration between intercontinental and international regions; inadequate navy-coast guard protection etc.

- **To fulfil India's commitment** in signing the United Nations Convention on the Law of the Sea (UNCLOS).
 - UNCLOS provides that all States have an obligation to cooperate to the fullest possible extent in the repression of piracy.
- **To promote the safety and security of India's maritime trade** including the safety of our vessels and crew members. According to the Ministry of Shipping, around 95 % of India's trading by volume and 70 % by value is done by maritime transport.



Key features of the bill

- **Definition of Piracy:** The Bill defines piracy as “any illegal act of violence, detention, or destruction committed against a ship, aircraft, person or property, for private purposes, by the crew or passengers of a private ship or aircraft”.
- **Applicability of the Bill:** All parts of the sea adjacent to and beyond the limits of the Exclusive Economic Zone of India.
- **Penalties:** An act of piracy or being an accessory to the commission of offence will be punishable with imprisonment for life or with death depending on the gravity of the case.
- **Extraditable Offence:** Piracy accused can be transferred to any country for prosecution with which India has signed an extradition treaty. In the absence of such treaties, offences will be extraditable on the basis of reciprocity between the countries.
- **Designated Courts:** Central Government, in consultation with the Chief Justice of the concerned High Court, will specify certain courts as Designated Courts for speedy trial of offences of piracy.

United Nations Convention on the Law of the Sea (UNCLOS)

- It lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources.
- It enshrines the notion that all problems of ocean space are closely interrelated and need to be addressed as a whole.
- India signed the Convention in 1982 and ratified in 1995.

Other measures taken by the Government to combat piracy in the Indian Ocean

- **Enhanced vigil by the Indian Navy** in the Indian Exclusive Economic Zone (EEZ) and westward upto 65 degree east longitude.
 - India is an active participant of various cooperative mechanisms like “**Shared Awareness and De-confliction (SHADE)**” established to facilitate sharing of information.
 - **GSAT 7 (Rukmini)** a communication satellite exclusively for Indian navy to monitor Indian ocean up to 2000 nautical miles.
 - **India, Japan and China have agreed to coordinate patrols** especially in the Internationally Recommended Transit Corridor established for use by all merchant ships in the Gulf of Aden.
- **Participating in the various multilateral fora** that have been set up to combat piracy such as IORA (Indian Ocean Rim Association)
- An **Inter-Ministerial Group (IMGO)** has been set up under the Ministry of Shipping to deal with the hostage situation arising out of hijacking at sea of merchant vessels with Indian crew.
- **Contingency Plan** for dealing with piracy and hijacking of merchant ships and constitution of a Committee of Secretaries on Anti-Piracy and Hijacking at sea (COSAPH)
- **Banning** of sailing vessels to ply in waters south or west of the line joining Salalah and Male through Merchant Shipping
- The **guidelines for elaborate anti-piracy measures** to be implemented on Indian Ships.

Maritime Piracy and related International treaties

- **Piracy is defined in Article 101 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS)** as any criminal acts of violence, detention, or depredation, committed for private ends by the crew or the passenger of a private ship

or aircraft that is directed on the high seas against another ship, aircraft or against persons or property on board a vessel or aircraft.

- **38 incidents of piracy and armed robbery against ships were reported by the International Maritime Bureau (IMB)** in the first three months of 2019 (22 from Gulf of Guinea).
 - **In 2018, there were 76 incidents of piracy and armed robbery reported in Asia.**
 - **IMB is a specialised division of the International Chamber of Commerce (ICC)** which is a non-profit making organisation, established in 1981 to act as a focal point in the fight against all types of maritime crime and malpractice.
- International Maritime Organization (IMO) has adopted some International Conventions for its member countries to implement.
 - **Suppression of Unlawful Acts Against the Safety of Maritime Navigation (SUA Convention)**, to prohibit and punish behaviour which may threaten the safety of maritime navigation.
 - **International Convention for the Safety of Life at Sea (SOLA)**, sets minimum safety standards in the construction, equipment and operation of merchant ships.
 - **International Ship and Port Facility Security Code (ISPS Code)** is an amendment to the Safety of Life at Sea (SOLAS) Convention and prescribes responsibilities to governments, shipping companies, shipboard personnel, and port/facility personnel to "detect security threats and take preventive measures against security incidents affecting ships or port facilities used in international trade."
 - In addition, IMO assists governments lacking the technical knowledge and resources needed to operate a shipping industry safely and efficiently through the **Integrated Technical Cooperation Programme (ITCP) and the Djibouti Code of Conduct.**

4.3. INDIA NEPAL CROSS BORDER COOPERATION

Why in News?

Recently, Nepal's Armed Police Force (APF) has assured India, cooperation in checking doubtful "third country" operatives on its soil.

More about the News

- The decision was inked during the **fourth India-Nepal coordination meeting** held between Indian border guarding force **Sashastra Seema Bal (SSB)** and its Nepalese counterpart **Armed Police Force (APF)** at Pokhara, Nepal.
- This is for the **first time** that the joint record of discussions had a **special mention of 'third country' operatives.**
- The 1,751-km long open India-Nepal border has been reported multiple times in the past to have been used by Pakistani elements and terrorists to perpetrate criminal activities and a number of such operatives have been caught by Indian security agencies. E.g. In 2017 the SSB arrested a Hizbul Mujahideen militant, from the Sonauli border post in Uttar Pradesh.
- Also, a report by the US State Department has said that Indian Mujahideen which has ties with Pakistan-based terrorist groups LeT, JeM and Harakat ul-Jihad Islami, is using **Nepal as a hub to carry out terrorist activities against India.**
- With this, not only terrorist elements from Pakistan and other countries, but **smuggling kingpins and fake Indian currency notes (FICN) mafia** can also be better checked.

Sashastra Seema Bal (SSB)

- SSB comes under the aegis of the **Ministry of Home Affairs** and a part of the Central Armed Police Forces (**CAPF**), along with **six other central security forces in India** (Assam Rifles, Border Security Force, Central Industrial Security Force, Central Reserve Police Force, Indo Tibetan Border Police and National Security Guard).
- It was established in 1963 in the aftermath of the **Chinese aggression in 1962.**
- It is currently deployed at 2450 kms long **Indo-Nepal and Indo-Bhutan borders** across the states of Uttarakhand, Uttar Pradesh, Bihar, West Bengal, Sikkim, Assam and Arunachal Pradesh.
- It has also been declared as the **Lead Intelligence Agency for these border areas** and it coordinates its activities with the Intelligence Bureau (IB), Research and Analysis Wing (RAW) and the Multi Agency Centre (MAC) of various agencies under the Union Home Ministry.
- **Responsibilities include:**
 - To promote a sense of security among the people living in the border areas.
 - To prevent trans-border crimes and unauthorized entry into or exit from Indian territory.
 - Carry out civic action programme in the area of responsibility.
 - To prevent smuggling and other illegal activities on Indian frontiers.

5. ENVIRONMENT

5.1. COP 25

Why in news?

- Recently, Conference Of Parties (COP 25) under the auspices of United Nations Framework Convention on Climate Change (UNFCCC) had concluded in Madrid under the presidency of Chile.
- Conference also included the 15th session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (**CMP 15**), and the second session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (**CMA 2**).

Agenda of COP25

COP25 in Madrid was mandated by the UNFCCC to resolve the outstanding issues in the Climate Package, including:

- **Carbon markets** dealt with in Article 6 of the Paris Agreement
- **Loss and Damage under Paris Agreement** and **setting up of a fund** to help poor countries reeling from climate crisis
- **Enhancing Nationally Determined Contributions (NDCs)** by all countries to curb emissions.

Significance of COP25:

- As the Paris Agreement comes into force from January 1st, 2020 the COP 25 was important to finalize the “rulebook” for the Paris Agreement.
- It is no longer a climate crisis; it is a **climate emergency**. Delegates committed to limiting the global temperature rise to 1.5°C, to achieve carbon neutrality by 2050, and to reduce greenhouse gas emissions by 45% of 2010 levels by 2030.
- Owing to its original location in Chile- a nation with around 4,000 miles of coastline - the leadership dubbed this year’s event the “**blue COP**”, laying out its intention to focus on oceans.

Key Outcomes: The COP adopted the “**Chile Madrid Time for Action**” document.

- **On Emission Reductions:** Rather than strong language setting out a clear timeline for nations to enhance their NDCs in 2020, it merely reiterated the invitation to parties to communicate. The text then “urges parties to consider that gap” when they “recommunicate” or “update” their NDCs, though it does not specify a fixed timeline.
- **On Loss and Damage:** The final decision on loss and damage that emerged was not as strong as developing nations had pushed for. Some stronger language was lost, such as a specific call for “developed countries” to increase their support. The final texts essentially note that the GCF already supports activities that can be defined as relating to “loss and damage”, with a suggestion that it – and other funds – could do more in this area in the future.
 - Also, the **Santiago Network was established**, as part of the WIM, to **catalyse the technical assistance** required by the most vulnerable countries.

About Loss and Damage (L&D):

- Under L&D, rich countries who have historical responsibility for climate change are asked to be liable to the developing countries who are already facing climate change impacts.
- The **Warsaw International Mechanism (WIM)** on Loss and Damage came into being in **2013(COP 19)**. It acknowledges that “loss and damage associated with the adverse effects of climate change includes, and in some cases involves more than that which can be reduced by adaptation”.
- In **Paris Agreement 2015**, developed countries agreed to include loss and damage in the agreement, but only with an added clause that the specific article which relates to loss and damage “does not involve or provide a basis for any liability or compensation”

Issues and debates related to L&D:

- Negotiations on L&D under the UNFCCC are stuck between demands for climate justice, understood as compensation, for increases in extreme and slow-onset event risk, and the reluctance of developed countries to consider L&D different from adaptation.
- Whether insurance instruments, especially micro-insurance and regional pools, can serve as a risk-reducing and equitable compensatory response to L&D from climate extremes occurring in developing countries.
- The WIM has made little progress identifying new or additional finance to address L&D. Vulnerable nations will likely require the use of innovative financial tools beyond insurance.

- **On Climate Finance:** Negotiators were unable to agree on when they should take a decision on whether and how the **work programme for the Long Term Finance agenda** should continue post-2020, reflecting concerns about whether the \$100bn will be met next year and how to continue holding developed countries accountable as they continue this finance mobilisation through 2025.
- **On Carbon Market:** The conference closed without resolving one of the most significant objectives it set out to achieve – setting rules for carbon markets under Article 6 of the Paris Agreement. The decision was deferred till COP26 next year.
- **On Gender Action Plan:** Decision was made on a new **five-year gender action plan (GAP)**, intended to “support the implementation of gender-related decisions and mandates in the UNFCCC process”.

5.1.1. CARBON MARKETS

- Carbon markets are one of the tools to tackle the climate change problem, i.e. the accumulation of greenhouse gases (GHGs) in the atmosphere. Since it doesn't matter where we reduce emissions, the argument behind carbon trading is that the best way to take climate action is to reduce emissions where it is least costly to do so.
- **Article 6 under Paris Agreement** contains **three separate mechanisms** for “voluntary cooperation” towards climate goals: **two based on markets** and a **third based on “non-market approaches”**.

Carbon markets under the Paris Agreement (Article 6)

- **Market Mechanism 1 (Article 6.2)** – It sets up a carbon market which allows countries to sell any **extra emission reductions** {called as **Internationally Transferred Mitigation Outcomes (ITMO)**} they have achieved compared to their Nationally Determined Contributions (NDCs) target.
 - E.g., if a country has committed to reducing its emissions by 100 tCO₂e (tonnes of CO₂ equivalent), but actually reduces 110 tCO₂e, it would be able to sell the extra 10tCO₂e reduced to another country, which has not managed to meet its own target.
 - This is a **voluntary direct bilateral cooperation between the countries** aiming to promote sustainable development, while ensuring environmental integrity and transparency (the reporting requirements under Paris regime).
- **Market Mechanism 2 (Article 6.4)** - The second mechanism would create a **new international carbon market** for the trading of emissions reductions created anywhere in the world **by the public or private sector**.
 - This new market referred to as the “**Sustainable Development Mechanism**” (**SDM**) seeks to replace the **CDM**.

The non-Market Approach

- **Article 6.8** recognises “non-market” approaches to boost “mitigation, adaptation, finance, technology transfer and capacity-building”, in situations where no trade is involved.
- This could involve similar activities to those under Article 6.2 or 6.4, **without the added element of trading**. E.g., a country could support a renewable energy scheme overseas via concessional loan finance, but there would be **no trading of any emissions cuts generated**.
- It might also **overlap with other parts of Paris deal** on climate finance, capacity building or education and public awareness.

Understanding Overall Mitigation in Global Emissions (OMGE)

- Currently, international carbon market mechanisms operate under the rules set by the Kyoto Protocol and are in principle a **zero-sum game** for the atmosphere – meaning that no net reduction of global emissions occurs as a result of transfers between Parties.
 - For instance, a ton of greenhouse gas emissions is reduced in one place, and the international transfer of these reductions allows emissions to increase by the same amount in another place.
- A possible working definition for OMGE could be that it is achieved when carbon market mechanisms go beyond a zero net impact and directly lower global emissions. This occurs if a portion of the emission reductions achieved through carbon markets is used neither by the seller nor by the buyer toward achievement of its own NDC or climate mitigation goals. In contrast to the notion of 'own mitigation benefits', OMGE seeks to deliver 'global' mitigation.
- Among the various mechanisms to implement the OMGE, **Automatic Cancellation** is favored by most of the stakeholders. If this was implemented, every time a credit was transferred from a host country to another, part of it would be “cancelled”.
 - E.g., if 100 credits were transferred, representing 100 tCO₂e, then the receiving country might only be allowed to count 80 of those credits towards its targets. In doing so, 20tCO₂e would not be counted by anyone and, overall, mitigation would be achieved.

- The delivery of an **OMGE** is a key requirement of the SDM. This means that mitigation should go beyond what would have happened if the trading scheme had not been in place.
- In contrast to direct bilateral cooperation under Mechanism 1, this mechanism will be **supervised by a body designated by the UN Conference of the Parties (CoP)**.
- Another unique aspect of this mechanism is **mobilizing the private sector to participate in climate change mitigation** by providing suitable incentives.

Why is Article 6 important?

- It envisions a system that **allows for higher ambition** in countries' mitigation and adaptation actions and that promotes **sustainable development** and **environmental integrity**. it could help reduce emissions in two ways.
 - First, the principle of **OMGE within SDM** has the potential to go beyond offsetting and the "zero-sum game" established by the Kyoto markets.
 - Second, trading could help reduce emissions by making it **easier** and **cheaper** for countries to meet their climate targets, in the process encouraging them to set increasingly ambitious goals.
 - ✓ According to a World Bank Report, some 96 country climate pledges - about half of all NDCs - refer to the use of carbon pricing initiatives.
 - ✓ According to IETA, trading could save \$250bn every year by 2030. This could be invested into further emissions cuts to raise ambition.
- It also has a clause that a **"share of the proceeds" generated under SDM** shall be utilised to assist developing country parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation. This could become **another route to channel climate finance** from richer nations to developing countries, **supplementing existing measures, such as the Green Climate Fund**.
- Article 6 could also provide a **means of incorporating climate commitments by businesses** into the wider UN process. Article 6 is the only part of the text that directly refers to private sector participation in the Paris process.

Double Counting and Corresponding Adjustment

Tracking countries' progress towards their NDCs is often done based on countries' emission inventories. These inventories are essentially a physical measure of the amount of CO₂e which is released into the atmosphere.

If emissions are reduced, this will be seen in the country's inventory. If this emission reduction is sold to another country, it will also be used by this other country towards meeting its objective. This is double counting.

In order to avoid this, it is of paramount importance that countries make corrections to their reported emissions, to show that some of their achieved emission reductions have been used by another entity. This is called a "corresponding adjustment".

E.g. if a country reduced its emissions by 100tCO₂e, but sells 10 credits to another entity, then it should report a reduction of 90tCO₂e. In this case, the corresponding adjustment applied is 10tCO₂e.

Key issues regarding Article 6

- **Avoiding double-counting:** When one country sells a reduction to another country, it is important to ensure that this reduction is not counted by both countries. The double-counting must be avoided through a "corresponding adjustment".
- **Emissions reductions 'inside' vs 'outside' the scope of host NDCs:** The issue would arise if a host country were to sell Article 6 carbon credits that were created in a sector falling "outside" the scope of its NDC, as opposed to falling "inside" the pledge.
 - The concern is that this income would act as an incentive to keep certain sectors "outside" a country's goals, so that it could continue to cash in without affecting the targets "inside" its NDC.
- **'Transition' of Kyoto-era projects, methods and carbon credits:** Several countries that are host to large numbers of ongoing CDM projects, such as **Brazil** and **India**, are keen to allow their full transition along with Kyoto-era methodologies and units. Others fear a full transition could undermine the ambition of the international climate regime, by allowing already-weak targets to be met without any additional effort.
- **The 'share of proceeds' from trading that will be set aside for adaptation:** While the Paris Agreement requires this levy to be taken from all Article 6.4 activities, many developing nations have been pushing to extend it to Article 6.2 as well.
 - Developing nations argue that if such a system is not applied to both markets, besides providing fewer proceeds for the adaptation fund, it will result in an unbalanced situation where **Article 6.2 is less regulated**, meaning nations might opt to use it instead of the **stricter Article 6.4 scheme**.

- **Protecting local stakeholders and the environment and delivering on the sustainable development goals:** CDM has lacked the most essential safeguards to avoid harmful local impacts. This must be corrected in the new set of markets under the Paris Agreement. Specifically, this means adopting detailed rules for consulting local stakeholders before emission reduction projects are implemented - and making such consultations mandatory, establishing a grievance mechanism, governed by an independent body, and specifying criteria which could be used to measure a project's contribution to sustainable development.

Conclusion

The carbon market system must evolve towards something better than offsetting. It should aim to accelerate the transition, rather than offering a cheap way out and replacing somebody's efforts with those of someone else. The world should move away from offsetting mechanisms and towards financing climate projects that truly drive the zero-carbon transition.

Lessons from the Kyoto Protocol- Clean Development Mechanism (CDM)

- CDM allowed rich countries to buy emission reductions from developing ones through carbon credits, called Certified Emission Reductions (CERs). In theory, this should have allowed countries to adopt more ambitious climate targets. In practice, it even failed at the task of compensating existing emissions. This is because a large majority of the emission reductions under the CDM would have happened anyway.
- For example, some projects which sold emission reductions were mandated by law, and some were profitable even without selling credits. Countries relied on these credits to replace other emission reduction efforts which meant that the CDM led to an increase in emissions, compared to a situation where countries would have met their targets without relying on the CDM.
- It is estimated that 85% of CDM projects would have operated even without the CDM revenues.
- In addition, some projects registered under the CDM have had **significant negative impacts at local level**, because the system lacks essential safeguards. For example, its **rules on local stakeholder consultations are insufficient** and it has **no mechanism in place to address grievances** raised by local communities. These elements demonstrate why the CDM has failed at its task of contributing to the global effort to reduce greenhouse gas emissions and delivering sustainable development benefits.

5.1.2. CLIMATE FINANCE

Introduction

- Climate finance refers to **local, national or transnational financing** - drawn from public, private and alternative sources of financing -that seeks to **support mitigation and adaptation actions** that will address climate change.
 - Climate finance is **needed for mitigation**, because large-scale investments are required to significantly reduce emissions.
 - Climate finance is **equally important for adaptation**, as significant financial resources are needed to adapt to the adverse effects and reduce the impacts of a changing climate.
- The Convention (UNFCCC), the Kyoto Protocol and the Paris Agreement call for financial assistance.
- In accordance with the **principle of "common but differentiated responsibility and respective capabilities"** set out in the Convention, **developed country Parties are to provide financial resources to assist developing country Parties** in implementing the objectives of the UNFCCC.
- To facilitate this, the Convention has **established Financial Mechanisms** to provide funds to developing country Parties.
 - The **Global Environment Facility (GEF)** has served as an operating entity of the financial mechanism since the Convention's entry into force in 1994.
 - At **Copenhagen COP 15**, in 2009, under **Copenhagen Accord**, developed countries committed to provide developing countries with "scaled up, new and additional, predictable and adequate funding" with a **target of mobilizing \$100 billion per year by 2020** from a "wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance".
 - ✓ Furthermore, governments committed to establish the **Green Climate Fund**, through which "a significant portion of this financing should flow".
 - At **COP 16 (2010)**, Parties established the **Green Climate Fund (GCF)** and in **2011 (COP 17)** also designated it as an operating entity of the financial mechanism.

- Additionally, Parties have established special funds: **Special Climate Change Fund (SCCF)**, the **Least Developed Countries Fund (LDCF)**, both managed by the GEF; and the **Adaptation Fund (AF)** under the Kyoto Protocol in 2001.
- **At COP 16**, Parties decided to establish the **Standing Committee on Finance (SCF)** to assist the COP in exercising its functions in relation to the Financial Mechanism of the Convention. E.g. providing **biennial assessment (BA) of financial flows** from developed to developing countries.
- **At Paris Climate Change Conference (COP 21)**
 - The Paris Agreement **reaffirms the obligations of developed countries**, while for the first time also **encouraging voluntary contributions** by other Parties.
 - Parties agreed that the GCF and GEF as well as the SCCF and the LDCF shall serve the Paris Agreement.
 - Developed countries agreed to continue mobilizing \$100 billion a year until 2025, and governments agreed to **set a new collective mobilization goal beyond 2025**, which would represent a **progression beyond the existing goal**.
 - Parties decided that the SCF shall also serve the Paris Agreement.

Key Issues involved in Climate Finance

Discussions around the financing of climate action revolve around **three key areas**:

- **The amounts of financing:** Financial commitments towards climate action are on an **upward trend as shown in the Box**. However, **issues** remain there.
 - **Amounts are not at all sufficient** - for instance, global annual fossil fuel subsidies together with their externalities cost about \$5.3 trillion.
 - Further, **not all the trends are encouraging**; for instance,
 - ✓ Currently US has stopped further funding for the GCF.
 - ✓ An AdaptationWatch report found that of over 5000 adaptation projects worth \$10.1 billion supported by OECD countries, **three-quarters lacked a clear connection to addressing vulnerability to climate change**.
 - Although countries agreed **at Katowice COP 24 to initiate formal discussions** on the new post-2025 mobilization goal in 2020, countries such as **India believe that a decision to initiate deliberations is weaker than a decision to start the process of setting this goal**.
- **The definitions and reporting of climate finance:** Important issues revolve around-
 - Even 10 years after COP 15, there is **no commonly agreed universal definition** of what type of finance can be counted as climate finance in support of the Copenhagen pledge under GCF.
 - There is a **disagreement on a whole set of qualitative and normative criteria** that should provide the **framework** for how public climate finance is mobilized, governed and disbursed.
 - ✓ These include questions such as the **additionality** (on top of or as part of official development assistance) or **predictability** of climate finance.
 - **Reporting guidelines approved at COP 24 for climate finance** provided by developed countries over the previous two years allow them to include an **almost limitless set of financial flows**, and even **non-financial efforts** such as capacity building or technology transfers, under climate finance.
 - However, **some important provisions in reporting remain optional** and will require continued scrutiny.

Discussions at COP 25

- Both the GEF and GCF guidance documents were debated around whether to instruct them to start working more specifically on **loss and damage**.
- There was also some discussion about the **creation of a new climate finance goal**, given the deadline for “\$100bn by 2020” (agreed in 2009 at the Copenhagen COP) is almost up.
- Another issue being considered was **long-term climate finance (LTF)**, a work stream that examines progress and scaling up of climate finance, but which is due to end in 2020. There is a debate about whether to continue it at all, or whether to bring it under the **CMA (i.e. the Paris Agreement)**.
- However, given that **the US is expected to leave the Paris Agreement** and yet is still involved in the \$100bn target **creating an ambiguity in the future of GCF**.
- Hence, there is **no consensus regarding the financing mechanisms** despite the Kyoto Protocol coming to an end by the end of 2019.

- ✓ As asserted by India, reporting processes should incorporate proper **verification mechanisms** and should be developed in **consultation with developing countries**.
- ✓ A **two-year lag in reporting** also limits the ability to properly verify the flows of climate finance.
- ✓ Concerns exist about the **accounting of financial instruments** such as market-rate loans and export credits towards developed country commitments, and
- ✓ **Reporting requirements** around the **projected financing** provisions remain weak.
- **The market mechanism:** The Paris Agreement states that a share of proceeds from the new market mechanism under Article 6 will go to support adaptation in developing countries. This revenue stream will likely be directed to the Adaptation Fund. Key topics of discussion relate to the size of this share, and whether it should be applied to all mechanisms created under Article 6, or only some.

Conclusion

There still doesn't exist an operational definition of what counts as "climate finance" or "new and additional". Clarifying these definitional and accounting issues in a consultative way, with an eye on post-2025 actions, would go a long way towards increasing trust and scaling up collective action.

5.2. OCEAN DEOXYGENATION

Why in news?

Recently, a report titled, '**Ocean deoxygenation: Everyone's problem**' was released by the International Union for Conservation of Nature (IUCN).

More on the news

- The report was released at the 25th session of the Conference of the Parties (COP25) to the UNFCCC.
- It highlights that ocean are increasingly experiencing low levels of oxygen, which threatens marine ecosystems and fish species that are already impacted by ocean warming and acidification.

Causes behind Ocean Deoxygenation

The loss of oxygen in the ocean has **two major causes**:

- **Climate Change:** As the ocean warms due to global warming, it **induces Ocean warming-driven deoxygenation**.
 - Warmer ocean water **holds less oxygen** and is **more buoyant** than cooler water. This leads to **reduced mixing of oxygenated water** near the surface with deeper waters (deeper waters naturally contain less oxygen).
 - This further intensifies with changes in currents and wind patterns.
 - Warmer water also **raises oxygen demand** from living organisms (**increases the metabolic rates**). As a result, less oxygen is available for marine life.

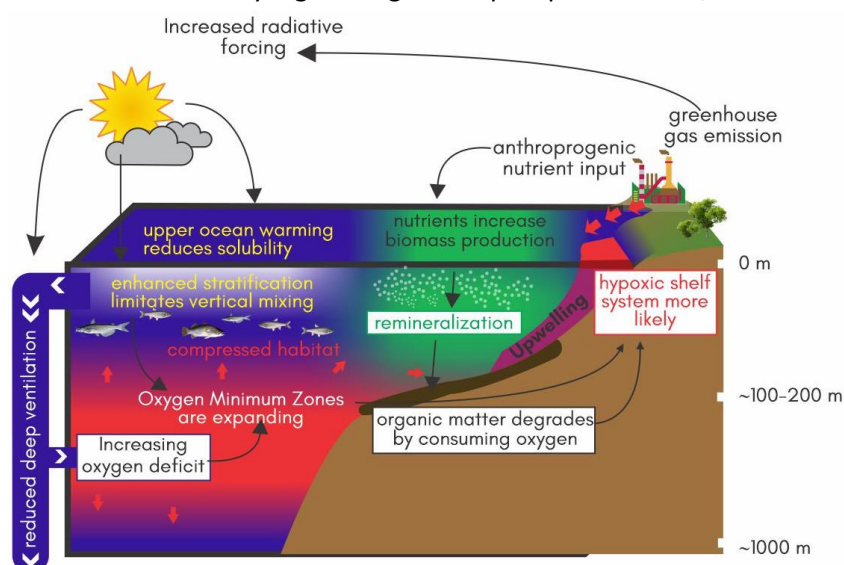
About Ocean deoxygenation

- Ocean deoxygenation refers to the **loss of oxygen** from the oceans.
- The **ocean gains oxygen** in the upper layer due to **photosynthesis** by autotrophic organisms and oxygen from the atmosphere **dissolving** in the under-saturated waters.
- The **ocean loses oxygen** throughout the whole water column:
 - **at the surface**- due to the outgassing of oxygen to the atmosphere in over-saturated waters,
 - **from the surface to depths**- due to the respiration of aerobic organisms and oxidation of reduced chemical species.
- This equilibrium has disturbed in the recent decades. The **global ocean oxygen inventory losses** from 1960 to 2010 are close to 2%.
- As compared to 45 sites in 1960s with low oxygen conditions, the report finds that 700 sites are affected by low oxygen conditions in 2010.
- Further, the volume of areas depleted of oxygen, known as "**anoxic waters**", have quadrupled.
- **Examples:** Among the best-known areas subject to low oxygen are the **Baltic Sea** and **Black Sea**.

Eastern boundary upwelling systems (EBUS) are one of the ocean's most productive biomes.

- These ecosystems are defined by ocean currents that bring **nutrient rich but oxygen-poor water** to the eastern edges of the world's ocean basins.
- EBUS are key regions for the climate system due to the complex of oceanic and atmospheric processes that connect the open ocean, troposphere and land, and the fact that they host Oxygen Minimum Zones (OMZs), responsible for the **world's largest fraction of water column denitrification** and for the **largest estimated emission of the greenhouse gas nitrous oxide**.
- As **naturally oxygen poor systems**, EBUS are especially vulnerable to further changes in global ocean deoxygenation and so what happens to the oxygen content of EBUS will ultimately ripple out and affect many hundreds of millions of people.

- Warming of bottom waters may result in **enhanced destabilization of methane gas hydrates**, leading to enhanced release of methane from sediments and subsequent aerobic respiration of methane to CO₂.
- **Nutrient pollution (Eutrophication)**- It causes oxygen loss in coastal waters as fertiliser, sewage, animal and aquaculture waste cause excessive growth of algae, which in turn deplete oxygen as they decompose.
 - The main **features of a coastal area** that becomes deoxygenated are:
 - ✓ **high biological production** from over-enrichment by high nitrogen and phosphorus loads;
 - ✓ a **stratified water column** from salinity, temperature or both, mostly in water depths < 100 m; and
 - ✓ **long water residence time** allows for development of phytoplankton blooms, containment of fluxed organic matter and the development of stratification.



Impacts

- **On marine organisms**- Oxygen is required by marine organisms to turn food into energy that can be used to grow and reproduce, as well as escape from, adapt to, and repair damage caused by other stressors. When ocean oxygen levels are insufficient, an organism may not have the necessary energy to withstand other stressors.
 - **Ocean warming, ocean deoxygenation, and ocean acidification** are major 'stressors' on marine systems and typically co-occur because they share a common cause.
- **On fisheries**- Oxygen declines induce **species range shifts**, changes to vertical and across-shelf movement patterns, and losses in spawning habitats.
 - **On coastal economy**- with **reduced fish catches**, decrease in economic profit of coastal states is expected.
- **On ecosystem services**- which can be negatively affected by combined deoxygenation, pollution and ocean acidification.
- **On Climate Change**- decreasing oxygen concentrations will increase greenhouse gas emission with increased release of methane and N₂O. Substantial nitrogen losses are observed in OMZs and they account for approximately 10% of global denitrification producing N₂O.
- **On Feedback mechanisms**- Oxygen loss is directly related to carbon and other nutrient cycles in the sediments.
 - e.g. The **recycling of phosphorus (P) in marine systems is enhanced** when oxygen in sea water is low. The resulting increased availability of phosphorous can further enhance productivity and, upon sinking of the organic matter, enhance the oxygen demand in deeper waters. This positive feedback-loop between productivity, oxygen loss and increased P availability can contribute to further deoxygenation.

India Specific Data- Indian Ocean

- The low-oxygen zones of the Indian Ocean are expected to continue to expand and intensify. The northern Indian Ocean contains about two thirds of the global continental margin area in contact with very low oxygen waters, and also houses the **world's largest naturally formed shallow low-oxygen zone (off western India)**.
- With countries surrounding its semi-enclosed basins, accounting for about a quarter of the global human population, **Indian Ocean's** environment, biodiversity and living resources, are most vulnerable to human-induced changes, especially deoxygenation.
- There is no clear evidence for expansion of **oxygen minimum zone (OMZ)** in the Arabian Sea, where microbes decompose organic matter via anaerobic pathways, but slight oxygen loss might have brought the relatively more oxygenated Bay of Bengal OMZ close to anoxia.
- **Hypoxia/ anoxia has developed** in several Indian estuaries, bays and ports as a result of human activities.
- There is a **lack of information** from potential hotspots, including the mouths of the Indus, Ganges, Brahmaputra etc.

- **On People-** People in low latitudes, coastal urban and rural populations, poor households in developing countries, and marginalized groups (such as women, children, and indigenous populations) are most vulnerable to the impacts of ocean deoxygenation.
 - People receive benefits from ocean ecosystem services in the form of well-being (assets, health, good social relations, security, agency).

Potential solutions

- **Work on climate change:** it requires a dramatic climate mitigation effort, primarily through urgent, radical and large global reductions in greenhouse gas emissions due to human activities.
- **Nutrient reduction strategies** that have been most effective have utilized legal requirements, set specific targets, and have employed monitoring to detect problems and responses to management strategies. These can be tailored to local needs and economies.
- **Increased oxygen observation and experimentation-** through integration with existing programmes and networks, targeting regions where more data will improve assessment of the current status and patterns of oxygen change.
 - **Continued improvement of oxygen monitoring equipment** including sensors that accurately measure ultralow oxygen concentrations and **low-cost sensors** that will make more extensive monitoring in under sampled coastal waters possible.
 - Need to **understand the critical mechanisms** that control the patterns and effects of oxygen declines.
- **Assessments of effects on human economies-** and societies, especially where oxygen declines threaten fisheries, aquaculture and livelihoods. Adaptive, ecosystem-based management of fisheries, spatial planning to create refugia that enhance ecosystem resilience, actions that reduce local stress on ecosystems, capacity building and socio-ecological shifts that ameliorate impacts on people could be considered.

Conclusion

This report is a wake-up call needed to dramatically raise our ambitions to immediately curb the emissions of greenhouse gases such as methane. This is needed before human actions irreparably impact and change the conditions favourable for life on earth.

5.3. INDIA STATE OF FORESTS REPORT 2019

Why in news?

The Forest Survey of India released the India State of Forest Report for the year 2019.

About ISFR

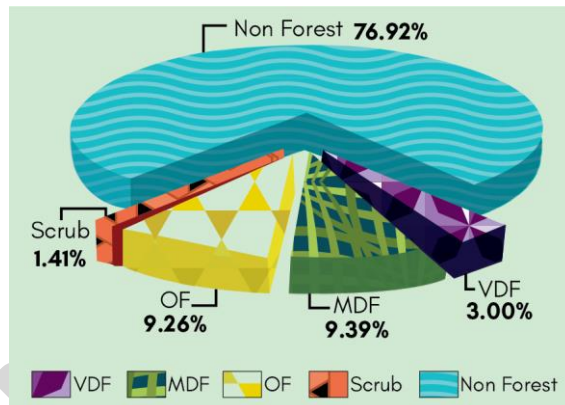
- FSI undertakes biennial assessment of country's forest resources, the results of which are presented as the India State of Forest Report (ISFR).
- Forest Survey of India (FSI), a premier national organization under the union Ministry of Environment and Forests is responsible for assessment and monitoring of the forest resources of the country.
- Since 1987, 15 such assessments have been completed and the current assessment is the 16th in the series.

- **Forest Cover:** Forest Cover refers to all lands more than one hectare in area, with a tree canopy density of more than 10% irrespective of ownership and legal status. Such lands may not necessarily be a recorded forest area. It also includes orchards, bamboo and palm.
- **Recorded Forest Area (RFA):** It refers to all the geographic areas recorded as 'Forests' in government records. It consists of Reserved Forests and Protected Forests which have been constituted under the provisions of the Indian Forest Act, 1927.
- **Green Wash:** The extent of wooded areas generally shown in light green colour on the Survey of India toposheets.
- **Tree Cover:** Tree patches outside recorded forest areas exclusive of forest cover and less than the minimum mappable area of one hectare.
- **Carbon Stock:** Forest carbon stock is the amount of carbon that has been sequestered from the atmosphere and is now stored within the forest ecosystem, mainly within living biomass and soil, and to a lesser extent also in dead wood and litter.
- **Open Forest (OF):** Lands with forest cover having a canopy density between 10 to 40 percent.
- **Dense Forest:** All lands with a forest cover having a canopy density of 40% and above.
 - **Moderately Dense Forest (MDF):** All lands with forest cover having a canopy density between 40 - 70%
 - **Very Dense Forest (VDF):** Lands with forest cover having a canopy density of 70% and above.

Key Highlights of the report

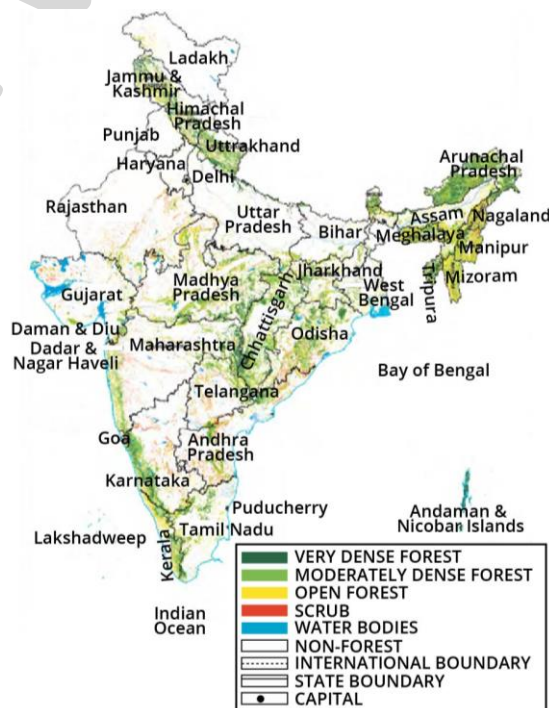
Forest and Tree Cover at national level:

- The **total forest cover of the country** is 7,12,249 sq km (Includes 4,975 sq km under Mangrove Cover) which is **21.67% of the total geographic area of the country**. The **tree cover** of the country is estimated as 95,027 sq km which is 2.89% of the geographical area.
- The **total Forest and Tree cover** of the country is 8,07,276 sq km which is **24.56% of the geographical area** of the country. In the last assessment it was 24.39%.
- There is an increase of 3,976 sq km (0.56%) of forest cover, 1,212 sq km (1.29%) of tree cover and 5,188 sq km (0.65%) of forest and tree cover put together, at the national level as compared to the previous assessment i.e. ISFR 2017.
- Very Dense Forests (VDF)**, which represents the lushest vegetation and has canopy density above 70%, **increased by 1,120 sq km** over the assessment of 2017.
- Forest cover within the Recorded Forest Area (RFA) / Green Wash (GW) has shown a slight decrease of 330 sq km (0.05%) whereas there is an increase of 4,306 sq km of forest cover outside the RFA/GW as compared to ISFR 2017.
- Forest cover in the hill districts of the country** is which is 40.30% of the total geographical area of these districts. The current assessment shows an increase of 544 sq km (0.19%) in 140 hill districts of the country.



Forest Cover in States

- Madhya Pradesh has the largest forest cover** in the country followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra.
- In terms of forest cover as percentage of total geographical area**, the top five States are Mizoram (85.41%), Arunachal Pradesh (79.63%), Meghalaya (76.33%), Manipur (75.46%) and Nagaland (75.31%).
- Total forest cover in the North Eastern region** is 65.05% of its geographical area showing a decrease of forest cover to the extent of 765 sq km (0.45%) in the region since 2017. Except Assam and Tripura, all the States in the region show decrease in forest cover.
- The **top five States in terms of increase in forest cover** are Karnataka (1,025 sq km), Andhra Pradesh (990 sq km), Kerala (823 sq km), Jammu & Kashmir (371 sq km) and Himachal Pradesh (334 sq km).
- States showing maximum loss in forest cover** are Manipur (499 sq km), Arunachal Pradesh (276 sq km) and Mizoram (180 sq km).
- The **total forest cover in the tribal districts** is 37.54% of the geographical area of these districts. The current assessment shows a decrease of 741 sq km of forest cover within the RFA/GW in the tribal districts and an increase of 1,922 sq km outside.



Wetlands:

- Among the big States, **Gujarat** has the largest area of the wetlands within RFA in the country followed by West Bengal.
- Among the smaller States/UTs Puducherry followed by Andaman & Nicobar (A&N) Islands have large areas of wetlands within RFA.
- In the country as a whole there are **62,466 wetlands covering 3.83% of the area** within RFA/GW of the country and 8.13% of the total number of wetlands are located within the RFA/GW.

Mangrove Cover:

- There has been a net increase of 54 sq km in the mangrove cover of the country as compared to 2017 assessment.
- The mangrove cover in the country is 4,975 sq km, which is 0.15% of the country's total geographical area.
- **West Bengal** has 42.45% of India's mangrove cover, followed by Gujarat 23.66% and A&N Islands 12.39%.
- About 40% of world's Mangrove Cover is found in South East Asia and South Asia. India has about 3% of the total Mangrove cover in South Asia.

Forest Fire:

- 21.40% of the forest cover of the country is highly to extremely fire prone. Most of the fire prone forest area are found in the northeastern region and the central part of the country.
- Most of the forest fires have occurred in open forests followed by moderately dense forests.

Carbon stock:

- The total carbon stock of the country was estimated at 7,124.6 million tons, which is an increase of 42.6 million tons from 2017. India's NDC goal is to create additional carbon sink of 2.5 to 3.0 billion tonnes of CO₂ equivalent through additional forest and tree cover by 2030.
- **Soil Organic Carbon (SOC)** represents the largest pool of carbon stock in forests. The SOC contributes 56% to the total forest carbon stock of the country.
 - It is the organic component of soil containing small plants residues, small living soil organism and decomposed organic matter.

Biodiversity:

- Maximum tree diversity has been found in tropical wet evergreen and semi-evergreen forests of Western Ghats (Tamil Nadu, Kerala and Karnataka) followed by northeastern states.
- Karnataka has maximum species richness for trees, Arunachal Pradesh has maximum species richness for shrubs and Jammu & Kashmir has maximum species richness for herbs.
- Arunachal Pradesh has the maximum richness of species when all the three types of plants (trees, shrubs and herbs) are considered, followed by Tamil Nadu and Karnataka.

Bamboo cover:

- The total bamboo bearing area was estimated to be 1,60,037 sqkm and increased by 3,229 sqkm, compared to the 2017 estimate.
- Madhya Pradesh has maximum bamboo bearing area followed by Maharashtra, Arunachal Pradesh and Odisha.

Dependence of fuelwood on forests is highest in the State of Maharashtra, whereas, for fodder, small timber and bamboo, dependence is highest in Madhya Pradesh. It has been assessed that the annual removal of the small timber by the people living in forest fringe villages is nearly 7% of the average annual yield of forests in the country.

Growing Stock: It is the sum (by number or volume) of all the trees growing/living in the forest or a specified part of it. The **total growing stock of wood in the country** is estimated 5,915.76 million cubic metre (cum). The average growing stock per hectare in forest has been estimated as 55.69 cum.

Special features in ISFR 2019:

- Quantified estimation of dependence of people living in the forest fringe villages on forests for fuelwood, fodder, small timber and bamboo. More than 1,70,000 villages are located in the proximity of forests.
- **Extent of Trees outside Forest (TOF) in the country:** TOF are trees found outside the recorded forest areas. Extent of TOF has been derived for the first time in the ISFR 2019.
- **Assessment of plant biodiversity in forests:** FSI in a first ever attempt has carried out a rapid assessment of biodiversity for all the States and UTs (except two) and for all the sixteen Forest Type Groups.
- **Refined Forest Type Map of India:** A new exercise for refining and updating the forest types as per the latest baseline forest cover was initiated in the year 2016 and has been completed in 2019.
- **Mapping of Fire Prone Forest Areas:** Fire prone forest areas of different severity classes were mapped in the grids.
- **Wetlands in Forest Areas:** FSI has undertaken a new exercise of overlaying spatial layer of wetlands obtained from Space Application Center over the boundaries of RFA.

- **Forest Cover on Slopes:** An exercise has been undertaken to assess forest cover on different slope classes for each State & UT of the country. High forest cover on steep slopes may be a good indicator of stability of mountains.
- **Major Invasive Species:** Invasive species pose serious threat to the sustainable management of forests. Information on important invasive species of each State & UT is collected for determining five major invasive species in each State & UT and also an estimate of area affected by them.
- **Important NTFP species:** A new information has been generated from the forest inventory data about the top five Non-Timber Forest Produce (NTFP) species. NTFPs are important source of livelihood for many tribal communities and villagers living in the proximity of forests.

5.4. HLC SUBMITS REPORT ON COMBATTING AIR POLLUTION IN NCR

Why in News?

A High-Level Committee (HLC), formed on the Supreme Court orders in its report gave recommendations on how to control air pollution levels in the national capital region (NCR).

Recommendations of the Committee

The report has following technological solutions to fight air pollution.

- **Use of Light Detection and Ranging (LiDAR) and Wireless Sensor Networks (WSN) technology** for better pollution-monitoring.
 - LiDAR is a high-end application of LASER-based technology for monitoring pollution. The HLC has recommended that this technology may be adopted for vertical monitoring at a few places to track transport of pollutants at higher altitude.
 - WSN may be used as an indicative monitoring tool for a few activities like mining, large construction sites, to supplement air quality data and report to regulator for conducting further investigation.
- **Adoption of oxy furnaces in industries:** Oxy furnace uses only oxygen as fuel instead of atmospheric air (which contains nitrogen), thus reducing the production of NO_x by about 90% in industries.
- **Photocatalytic paints to be used on roads:** These paints contain titanium dioxide (TiO₂) which has a good oxidising potential and can remove pollutants such as volatile organic compounds (VOCs) and nitrogen oxides from the atmosphere in the presence of sunlight and ultraviolet rays.
- **Use of anti-smog guns:** Anti-smog gun is a device that sprays nebulised water droplets into the air through high pressure propellers, which help particles to settle down.
- It also recommended the **use of chemical methods, including dust suppressants**, to control air pollution.
- **A pilot project to set up 'smog towers' as high as 20 feet:** Smog towers are basically structures designed as large-scale air purifiers to reduce pollution particles from the atmosphere. The Supreme court has given the Centre and Delhi government three months to set up a 'smog tower' pilot project at Connaught Place, New Delhi.
 - Around 65% reduction in pollution can be achieved on an average up to 700 metres from the tower. These towers will be able to improve the air quality of more than one kilometre in the downwind direction.
 - In Delhi, company named Kurin Systems is also developing a 12-metre (40 ft) tall smog tower, called the **Kurin City Cleaner**. It is expected to filter air for covering up to 75,000 people within a 3-kilometre radius with a capacity of cleaning 32 million cubic metres of air per day.

5.5. CLIMATE CHANGE PERFORMANCE INDEX -2020

Why in News?

The Climate Change Performance Index was recently released.

About Climate Change Performance Index (CCPI)

- It is an **independent monitoring tool** for tracking countries' climate protection performance, since its inception in 2005.
- It aims to **enhance transparency in international climate politics** and enables comparison of climate protection efforts and progress made by individual countries.

- The Climate Change Performance Index is published by **Germanwatch, Climate Action Network International and the NewClimate Institute, annually.**
- The Index covers **57 countries and the EU.**
- The ranking results are defined by a country's aggregated performance in 14 indicators within the four categories
 - GHG Emission- 40%
 - Renewable Energy – 20%
 - Energy Use- 20%
 - Climate Policy- 20%

Indicators	Rank
GHG Emissions	11
Renewable Energy	26
Energy Use	9
Climate Policy	15

Findings of the CCPI 2020

- **Decreased Emissions:** Emissions decreased in 31 out of 57 High Emitting Countries. The major reason being, falling global coal consumption.
- **No Top 3 Performers:** As none of the countries assessed is already on a path compatible with Paris Climate Targets, the First Three Places of the Ranking remained unoccupied.
 - **Sweden**, with the 4th position, is the frontrunner and Denmark, with 5th position, is the best climber.
- **Only two G20 countries in Top 10:** The G20 countries, UK (7th rank) and India (9th rank) are “High” Category. Eight of the G20 countries are in the worst category of the Index (“Very Low”)
 - USA, for the first time, has replaced Saudi Arabia as the worst performing country.

India and CCPI 2020

- **Improvement in Ranking:** India's ranking improved two places, from 11th (CCPI 2019) to 9th (CCPI 2020) entering into top ten rankings for the first time.

5.6. 2019 POLLUTION AND HEALTH METRICS

Why in news?

Recently, a report titled ‘**The 2019 Pollution and Health Metrics: Global, Regional and Country Analysis**’ by the **Global Alliance on Health and Pollution (GAHP)** was released.

Key highlights of report:

- **Pollution is the largest environmental threat to health:** In 2017, pollution was responsible for 15% of all deaths globally (around 8.3 million people) and 275 million Disability Adjusted Life Years (DALY)
 - **DALY** is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death).
- The report includes **three lists** on pollution-induced deaths. **India is the only country that features in the top 10 in all three lists.**
 - Annual Premature Pollution related deaths: **India** accounts for highest number of such deaths in the world- **about 2.3 million**, followed by China with **about 1.8 million**.
 - Annual Premature Air Pollution related deaths: India is at 2nd position with 1.240 million deaths, very close to China with 1.243 million deaths.
 - Pollution deaths per 1,00,000 people: India ranks 10th with 174 deaths per 1 lakh people.
- India has seen increasing **industrial and vehicular pollution from urban growth**, while **poor sanitation and contaminated indoor air in low income communities.**

Global Alliance on Health and Pollution (GAHP)

- **GAHP is a collaborative body** made up of more than 60 members and observers that advocates for resources and solutions to pollution problems.
- It was **formed in 2012** by prominent members like World Bank, UNEP, UNDP, UNIDO, Asian Development Bank, the European Commission and more than 25 low- and middle-income countries, and non-profit agencies **to address pollution and health at scale.**
- GAHP builds public, political, technical and financial support to address pollution globally, tracks pollution impact and interventions, promotes scientific research on pollution and raises awareness on the scope and impacts of all types of pollution.

5.7. JAL JEEVAN MISSION

Why in News?

Recently, Operational Guidelines for **Jal Jeevan Mission (JJM)** were released.

The need for the mission

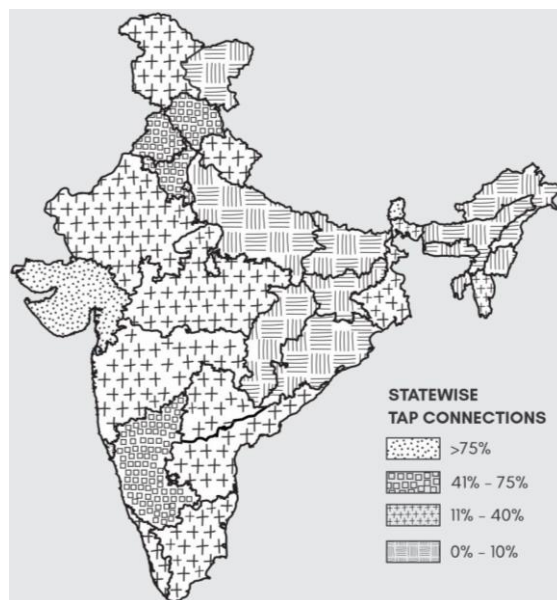
- **Poor availability of potable water:** Currently, **81.67%** of rural households do not have tap water connections.
- JJM is an upgraded version of the **National Rural Drinking Water Programme (NRDWP)** that was launched in 2009. JJM seeks to develop upon limitations of NRDWP. Problems in NRDWP:
 - **Findings of CAG on NRDWP:**
 - ✓ **Underperformance of the scheme:** only 17% of rural households were given household connections.
 - ✓ **Shortcomings in planning and delivery mechanism** as there were deviations from the programme guidelines in the planning and delivery framework established at the centre and states. E.g. 21 states had not framed water security plans.
 - ✓ Also, Deficiencies were found in the preparation and scrutiny of annual action plans.
 - ✓ **Programme implementation issues** like incomplete, abandoned and non-operational works, unproductive expenditure on equipment, non-functional sustainability structures etc.
 - ✓ **Fund management:** 10% of funds remained unused.
 - Findings of **Standing Committee on Rural Development on NRDWP:**
 - ✓ **Water quality testing laboratories:** either water testing laboratories are not setup or suffer from paucity of technical manpower, qualified personnel and equipment.
 - ✓ **Water quality in rural areas:** arsenic, fluoride, iron and nitrate contamination along with problems of salinity are increasing in a large number of rural districts.

Jal Jeevan Mission (JJM)

- JJM aims at providing Functional Household Tap Connection (FHTC) to every rural household (**Har Ghar Nal Se Jal**) by 2024.
 - **FHTC** means a tap connection to a rural household for providing drinking water in adequate **quantity** of prescribed **quality** on **regular basis**.
- **Following works are to be taken up under JJM:**
 - In-village **water supply infrastructure** for tap water connection to every household
 - Development of **reliable drinking water sources** and/or augmentation of existing sources
 - **Technological intervention** for treatment to make water potable
 - **Greywater management** (domestic non-faecal wastewater)
 - development of utilities, water quality laboratories, water quality testing & surveillance, R&D, knowledge centre, capacity building of communities, etc.
- **Community driven approach** with pivotal role to Gram Panchayats and local community. (As drinking water is in the 11th Schedule)
- **Fund sharing pattern:** 90:10 for Himalayan and North-Eastern States; 50:50 for other States and 100% for UTs.

About the guidelines

- **Planning:** Every village will have to prepare a **village action plan (VAP)**, on three components: water source and its maintenance, water supply, and grey water management.
 - Village plans will be aggregated at district level and thereafter at state level to formulate a **state action plan**. The state action plan covers projects like regional grids, bulk water supply etc. for ensuring drinking water security in the state.
- **Institutional Mechanism:**
 - **National Jal Jeevan Mission at the Central level:**
 - ✓ provides policy guidance, financial assistance and technical support, undertakes regular monitoring and necessary corrective actions.
 - **State Water and Sanitation Mission (SWSM) at State level:**
 - ✓ Finalization of State Action Plan (SAP)
 - ✓ Timely utilization of fund deciding charges for providing FHTC.
 - ✓ Support in creation of DWSMs, ensure capacity building, and its regular monitoring.
 - **District Water and Sanitation Mission (DWSM) at district level:**
 - ✓ Responsible for overall implementation of JJM.
 - ✓ Ensure preparation of Village Action Plan and finalizes a District Action Plan (DAP).



- **Gram Panchayat sub-committees i.e. Village Water Sanitation Committee (VWSC)/ Paani Samiti at village Level:**
 - ✓ Plan, design, implement, operate and maintain the in-village water supply schemes and infrastructure and decide seasonal supply hours
 - ✓ Procure construction services/ goods/ materials from agencies/ vendors as finalized by SWSM
 - ✓ Undertake social audit.
- **Implementation Support Agencies (ISAs):** NGOs/ VOs/ women SHGs/ CBOs/ Trusts/ Foundations are to be identified and empanelled by state government and engaged by SWSM/ DWSM as per the requirement.
- **Implementation:**
 - Priority to water quality affected habitations and **time bound completion** with no extension of time or cost escalation except for the cost towards retrofitting the same.
 - **Community contribution:** To bring in sense of ownership and pride, 5% capital cost contribution towards in-village water supply infrastructure in hilly, forested, and more than 50% SC/ ST dominant population villages, and 10% in the remaining villages is proposed.
 - ✓ **Also**, community would be rewarded to the tune of 10% of the capital expenditure on their respective in-village water supply scheme. This would serve as a 'revolving fund' to meet emergency repair.
 - **Operation & Maintenance (O&M):** No expenditure like electricity charges, salary of regular staff, and purchase of land, etc., will be allowed from the central share.
 - ✓ This marks shift from 'infrastructure development approach' to a '**utility-based approach**'. This will enable institutions to function as utilities and focus on drinking water supply **services** and recover **water tariffs** from all kinds of consumers.
 - **Convergence** with existing schemes such as MGNREGS to implement measures like rainwater harvesting, groundwater recharge etc.
- **Financial Planning and Funding:**
 - Incentives to good performance of states out of the fund not utilised by other states.
 - Funds released by the Centre will be transferred within 15 days of release.
 - **Extra budgetary resources** will be available for JJM, which will be allocated along with gross budgetary support to the states.
 - **Rashtriya Jal Jeevan Kosh (RJJK)** to be set up under NJJM which will serve as a receptacle for charitable contributions and CSR fund to achieve goals of JJM.
- **Technological Interventions/ Innovations:**
 - Use of emerging technologies like Artificial Intelligence, Data Analytics, block-chain technology, nano-technology
 - A **digital data platform** would be created for planning, implementation and monitoring of Jal Jeevan Mission in States/ UTs.
- **Monitoring and Evaluation** includes Third party inspection before making any payment, **functionality assessment** of the schemes etc.
- **Disaster Management:**
 - Stationing permanent **mobile water purification plants** at the nearest possible safe locations
 - Contingency plans must mention the location of sustainable water sources and the design of water supply systems.
 - Ensure upkeep of hand pumps which provide interim solution to potable water during any natural disaster like cyclones and floods.

Related News

Recently, Odisha Chief Minister launched the '**Jalsathi**' programme in the state.

- Jalsathi aims to ensure the supply of **clean drinking water** to consumers through **pipd water connections**.
- The scheme is **implemented by women volunteers** who serve as 'Jalasathis' who will act as link between consumers and the government.
- The 'Jalasathis' will be included from **Mission Shakti**.
- Earlier, the Odisha government had engaged the women self-help groups under the '**Mission Shakti**', for the collection of power dues, paddy procurement and mid-day meal preparation activities.

5.8. ATAL BHUJAL YOJANA

Why in News?

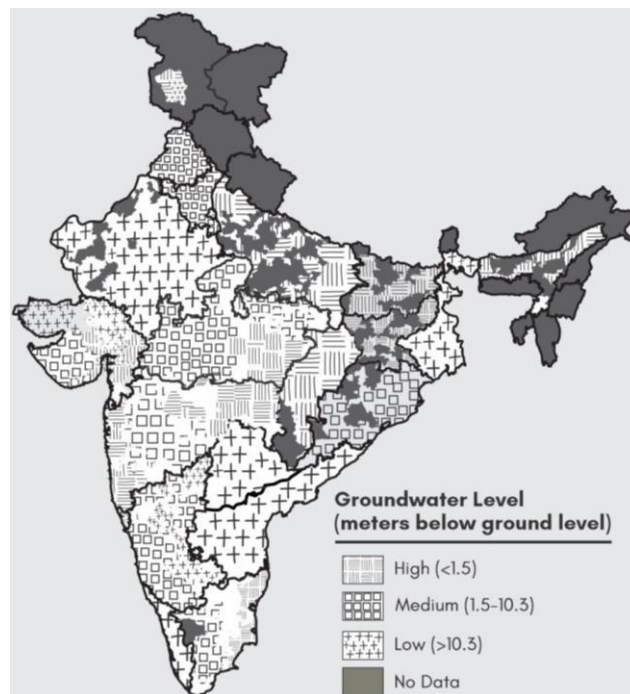
Recently, **Atal Bhujal Yojana** has been launched by **Ministry of Jal Shakti**.

About Atal Bhujal Yojana (Atal Jal)

- Atal Bhujal Yojana (ATAL JAL) is a **Central Sector Scheme**, to improve **ground water management through community participation** in identified priority areas.
- Coverage is **seven States- Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh** benefitting nearly 8350 Gram Panchayats in 78 districts.
- It is to be **implemented over a period of 5 years (2020-21 to 2024-25)**. It is **sponsored by World Bank** with 50% of the total outlay coming from it.
- Scheme components:** ATAL JAL has two major components:
 - Institutional Strengthening and Capacity Building component** including improving monitoring networks, capacity building, strengthening of Water User Associations, allocating more funds for Panchayats and making Panchayat-level plans etc.
 - Incentive Component** for incentivising the States for achievements in improved groundwater management practices like data dissemination, preparation of water security plans, water budgeting, implementation of management interventions through convergence of ongoing schemes, adopting demand side management practices etc.

Current status of ground water usage in India

- About 60% of the irrigation needs, 85% of rural drinking water needs and 50% of urban needs are met through **groundwater**.



Other important ground water statistics

- As per **Composite Water Management Index** released by NITI Aayog 21 cities including New Delhi, Chennai, Bengaluru and Hyderabad **will run out of groundwater by 2020** affecting around 100 million people.
- Composite Water Management Index 2.0** by NITI Aayog notes that:
 - Though states have **displayed overall improvement** in recharge of their groundwater resources between FY15-16 and FY17-18, the median continues to remain below 50% of the total achievable score.
 - Overall, states have failed to show any significant improvement in **on-farm water use efficiency**.
- By CWC benchmarks, a water-stressed condition happens when per capita availability is less than 1,700 cubic metres, and a water-scarcity condition when per capita availability falls below 1,000 cubic metres.

Recommendations of an **Expert committee on issue related to Groundwater Protection, Conservation and Regulation (2019)**

- Regulate the overuse of water in agriculture:**
 - by registration of inventories for borewells across the country.
 - Use of treated sewage water for agriculture should be made mandatory
 - Cultivation of water-intensive crops should be discontinued and farmers should shift to water-efficient crops like millets.
- Charging **water conservation fee** from all users for groundwater extraction.
- Identify groundwater **over-exploited areas** and **ban on extraction of groundwater for new/expansion projects** there except for drinking purposes.
- The committee proposed a **50-year-plan** which includes:
 - Establishing 2.5 lakh groundwater monitoring stations
 - Assessment of saline groundwater resources, plan to prevent seawater ingress
 - Use of artificial intelligence for ground water study and management
 - Look at finding fresh groundwater in offshore areas and consider studying groundwater microbiology.
 - Develop a methodology for drought alert based on groundwater levels
 - Study of transboundary aquifers

- According to **Water and Related Statistics 2019**, the annual replenishable groundwater resources in India (2017) are 432 BCM, out of which 393 BCM is the annual “extractable” groundwater availability. The current annual groundwater extraction is 249 BCM (around 63%).
- In decadal average for 2009-18, there has been a **decline in the groundwater level** in 61% of wells monitored by the Central Ground Water Board (CGWB) (see picture).
 - Moreover, even when water is available, it is likely to be contaminated (up to **70 per cent of our water supply is contaminated**).
- **Faulty cropping pattern:** As per the ‘Dynamic Groundwater Resources of India 2017’, **90% of ground water extracted is used in irrigation sector** followed by domestic use and industrial use (9.8%).
- **Increasing population and hence demand:** According to the Central Water Commission (CWC), per capita availability in the country will decrease from 1,434 cubic metres in 2025 to 1,219 cubic metres in 2050.
- According to a 2017 **CAG report** on working of the **National Rural Drinking Water Programme (NRDWP)**, there was inadequate focus on surface water-based schemes and 98% of the schemes, including piped water schemes continued to be based on ground water resources.
- The numbers of **over-exploited units** has increased to 1,186 in 2017, from 839 in 2004.
- **National Water Policy, 2012** has laid emphasis on periodic assessment of ground water resources on scientific basis.

5.9. ENVIRONMENTAL MIGRATION

Why in news?

Recently, various studies have pointed out that disasters due to climate change have been displacing more people than conflicts.

More on the news

- According to Global Report on Internal Displacement (GRID, 2019), in 2018, of the total **new 28 million internally displaced people** in 148 countries, 61% were due to disasters. In comparison, 39% were due to conflict and violence.
- As per the estimates, climate change resulted in the displacement of 2.7 million Indians in 2019.

About Environmental Migrants

- According to **International Organization for Migration (IOM)**, **Environmental migrants** are persons or groups of persons who, predominantly for reasons of **sudden or progressive change in the environment that adversely affects their lives or living conditions**, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad.
- According to **Internal Displacement Monitoring Centre (IDMC)**, every year since 2008, an average of 26.4 million persons around the world have been forcibly displaced by floods, windstorms, earthquakes or droughts.
 - In 2019, 1.6 million people displaced by disasters were still in camps or places out of their homes.
 - At 2.7 million people, **India had the highest number of people displaced by disasters** and extreme weather events in 2018.
- The United Nations High Commissioner for Refugees (**UNHCR**) predicts that in the next 50 years between **250 million and 1 billion** humans will leave their homes because of climate change.
 - According to an UN Office for Disaster Risk Reduction (**formerly known as UNISDR**) report in 2017, India has been ranked as the **world's most disaster-prone country** for displacement of residents.

Environmental Refugees

Environmental Refugee is a specific term which covers only cross-border migrants forced to do so due to environmental factors. It has **not been defined till date**.

UN Refugee Convention (1951)

- It grants certain rights to people fleeing persecution because of race, religion, nationality, affiliation to a particular social group, or political opinion.
- **Cross-border displaced** who have migrated due to climate change are not recognised as refugees under the **1951 Refugee Convention or its 1967 protocol**, and thus do not qualify for protection under national or international legal frameworks for refugee protection.

How is climate change expected to affect the movement of people?

- Greater frequency and, potentially, greater intensity of weather-related natural disasters – both sudden- and slow-onset – may lead to **higher risk of humanitarian emergencies** and increased population movements.
- The adverse consequences of warming, climate variability and of other effects of climate change on livelihoods, health, food security and water availability are likely to **exacerbate pre-existing vulnerabilities**.
 - When household income in rural areas decreases, livelihood stress linked to climate change could, in some places, result in lower levels of outmigration. As migration requires resources, those people wanting to move but could not due to lack of resources become **trapped populations**.
- **Rising sea levels** may make coastal areas and low-lying islands uninhabitable.
- **Competition over shrinking natural resources** may exacerbate tensions and potentially lead to conflict and, in turn, to displacement.

Challenges with Environmental/ Climate Migrants and Climate Refugees

Terms such as climate migrant and climate refugees are used interchangeably, however they are not the same. "Environmental refugee" or "climate change refugee" have **no legal basis** in international refugee law. These terms are misleading and could potentially undermine the international legal regime for the protection of refugees. There are following challenges associated with defining a climate migrant or according climate refugee status-

- **Climate migration is mainly internal:** when migration is internal, people moving are under the responsibility of their own state, they do not cross borders and are not seeking protection from a third country or at the international level.
- **Migration is not necessarily forced**, especially for very slow onset processes migration is still a matter of choice, even if constrained, so countries need to think first migration management and agreements rather than refugee protection.
- **Isolating environment/climatic reasons is difficult**, from humanitarian, political, social, conflict or economic ones. It can sometimes be an impossible task and may lead to long and unrealistic legal procedures.
- **Creating a special refugee status** for climate change related reasons might unfortunately have the opposite effects of what is sought as a solution: **it can lead to the exclusion of categories of people who are in need of protection**, especially the poorest migrants who move because of a mix of factors and would not be able to prove the link to climate and environmental factors.
- **Opening the 1951 Refugee Convention might weaken the refugee status** which would be tragic given so many people are in need of protection because of persecution and ongoing conflicts.
- Moreover, **creating a new convention** to recognise the climate migrants and refugees might be **a lengthy political process** and countries might not be ready for it.

Way Forward

- **Climate migration discussions should not lose their focus on preventive measures:** The key objective is to invest in climate and environmental solutions so that people will not have to leave their homes in a forced way in the future. The **Paris Agreement offers anchorage for climate action** that considers human mobility to avert, minimize and address displacement in the context of climate change.
- **Full use of all already existing bodies of laws and instruments**, both hard and soft law in humanitarian, human rights and refugee law, instruments on internal displacement, disaster management, legal migration and others. Many responses can come from migration management and policy as highlighted already in the 2011 International Dialogue on Migration and the recently adopted Global Compact for Safe, Orderly and Regular Migration.
- **Human rights-based approaches are key for addressing climate migration:** States of origin bear the primary responsibility for their citizens' protection even if indeed their countries have not been the main contributors to global warming; they should therefore apply human rights-based approaches for their citizens moving because of environmental or climatic drivers.
- **Regular migration pathways** can provide relevant protection for climate migrants and facilitate migration strategies in response to environmental factors. Many migration management solutions can provide a status for people who move in the context of climate change impacts, such as humanitarian visas, temporary protection, authorization to stay, regional and bilateral free movements' agreements, among several others.

International Conventions on Environmental Migrants

- **New York Declaration for Refugees and Migrants, UNHCR (2016):** It seeks to protect the human rights of all refugees and migrants, regardless of their status.
- **The Global Compact on safe, orderly and regular migration, 2018:** It is the first-ever UN global agreement on a common approach to international migration in all its dimensions. 'Climate refugees', migrants who move due to natural disasters and climate change, are now recognised under its Objective.
- **The Peninsula Principles on Climate Displacement Within States (2013):** The Principles provide a comprehensive normative framework, based on principles of international law, human rights obligations and good practice, within which the rights of climate displaced persons within States can be addressed.
- **Nansen Initiative Protection Agenda for Cross-Border Displaced Persons (2015):** It's a state-led consultative process to build consensus on a protection agenda addressing the needs of people displaced across borders in the context of disasters and the effects of climate change.
- **Platform on Disaster Displacement (2016):** It was launched to implement the recommendations of the **Nansen Initiative Protection Agenda**.
- **Climate Migrants and Refugees Project:** It aims to spread the word about this challenge, its potential impacts, and to seek out solutions and connections that will help the people most threatened by climate change live safe, dignified, and prosperous lives.

Related News- Global Refugee Forum

- Recently, first **Global Refugee Forum (GRF)**, a gathering of United Nations member states, was held in Geneva, Switzerland.
- The GRF is jointly hosted by the United Nations High Commissioner for Refugees (UNHCR), the UN Refugee Agency, and the government of Switzerland.
- The Forum is an occasion for the international community to advance the objectives of the **Global Compact on Refugees by mobilizing political will, broadening the base of support, and implementing arrangements that facilitate more equitable, sustained, and predictable responsibility-sharing.**
- The **first GRF had six key areas of focus:** burden- and responsibility-sharing, education, jobs and livelihoods, energy and infrastructure, solutions, and protection capacity.
- The Forum also featured the **launch of Support Platforms to reinforce three regional refugee responses**, namely the in **Central America and Mexico**, the Nairobi Process in **the East and Horn of Africa**, and the Solutions Strategy for **Afghan Refugees**.

5.10. URBAN FIRES

Why in news?

Recently, there was a factory fire in North Delhi's Anaj Mandi area that killed 43 people.

About Urban Fire

- Urban fire occurs in cities or towns with the potential to rapidly spread to adjoining structures. These fires damage and destroy homes, schools, commercial buildings and vehicles.
- According to National Crime Records Bureau figures, 17,700 Indians died – 48 people every day – due to fire accidents in 2015.

Fire safety regulations in India

- Fire service is a state subject and comes under the Twelfth Schedule of the Constitution of India, under the provisions of **Article 243W** of the Constitution.
- The **National Building Code (NBC)** is the basic model code in India on matters relating to building construction and fire safety.
- Bureau of Indian Standards has formulated more than 150 standards on fire safety in buildings and firefighting equipment & systems.

NBC guidelines related to Fire safety.

The Part 4 (Fire and Life Safety) of NBC contains the fire safety norms through detailed provisions on fire prevention, life safety and fire protection.

- It gives guidance by specifying the standards for construction, plumbing, active and passive fire protection systems etc.
- It mentions the restrictions on buildings in each fire zone and classifies height-width parameters
- It provides for other restrictions and requirements necessary to minimise danger to life from fire, smoke, fumes or panic before the building can be evacuated.

- As per **The Model Building ByeLaws, 2003**:
 - The Chief Fire Officer issues the '**No Objection Certificate**' from the view point of fire safety and means of escape.
 - This is done after ensuring that all the fire protection measures have been implemented and are functional as per approved plans.

Reasons for Urban Fires

- **Unplanned urban growth and high congestion**: With rise in population residential and commercial buildings are witnessing expansion and densification over time.
- **Poor compliance of norms**: Issues such as non-compliant construction; lack of precautionary maintenance like the upkeep of extinguishers, fire doors, fire exits and their markings and assembly areas are common.
- **Lack of adequate resources** with the municipal corporations and local bodies which are responsible for providing fire services in many states.
- **Lack of manpower** for inspection as well as lack of investment in modern technology has made it difficult to track vulnerable zones.
- **Low awareness** among public regarding fire safety.

Measures needed to tackle Urban fire

- **Enactment of a Fire Act in every state**: It is of utmost importance that every state enacts its own Fire Act so that fire vulnerabilities in the state are adequately dealt with and unacceptable loss of life and property is prevented.
 - Through a legislation, cities should reserve physical spaces for fire stations, fire hydrants, and fire lanes/parking spots.
- **Preparation of a comprehensive plan**: Every state is to prepare a complete plan and work out the total requirements of manpower and equipment for the entire state. There is a need to upgrade fire services delivery capacity of local bodies by:
 - Providing them adequate funds
 - Recruitment and training of workers to check non-compliant constructions and for dispersal of NOCs in a timely manner.
- **Adopting modern technologies**: Investing in technologies such as **LIDAR** (Light Detection and Ranging) based technologies to aerially track the fire.
- **Fire safety audits**: It can be made mandatory via Third Party Agencies.
- **Awareness**: Building awareness among citizens about fire prevention and protection measures is also of paramount importance.
 - Organising **firefighting workshop** once in six months in localities/mohallas/schools with the involvement of local councillor/elected representatives is one way to achieve awareness.

6. SOCIAL ISSUES

6.1. HUMAN DEVELOPMENT REPORT 2019

Why in News?

The 2019 Human Development Report “**Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century**”, was released.

Key Findings of the report

The report highlighted 5 key messages:

- **Disparities in human development remain widespread**, despite achievements in reducing extreme deprivations. E.g.
 - The difference in life expectancy at birth between low and very high human development countries is still 19 years.
 - Some 42 percent of adults in low human development countries have a primary education, compared with 94 percent in very high human development countries.
- A **new generation of inequalities** is emerging, with divergence in **enhanced capabilities** despite convergence in basic capabilities:
 - Inequalities for some basic capabilities are slowly narrowing across most countries, E.g. Life expectancy at birth, percentage of the population with a primary education are narrowing across human development groups.
 - In contrast, inequalities in **enhanced capabilities** like access to more advanced knowledge and technology are widening.
 - ✓ E.g. the proportion of the **adult population with tertiary education is growing more than six times faster** in very high human development countries than in low human development countries, and fixed broadband subscriptions are growing 15 times faster.
 - These inequalities will likely determine people’s ability to seize the opportunities of the 21st century, function in a knowledge economy and cope with climate change.
- **Inequalities accumulate through life**, often reflecting deep power imbalances:
 - **Inequalities can start before birth**, and many of the gaps may compound over a person’s life. E.g. figure shows the relation among health, education and parents’ socioeconomic status, because of which inequalities across generations can persist. So, the policies shall focus on breaking the cycle.
 - Income and wealth inequalities are often **translated into political inequality and power asymmetries** among various groups (which may be defined by ethnicity, language, gender or caste etc.) potentially leading to even more inequalities and even lead to breakdowns in institutional functions, weakening the effectiveness of policies.
 - ✓ E.g. in many countries women and men vote equally in elections, there are differences in higher levels of political power (90 percent of heads of state and government are men.)

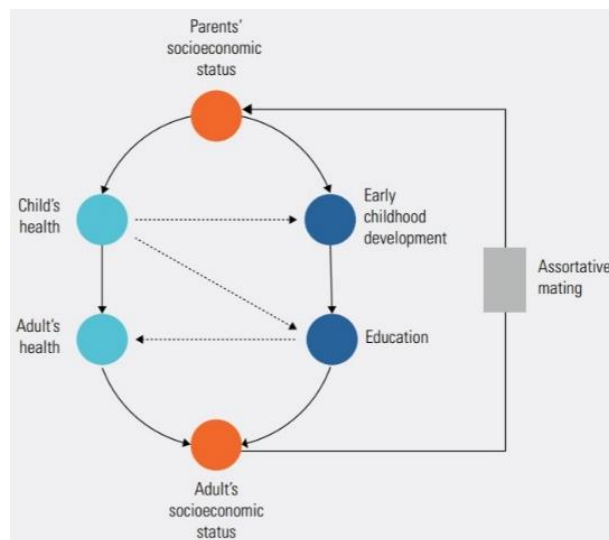
About the Human Development Report

- The Human Development Report was released for the first time in the year 1990, by the **United Nations Development Programme (UNDP)**.
- The Human Development Report Office releases five composite indices each year: **Human Development Index (HDI)**, the **Inequality-Adjusted Human Development Index (IHDI)**, the **Gender Development Index (GDI)**, the **Gender Inequality Index (GII)**, and the **Multidimensional Poverty Index (MPI)**.
- Human Development Index (HDI) is released as part of first Human Development Report. This measures achievement in the basic dimensions of human development across countries. The **HDI ranks countries on the basis of three parameter**:
 - Life expectancy
 - Education
 - Per capita income

Beyond income, beyond averages and beyond today

- The Report looks at inequalities by going beyond income, beyond averages and beyond today.
- **Beyond income**: Assessment of inequality must go beyond income and wealth and also consider inequalities in key elements of human development such as health, education, dignity and respect for human rights.
- **Beyond averages**: Averages based on summary measures of inequality and incomplete data provide a partial—sometimes misleading—picture about inequality. The analysis must go beyond averages and look at the ways inequality plays out across an entire population, in different places and over time.
- **Beyond today** analysing factors that will shape inequality in the future. E.g. Climate change and technological transformations, both are creating the spectre of an uncertain future.

- Assessing and responding to inequalities in human development demands **a revolution in metrics**:
 - To fill the data gaps to measure the different inequalities (among groups, households etc.) and, to go systematically beyond averages, new standards and practices for measuring inequality are needed.
- The **inequalities can be addressed if we act now**, before imbalances in economic power are politically entrenched:
 - Policies should span across the **premarket, in-market and postmarket** policies.
 - ✓ **Premarket policies** include measures to reduce disparities in capabilities, helping everyone enter the labour market better equipped.
 - ✓ **In-market policies** include wages, profits and labour participation rates.
 - ✓ **Postmarket policies** e.g. taxes on market income to fund health and education.



Other highlights of the report

- Inequality and the climate crisis are interwoven.** E.g.
 - Developing countries and **poor communities have less capacity** than their richer counterparts to adapt to climate change and severe weather events.
 - Also, High income inequality within countries **can hinder the diffusion** of new environmentally friendly technology.
 - Inequality can also **influence the balance of power** among those arguing for and against curbing carbon emissions.
- Policymakers can shape the **direction of technological change** in ways that enhance human development. For instance, artificial intelligence might replace tasks performed by people, but it can also reinstate demand for labour by creating new tasks for humans, leading to a net positive effect that can reduce inequalities.

Findings with respect to India

- India ranks **129 out of 189 countries** on the 2019 Human Development Index (HDI). This is an **improvement** from 130th position last year.
- The overall index, given in the 2019 HDI report of UNDP, showed that **India scored 0.647 in 2018**, as against 0.643 in the previous year. India's HDI value **increased by 50 per cent (from 0.431 to 0.647) from 1990 to 2018**.
- In India, between 1990 and 2018, **life expectancy at birth increased by 11.6 years, mean years of schooling increased by 3.5 years and expected years of schooling increased by 4.7 years**. Per capita incomes rose by over 250 per cent.
- India is only marginally better** than the South Asian average on the **gender development index (0.829 versus 0.828)**, and ranks at a **low 122 of 162 countries** on the 2018 gender inequality index.

Report highlighted following challenges persisting in India

- Poverty:** Despite lifting 271 million people out of poverty between 2005-15, India still remains **home to 28 per cent of the world's poor**, as per the Human Development Report. Though severe poverty is less, vulnerability towards poverty is quite high.
- Group-based inequalities:** As per the report, group-based inequalities based on gender, identity etc. persist on the Indian Subcontinent.
- Smaller Incomes:** While unemployment is under control in India, smaller incomes have resulted in a higher dominance of working poor, lower share of skilled workforce and lack of old-age security.
- Education:** In terms of Education, inequality in India is more than that in the South Asian region and the world. Indian girls attend school for a shorter period than the regional average.
- Income Inequality:** Women earn about a fifth of the income earned by men in India, a ratio which is near to 0.5 for the world.

6.2. SDG INDIA INDEX 2019

Why in News?

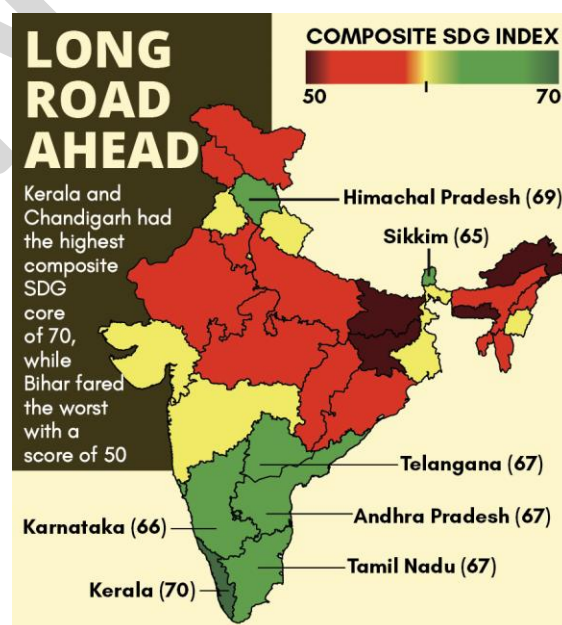
NITI Aayog released the **second edition of the Sustainable Development Goals (SDG) India Index.**

SDG India Index

- **NITI Aayog** has developed the SDG India Index in collaboration with the **Ministry of Statistics & Programme Implementation (MoSPI), Global Green Growth Institute and United Nations.**
- It **comprehensively documents the progress** made by India's States and Union Territories **towards achieving the 2030 SDG targets.**
- It functions as a **tool for focused policy dialogue, formulation and implementation**, and moving towards development action pegged to globally recognizable metrics.
- It also helps in **highlighting crucial gaps related to monitoring SDGs** and the need for improving statistical systems at the National/State/UT levels.
- **UN** has developed **232 indicators** to measure compliance by member nations while **NITI Aayog** has adapted the monitoring approach to the Indian context, with **100 indicators** of its own for the Index which are drawn from MoSPI's **National Indicator Framework (NIF).**
 - **NIF consists of 306 indicators** for monitoring the progress of SDGs.
- SDG India Index 2019 is **more robust than the first edition** as the Index spans 16 out of 17 SDGs with a qualitative assessment on Goal 17, while 2018 Index covered only 13 goals.
- A **composite score was computed in the range of 0–100** for each State/UT based on its aggregate performance across 16 SDGs.
- The **higher the score of a State/UT, the closer it is towards achieving the targets.**
- **Classification criteria based on SDG India Index score** is as follows: Aspirant: 0 – 49, Performer: 50 – 64, Front Runner: 65 – 99 and Achiever: 100.

Highlights of the Index

- India's composite score has **improved from 57 in 2018 to 60 in 2019.** All the States/UTs are either in Performer or Front Runner category.
- **Kerala achieved the first rank** with a score of 70, followed by **Himachal Pradesh** at 69. Andhra Pradesh, Telangana, and Tamil Nadu ranked at the third position with the score of 67.
- **Bihar with a score of 50 is the worst performer.**
- **The biggest improvers since 2018** are UP (which has moved from the 29th position to the 23rd), Orissa (23rd to 15th), and Sikkim (15th to 7th).
- The **maximum gains been made in** Goals 6 (clean water and sanitation), 9 (industry, innovation, and infrastructure) and 7 (affordable and clean energy).
- **However, nutrition and gender equality continue to be problem areas** for India, requiring a more focused approach from the government.
- All three states that were in the 'Aspirant' category - Uttar Pradesh, Bihar and Assam - have graduated to the 'Performer' category.
- Five states - Andhra Pradesh, Telangana, Karnataka, Goa, and Sikkim - moved up from the 'Performer' category to the 'Front Runner' category.



6.3. GLOBAL GENDER GAP REPORT 2020

Why in News?

Recently, World Economic Forum released Global Gender Gap Report, 2020.

About the report

- The Global Gender Gap Index was first introduced by the World Economic Forum in 2006 as a **framework for capturing the magnitude of gender-based disparities and tracking their progress over time**.
- Global Gender Gap Report, 2020 benchmarks 153 countries on their progress towards gender parity across **four thematic dimensions**:
 - Economic Participation and Opportunity
 - Educational Attainment
 - Health and Survival, and
 - Political Empowerment.
- In addition, this year's report examines gender gap prospects in the professions of the future.

Key Findings

- Gender Parity:** World has closed 68.6% of its gender gap and at the current rate of change, it will take 99.5 years to close the overall gender gap. This is a marked improvement on the 108 years in the 2018 index.
- Sectoral Performance:**
 - Political Empowerment:** It has the largest gender disparity with women in 2019 holding just 25.2% of parliamentary (lower-house) seats and 21.2% of ministerial positions.
 - ✓ But it is also the most improved dimension this year and has driven the overall positive performance.
 - ✓ This can be attributed to the **"Role model effect"** which may be reaping dividends in terms of leadership and wages.
 - Economic Participation and Opportunity:** It has the second-largest gap. It is the only dimension where progress has regressed. At this rate it will take **257 years** to close this gap. The report highlights three primary reasons for this:
 - ✓ **Automation:** women have greater representation in roles that are being automated.
 - ✓ **Less representation in technology-driven profession:** Not enough women are entering technology-driven profession where wage growth has been the most pronounced. As a result, women in work too often find themselves in middle-low wage categories that have been stagnant since the financial crisis 10 years ago.
 - ✓ **Perennial factors:** Women spend at least twice as much time on care and voluntary work in every country where data is available, and lack of access to capital prevents women from pursuing entrepreneurial activity.
- Educational Attainment and Health and Survival:** Progress in bridging both of these gaps are more advanced. Gender parity in the Health and survival gender gap has been already fully achieved in 40 countries.

Performance of India:

- India **slipped four places to 112th rank** and has closed two-thirds of its overall gender gap (score of 66.8%).
- While India has **improved in political empowerment, it has fallen in other three indicators**.
- India is the only country among the 153 countries studied where the economic gender gap is larger than the political one.
- Only one-third of the Economic gap has been bridged. This can be attributed to below facts-
 - Only one-quarter of women, compared with 82% of men, engage actively in the labour market.
 - The female estimated earned income is mere one-fifth of the male income (among the world's lowest).
 - Women representation on company boards is also very low (13.8%).

World Economic Forum

- It was established in 1971 as a not-for-profit foundation and is headquartered in **Geneva, Switzerland**.
- It is the International Organization for Public-Private Cooperation and the Forum engages the foremost political, business and other leaders of society to shape global, regional and industry agendas.

BANGLADESH TOPS THE SUBCONTINENT ON GENDER EQUALITY

Overall Gender Gap Index

Global Top 5		India and its neighbours		
	Score	Rank	Country	Score
Iceland	0.877	50	Bangladesh	0.726
Norway	0.842	89	China	0.676
Finland	0.832	101	Nepal	0.68
Sweden	0.82	102	Sri Lanka	0.68
Nicaragua	0.804	112	India	0.668
		131	Bhutan	0.635
		151	Pakistan	0.564





99.5 years | Time to close overall gender gap in scenario as assessed by 2020 Gender Gap report. This is almost 10 years less than that measured in the last edition

Sub Index	India rank
Political Empowerment	18
Health and survival	150
Educational Attainment	112
Economic participation and opportunity	149

- Widening of Health and survival gap is mainly due to **abnormally low sex ratios at birth** in India (91 girls for every 100 boys), violence against women, forced marriages and discrimination in access to health.
- The trend is more positive in terms of gender gaps in education.
 - From primary to tertiary education, the share of women attending school is systematically larger than the share of men.
 - However only 66% of women are literate compared with 82% of men.

The Future of Gender Parity

- The greatest challenge preventing the economic gender gap from closing is women's under-representation in emerging roles.
 - Report finds that even in countries where education attainment is relatively high, women's skills are not always in line with those required to succeed in the professions of the future like AI, engineering and cloud computing.
 - In cloud computing, just 12% of professionals are women. Similarly, in engineering and Data and AI, the numbers are 15% and 26% respectively.
- To address these deficiencies the report suggests:
 - **Workforce strategies** to ensure that women are better equipped (in terms of improved skills or reskilling) to deal with the challenges and take advantage of the opportunities of the Fourth Industrial Revolution.
 - **Diverse hiring** to address the current situation that sees gender parity in an in-demand skillset but not equal representation.
 - Creating **inclusive work cultures**.

6.4. UNIVERSAL HEALTH COVERAGE

Why in news?

Recently United Nations General Assembly held a high-level meeting on universal health coverage (UHC).

More in News

- The UN High-level Meeting on UHC is the first meeting on this topic at the UN.
- It aims to mobilize the global community and secure political commitment from Heads of State and Government to accelerate progress toward achieving UHC by 2030.
 - As part of the **2030 Agenda for Sustainable Development**, all countries have committed to try to achieve UHC by 2030.

What is Universal health coverage (UHC)?

- Universal health coverage (UHC) is about ensuring that people have access to the health care they need without suffering financial hardship. UHC embodies three related objectives:
 - **Equity in access to health services** - everyone who needs services should get them, not only those who can pay for them;
 - **The quality of health services** should be good enough to improve the health of those receiving services; and
 - **People should be protected against financial-risk**, ensuring that the cost of using services does not put people at risk of financial harm.
- It is a catalyst for socio-economic development and a key **contributor to equity, social justice inclusive economic growth and ending extreme poverty**.
- It delivers on the **human right to health as well as the broader human rights agenda**.
- It has an **important impact on other SDGs**. For example, Goal 1 (end poverty), Goal 4 (quality education), Goal 5 (gender equality), Goal 8 (decent work and economic growth), Goal 9 (infrastructure), Goal 10 (reduce inequality), Goal 16 (justice and peace), and Goal 17 (partnerships).

Key barriers to UHC achievement

- Lack of public expenditure
- Poor infrastructures and availability of basic amenities.

- Out of pocket payments and high expenditures.
- Shortages and maldistribution of qualified health workers.
- Prohibitively expensive good quality medicines and medical products.
- Low access to digital health and innovative technologies etc.

How to achieve UHC?

- **Implementation research:** Implementation research is an integrated concept that links research and practice to accelerate the development and delivery of public health approaches. Expanding the use of well-designed implementation research would contribute to more effective public health and clinical policies and programmes.
- **Strengthening legislative and regulatory frameworks** as well as institutions to promote policy coherence for the achievement of universal health coverage.
- **Encouraging people's engagement**, particularly of women and girls, families and communities, and the inclusion of all relevant stakeholders.
- **Training, building and retaining a skilled health workforce**, including nurses, midwives and community health workers.
- **Prioritizing health promotion and disease prevention**, through public health policies, good governance of health systems, education, health communication and health literacy.
- **Strengthening health information systems** and collect quality, timely and reliable data, including vital statistics.
- **Optimizing budgetary allocations** on health with priority to health in public spending.
- **Increasing transparency of prices** of medicines, vaccines, medical devices, diagnostics, assistive products and other health technologies across the value chain.
- **Taking multisectoral action** to promote active and healthy lifestyles, including physical activity, access to safe drinking water and sanitation, sufficient and nutritious food etc.

India's Steps towards UHC

- **National Health Policy 2017** proposes to raise public health expenditure to 2.5% of the GDP by 2025. It also seeks to strengthen health infrastructure and human resource.
- India has taken a holistic approach towards UHC and is working on four main pillars of healthcare:
 - **Affordable Healthcare-**
 - ✓ Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana (PMJAY) will provide a cover of up to Rs. 5 lakhs per family per year, for secondary and tertiary care hospitalization.
 - ✓ Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) was launched to provide quality medicines at affordable prices to the masses "Jan Aushadhi Medical Store"
 - **Preventive Healthcare-**
 - ✓ Health and Wellness Centers (HWCs) at the primary level under Ayushman Bharat is a progression towards promotive, preventive, curative, palliative and rehabilitative aspects of Universal Healthcare.
 - ✓ Special emphasis on Yoga, Ayurveda and Fitness and building more than 125,000 wellness centers have helped to promote preventive healthcare, helping in controlling life style diseases such as diabetes, blood pressure, depression etc.
 - ✓ Steps like banning of e-cigarettes, greater awareness through Clean India campaign and immunization campaigns for preventive healthcare.
 - **Improvements on the supply side-**
 - ✓ The **National Nutrition Mission** to improve nutritional status of mother and child.
 - ✓ **Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)-** Setting up of AIIMS like Institutions and Upgradation of Government Medical College Institutions.
 - **Implementation in mission mode-** For e.g. National Strategic Plan for TB Elimination has set a target of 2025 for TB elimination.

6.5. MAINTENANCE AND WELFARE OF PARENTS AND SENIOR CITIZENS (AMENDMENT) BILL, 2019

Why in news?

Recently, the bill was introduced in Lok Sabha and has been referred to the Standing Committee.

Background

- Government declared the **National Policy on Older Persons in 1999**. It recognized certain rights of the aged, while pledging the government's responsibility towards providing economic and social security along with healthcare and protection of life and property of the aged people.
- Strong demand pressure from different NGOs on the government regarding the policy implementation through legislation led to the passing of **Maintenance and Welfare of Parents and Senior Citizens Act, 2007**.

Need for amendment in the Act

- **Breakdown of traditional support structures:** As families become increasingly nuclear and with the gradual breakdown of joint family system in the society, number of cases of neglect, crime, exploitation and abandonment of parents and senior citizens are on the rise.
 - As per a report by the National Crime Records Bureau in 2018, **crimes against the senior citizen rose by 13.7% from 2016 to 2018**.
- **Large Elderly population:** In India, the population of the aged (60+) has increased from nearly 2 crore in 1951 to **10.4 crore as per 2011 census (nearly 8.5% of the total population)**. As per UNESCO estimates, the number of aged is **likely to double by 2025**.
- **Conditions of old-age homes and unaffordable healthcare services:** Conditions of existing old age homes are pitiful, and affordable healthcare, including specialized geriatric facilities in hospitals, remains out of reach. Also, they **cannot be a sustainable substitute** for family-based care
- **Violation of constitutional provisions:** For example, denial of basic human rights (such as lack of medical care, food, shelter and other basis facilities) for the aged is violation of their fundamental right to life and liberty guaranteed under Article 21 of the Constitution.
- **Orders by the courts:** Supreme Court and Various High Courts have also issued orders directing the Government to review provisions of the Act.

Key amendments brought by the bill

Bill seeks to **amend the Maintenance and Welfare of Parents and Senior Citizens Act, 2007**.

- **Definitions:** The bill expands the definition of the following:
 - **Children:** to include step-children, adoptive children, children-in-laws, and the legal guardian of minor children.
 - **Parents:** to include parent-in-laws, and grandparents.
 - **Relative:** to include minors represented by their legal guardians.
 - **Maintenance:** to include the provision of healthcare, safety, and security for parents and senior citizens to lead a life of dignity.
 - **Welfare:** to include the provision of housing, clothing, safety, and other amenities necessary for the physical and mental well-being of seniors.
- **Maintenance orders:** The Bill removes the upper limit on the maintenance fee which is Rs. 10,000 in the Act. Fixation of the amount by a Tribunal will depend on: (i) the standard of living and earnings of the parent or senior citizen, and (ii) the earnings of the children.
 - **The bill also reduced the number of days** to deposit the maintenance amount to 15 days from earlier 30 days.
- **Appeals:** The Bill allows children and relatives also to appeal decisions of the Tribunal.

Schemes by the Government for welfare of Senior Citizens

- **Integrated Programme for Older Persons (IPOP)** to improve the quality of life of older persons by providing basic amenities like shelter, food, medical care and entertainment opportunities, etc.
- **Rashtriya Vayoshri Yojana (RVY)** under which aids and assistive living devices are provided to senior citizens belonging to BPL category who suffer from age-related disabilities such as low vision, hearing impairment etc.
- **Indira Gandhi National Old Age Pension Scheme (IGNOAPS)** under which financial assistance is provided to person of 60 years and above and belonging to BPL family.
- **Varishtha Pension Bima Yojana (VPBY)** to give an assured minimum pension on a guaranteed minimum return on the subscription amount.
- **Pradhan Mantri Vaya Vandana Yojana** to provide social security during old age. This is a simplified version of the VPBY and is implemented by the Life Insurance Corporation (LIC) of India.
- **Vayoshreshtha Samman** conferred as a National award, and given to eminent senior citizens & institutions under various categories for their contributions on International day of older persons.

- **Offences and penalties:** The Bill increases the penalty to imprisonment between three and six months, or fine of up to Rs 10,000, or both. It also provides that if the children or relatives fail to comply with the maintenance order, a Tribunal may issue a warrant to levy the due amount.
- **Maintenance officer:** Maintenance officers designated to: (i) ensure compliance with orders on maintenance payments, and (ii) act as a liaison for parents or senior citizens.
- **Establishment of care-homes:**
 - Senior citizen care homes and Multi-Service Day Care Centre for Senior Citizens in place of Old age homes which may be set up by government or private organisations and registered by the state government.
 - The central government will prescribe minimum standards for these homes, such as food, infrastructure, and medical facilities.
- **Healthcare:** All hospitals, including private hospitals, to provide facilities (such as separate queues, beds, and facilities for geriatric patients) for senior citizens. Further, homecare facilities will be provided for senior citizens with disabilities.
- **Protection and welfare measures:**
 - Every police station to have at least one officer, not below the rank of Assistant Sub-Inspector, to deal with issues related to parents and senior citizens.
 - State governments must constitute a special police unit for senior citizens in every district to be headed by a police officer not below the rank of Deputy Superintendent of Police.

Issues with the bill

- **No focus on mental issues:** Bill does not focus on issues of depression, dementia and Alzheimer among older adults in India. As per a report by the Agewell Foundation in 2017-'18, one in every two elderly people suffer from loneliness leading to depression and other mental issues.
- **Feminisation of elderly not addressed:** As per census data, the sex ratio of the elderly has increased from 938 women to 1,000 men in 1971 to 1,033 in 2011 with predominance of widowed and highly dependent very old women. Bill has no provisions to deal with problems and special needs of such old women.
- **No provision to increase awareness:** 55% senior citizens do not know that they can take their children or next of kin to court for negligence and exploitation.
- **Issues with senior care homes:** Most senior care homes follow the format of pay and stay. Elderly people with no relatives and no income or savings have no place to go.

Suggestions

- **Formulating policies to retain or hire senior workers** in the organisation to use their knowledge and experience.
- **Promoting old age education** to make old age people more aware, empowered and self sufficient as the literacy rate among elderly is around 35% only.
- **Emulating the community-based care and health services** found under the United Kingdom's National Health Service.
- **Banks may devise special credit schemes** for the retired to begin small businesses thus making them economically secure.
- **Government needs to provide** some free old age homes for deprived and poor senior citizens.
- **Improving the perception of old age homes** in order to make them place of choice rather than the place of last resort.

6.6. MENTAL HEALTH

Why in news?

Recently, the **first comprehensive estimates of disease burden attributable to mental health** was prepared by the **India State-Level Disease Burden Initiative** and published in the *Lancet Psychiatry*.

More on the news

- The report titled "**The burden of mental disorders across the states of India: the Global Burden of Disease Study 1990-2017**" describes the prevalence and disease burden of each mental disorder for the states of India, from 1990 to 2017.

- The **India State-level Disease Burden Initiative** was launched in 2015 to address crucial knowledge gaps in local health status and trends with support from the Ministry of Health and Family Welfare.
 - It is a collaborative effort between the Indian Council of Medical Research, Public Health Foundation of India, Institute for Health Metrics and Evaluation, and experts and stakeholders from about 100 institutions across India.

Findings of the study

- **Large number of cases:** In 2017, there were 197.3 million people with mental disorders in India, comprising 14.3% of the total population of the country. (One among every seven people in India had a mental disorder, ranging from mild to severe.)
- **Contribution to total disease burden:** Mental disorders contributed 4.7% of the total disability adjusted life years (DALYs) in India in 2017, compared with 2.5% in 1990.
- **Leading cause of Years Lived with Disability (YLD):** Mental disorders were the leading cause of YLDs in India, contributing 14.5% of the total YLDs in 2017.
- **Distribution across states:**
 - **Mental disorders that manifest predominantly during adulthood** was generally higher in the more developed southern states than in the less developed northern states,
 - **Mental disorders with onset predominantly in childhood and adolescence** was generally higher in the northern states than in southern states.
 - **Prevalence of depressive disorders** was highest in Tamil Nadu followed by Andhra Pradesh, Telangana and Kerala.
- **Gender related disorders:**
 - The contribution of depressive disorders and eating disorders to the total DALYs was substantially **higher in females than in males.**
 - Whereas the contribution of autism spectrum disorders and Attention Deficit/Hyperactivity Disorder (ADHD) was significantly **higher in males than in females.**
- **Age related disorders:**
 - Among the mental disorders that manifest predominantly **during adulthood**, the highest disease burden in India was caused by depressive and anxiety disorders, followed by schizophrenia and bipolar disorder.
 - Among the mental disorders that have their onset predominantly **during childhood and adolescence**, the highest disease burden was caused by **Idiopathic Developmental Intellectual disability (IDID)**, followed by conduct disorder and autism spectrum disorders.

DALY and YLD

- **One DALY is one lost year of "healthy" life.** The sum of these DALYs across the population, or the burden of disease, is a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability.
- **DALYs are calculated as the sum of the Years of Life Lost (YLL) due to premature mortality in the population and the Years Lived with Disability (YLD) for people living with the health condition or its consequences.**

Challenges related to mental health

- **Poor implementation of mental health services** in India with a high treatment gap for mental disorders, poor evidence-based treatment, and gender- differentials in treatment.
- **Shortage of mental health personnel** with two mental health workers and 0.3 psychiatrists per 100000 population, which is much lower than the global average.
- **Discriminatory attitude of health workers** towards people with mental illness and demand-side barriers such as low perceived need for care, paucity of knowledge of mental disorders, and stigma attached to mental disorders.
- **Paucity of research in India** on risk factors for mental disorders.
- **Lack of population-level data** on the prevalence of many mental disorders across the states of India.

Analysis of the causes

- **Modernisation and urbanisation:** The **higher prevalence of depressive and anxiety disorders in southern states** could be related to the higher levels of modernisation and urbanisation in these states and to many other factors.
 - There is also a **positive relationship between depressive disorders and suicide death rates** at the state level, with suicide death rates also being higher in the southern states than in the northern ones.
- **Gender discrimination:** The observed **higher prevalence of depressive and anxiety disorders in females** could be related to gender discrimination, violence, sexual abuse, antenatal and postnatal stress, and adverse socio-cultural norms.

- **Influence of media:** A significantly **higher prevalence of eating disorders in females** apart from genetic and biological factors is also probably linked with socio-cultural factors, social media, and peer pressure to diet.
- **Genetic and hormonal factors** could be the reasons for **higher prevalence of Autism spectrum disorders and ADHD in males**.
- **Old age issues:** The **high prevalence of depressive disorders in older adults** could be due to various factors, including chronic illness, social isolation and inadequate social support, and elder abuse.

What needs to be done

- **Integrated approach** to detect, treat, and manage patient needs related to mental and physical health is urgently needed in India because people with mental disorders die prematurely and have excess disability.
- **Strengthening the role of communities and families** in addressing mental health by reducing stigma and discrimination, raising awareness, and promoting inclusion. School-based mental health programmes can help improve mental health in children.
- **Task-sharing** with non-specialists and appropriate training of community health workers can improve mental health service provision.
- **Positive association of depressive disorders and schizophrenia with suicide deaths**, especially for females, needs urgent attention in primary care for suicide prevention, because Indian women have double the global suicide death rate.
- **Telemedicine** to provide mental health services in remote and inaccessible areas, internet-based and telephone-based helplines, and mental health mobile apps can reduce the burden on existing mental health services.
- **Promotion of Yoga**, is also potentially beneficial for depressive disorders.

Government initiatives

- **National Mental Health Programme:** launched in 1982, keeping in view the heavy burden of mental illness in the community, and the absolute inadequacy of mental health care infrastructure in the country to deal with it. It **has 3 components**:
 - Treatment of Mentally ill
 - Rehabilitation
 - Prevention and promotion of positive mental health.
- **National Mental Health Policy:** introduced in 2014 to promote mental health, prevent mental illness, enable recovery from mental illness, promote destigmatization and desegregation.
- **Mental Healthcare Act:** Launched in 2017, to provide for mental healthcare and services for persons with mental illness and to protect, promote and fulfil the rights of such persons during delivery of **mental healthcare** and services.
- **National Health Mission and National Adolescent Health Programme** include components to address mental health of children and adolescents.
- **Ayushman Bharat initiative:** launched in 2018 aims to provide comprehensive primary health care and health insurance coverage for non-communicable diseases including mental disorders, which could contribute to reducing the adverse effect of mental disorders at the population level.

6.7. PISA TEST

Why in news?

India will participate in the next PISA (The Programme for International Student Assessment) test to be conducted in 2021.

About the PISA test

- PISA is the OECD's (Organisation for Economic Cooperation and Development) Programme for International Student Assessment.
- The aim of the test is to give a **comprehensive analysis of how education systems are working in the country in terms of preparing its students for higher education and subsequent employment**.
- PISA assesses students between the ages of **15 years and 3 months and 16 years and 2 months, and who are enrolled in an educational institution at grade 7 or higher**.
- PISA measures student performance in **mathematics, reading, and science and even innovative subjects like collaborative problem-solving and money literacy**.
 - Unlike conventional tests and exams, the PISA test does not assess students on their memory, rather their application capabilities.
- The PISA test is held every three years and the next test will be held in 2021. It was first conducted in 2000.

India's Participation

- India has participated in the PISA test only once before, in 2009 in which it ranked 72nd out of 73 countries.
 - The Government blamed “out of context” questions for the poor results in 2009 and decided it won't participate further.
- However, Union Human Resource Ministry confirmed India's participation for PISA 2021.
 - Approximately 1.75 lakh students from government schools in Chandigarh, along with 600 Navodaya Vidyalayas and 3,000 Kendra Vidyalayas will take the PISA test in 2021.

Significance for India

- Learnings from participation in PISA- 2021 will help to introduce competency-based examination reforms in the school system and help move away from rote learning.
- It would lead to recognition and acceptability of Indian students and prepare them for the global economy in the 21st century.
- Consistent participation in the test will allow countries to learn from each other about effective education policies and improve their own systems, using others as examples.

6.8. ECHO NETWORK

Why in news?

Recently, EChO Network, was launched by Principal Scientific Adviser to the Government of India.

About EChO Network

- It is **national program to provide a template for cross-disciplinary leadership** in India with the specific focus of increasing research, knowledge, and awareness of Indian ecology and the environment.
- It seeks to develop a national network to catalyse a new generation of Indians who can synthesize interdisciplinary concepts and tackle **real-world problems in medicine, agriculture, ecology, and technology**.
- It establishes a **new platform to change how science is embedded in our modern society** with no such precedent anywhere in the world.
- **Network Goals**
 - **Create interdisciplinary scientific leaders** through cross- sector collaboration
 - **Employ solution-driven and public-guided science** to tackle real-world problems
 - **Encourage science-driven policy** and practice
 - **Establish nationwide ecological and environmental appreciation** and awareness
- **Founding partners** include Government, industry and academia such as Office of the Principal Scientific Adviser, Bill and Melinda Gates Foundation, Hindustan Unilever Limited, RoundGlass, India Climate Collaborative etc.

Principal Scientific Advisor (PSA)

- PSA's Office was set-up, primarily to:
 - evolve policies, strategies and missions for the generation of innovations and support systems for multiple applications;
 - generate science and technology tasks in critical infrastructure, economic and social sectors in partnership with Government departments, institutions and industry;
 - function as Chairperson of Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC).

7. SCIENCE AND TECHNOLOGY

7.1. THE PERSONAL DATA PROTECTION BILL, 2019

Why in news?

Recently, the **Personal Data Protection Bill, 2019** was introduced in Lok Sabha.

The need for data protection

- **Protection of privacy:** India has more than 62 crore internet users, whose personal data is shared online. With supreme Court declaring Right to Privacy a Fundamental right (**K.S. Puttaswamy** case) protecting individual privacy is constitutional duty of the state.
- **Check snooping or surveillance by various agencies:** Recently, 121 Indian citizens' WhatsApp accounts were hacked by an Israeli software called Pegasus.
 - The **Facebook–Cambridge Analytica data scandal of 2018** where personal data of millions of peoples' Facebook profiles without their consent was used for political advertising purposes.
- **Economic losses:** The average cost of data breach in India is Rs 12.8 crore, with per capita cost per lost or stolen record reaching Rs 5,019 in 2018, as per a study by IBM.
 - Moreover, data is being considered as new oil in 21st century. Without proper data regulations or data localisation norms, Global firms like Google, Face book are benefitting from data collected from Indians.
- **Increasing sophistication of cyber-crimes:** The root cause for 51 per cent of data breaches was malicious or criminal attacks, in India as per IBM study.

Key features of the Bill

- **Personal data (data that can identify an individual):** The bill talks about various types of personal data, such as:
 - **Sensitive personal data** (related to finances, health, official identifiers, sex life, sexual orientation, biometric, genetics, transgender status, intersex status, caste or tribe, religious or political belief or affiliation)
 - **Critical personal data** (military or national security data and the government can define it from time to time)
 - **General personal data-** other than sensitive and critical personal data.
- **Applicability:** The Bill governs the processing of personal data by:
 - Government
 - companies incorporated in India
 - foreign companies dealing with personal data of individuals in India.
- **Obligations of data fiduciary (an entity or individual who collects and decides the means and purpose of processing personal data):**
 - Personal data can be processed only for **specific, clear and lawful purpose**.
 - All data fiduciaries must undertake certain transparency and accountability measures such as:
 - ✓ implementing security safeguards (such as **data encryption and preventing misuse of data**)

Data protection in India

- Data protection is the process of protecting the personal data and aims to strike a balance between individual privacy while allowing data to be used for myriad purposes.
- **India does not have any dedicated legal framework for data protection.** Presently some acts cover the data protection in general.
- **Sec 43A of Information Technology Act 2000** protects user data from misuse but it is applicable to only corporate entities and not on government agency. Also, the rules are restricted to sensitive personal data only — medical history, biometric information among other things.
- Other acts like **Consumer Protection Act 2015**, **Copyrights Act 1957** among others also attempt to protect the personal information.
- In 2018, a draft version of the bill was prepared by a committee headed by retired **Justice B N Srikrishna**.

Challenges/ constraints in data protection

- Most of the data storage companies are based abroad. They also export data to other jurisdiction making it difficult to apply Indian laws.
- Multiple private players are involved in data dynamics which makes it difficult to apply uniform data protection framework.
- Generally, the application using pre-ticked boxes on consent while asking users regarding the acceptance to the terms and conditions, leads to uninformed consent.
- It is usually difficult to trace the perpetrator invading the data privacy.

- ✓ instituting **grievance redressal mechanisms** to address complaints of individuals.
- **Rights of the data principal (the individual whose data is being collected and processed):** These include the right to:
 - obtain confirmation from the fiduciary on whether their personal data has been processed
 - restrict continuing disclosure of their personal data by a fiduciary, if it is no longer necessary or consent is withdrawn. It also includes the **right to be forgotten** which will allow users to erase their personal data published online and give them the freedom to ask entities such as Facebook and Twitter to delete any data they do not want in the public domain.
- **Grounds for processing personal data:** The Bill allows processing of data by fiduciaries only if consent is provided by the individual. However, **in certain circumstances, personal data can be processed without consent.** These include:
 - if required by the State for providing benefits to the individual
 - legal proceedings
 - to respond to a medical emergency
- **Social media intermediaries:** platforms with larger number of users and having potential to impact electoral democracy or public order, have certain obligations, which include providing a voluntary user verification mechanism for users in India.
 - According to official sources, while the process can be voluntary for users and can be completely designed by the company, it will decrease the anonymity of users and “prevent trolling”.
- **Data Protection Authority:** The Bill sets up a Data Protection Authority which may:
 - take steps to protect interests of individuals
 - prevent misuse of personal data
 - ensure compliance with the Bill.
- **Transfer of data outside India:**
 - **Sensitive personal data** may be transferred outside India for processing if explicitly consented to by the individual and subject to certain additional conditions. However, such sensitive personal data should continue to be stored in India.
 - **Critical personal data** can only be processed in India.
 - **Personal data other than sensitive and critical personal data** don't have such localisation mandates.
- **Exemptions:**
 - The central government can exempt any of its agencies from the provisions of the Act:
 - ✓ in interest of security of state, public order, sovereignty and integrity of India and friendly relations with foreign states
 - ✓ for preventing incitement to commission of any cognisable offence (i.e. arrest without warrant) relating to the above matters.
 - Processing of personal data is also exempted from provisions of the Bill for certain other purposes such as:
 - ✓ prevention, investigation, or prosecution of any offence
 - ✓ personal, domestic
 - ✓ journalistic purposes
- **Sharing of non-personal data with government:** The central government may direct data fiduciaries to provide it with any:
 - non-personal data
 - anonymised personal data (where it is not possible to identify data principal) for better targeting of services.

Criticisms of the bill

- **There are significant departures** in the current bill from the draft Bill prepared by the Justice **B N Srikrishna committee** in 2018.
 - **Data Protection Authority's composition** is dominated by the government, as contrasted with the diverse and independent composition as suggested in the committee's draft.
 - There is a **blanket power of exemption** from all provisions of the law (including access to personal data without consent, citing national security, investigation and prosecution of any offence, public order) in favour of a government agency. This could amount to surveillance.

- A report from the IT Ministry's Artificial Intelligence (AI) Committee contradicts foundational aspects of the Bill, as it suggests:
 - **India should maintain free flow of data** stating that India has been one of the biggest beneficiaries of the global data flows. Limitations on the free and open flow of data can seriously hinder the **ability of economy** to remain competitive.
 - **Focus should be placed on implementation and enforcement** instead of over-regulation. **Sectoral entities are more appropriate regulators** than an overarching authority.
 - Legislation alone is not enough unless supported by an **adequate implementation ecosystem including an effective grievance redressal system and user awareness**.
 - ✓ E.g. security and government access are not achieved by mere localisation, as the encryption keys may still be out of reach of national agencies.

Conclusion

Considering the data privacy as the fundamental right of a citizen and economic downturns of the potential breaches in data, government need to reconsider all the above pending issues. A robust Personal data protection law is the need of the hour. Due importance needs to be given on public awareness, better implementation and regulation and efficient grievance redressal as well.

7.2. NATIONAL GUIDELINES FOR GENE THERAPY

Why in News?

Indian Council of Medical Research (ICMR) published "**National Guidelines for Gene Therapy-Product Development and Clinical Trials**".

About Gene Therapy

Gene Therapy refers to the process of **introduction, removal or change** in content of an individual's genetic material with the goal of treating the disease and a possibility of achieving long term cure.

It is classified into 2 types:

- **Germ-line gene therapy:** The concept of germ-line gene therapy is to introduce gene modified cells into the germline, that can be **transmitted vertically across generations**. Germline gene therapy is prohibited in India, due to ethical and social considerations.
- **Somatic cell gene therapy:** It affects the **targeted cells/tissue/organs in the patient**, and is not passed on to subsequent generations. It is legal in India. This also includes genome modification as done in CRISPR-related and other technologies. It has two categories:
 - **ex vivo-** cells obtained from an individual are genetically **modified/corrected outside the body** followed by transplantation into the same or a different individual.
 - **in vivo-** the gene of interest is delivered directly to target cells/tissues/organs (like liver, pancreas, muscle, heart etc.) in the patients. Gene delivery can be carried out by viral or non- viral vector systems.

Need of Gene Therapy guidelines

- **Complexity and unpredictability** of human diseases, variety of immune reactions and gene expression in cells leading to failures of human gene therapy trials necessitate one to be cautious for **gene therapies**,

Some important terms

- **Gene-** a gene is a sequence of nucleotides in DNA or RNA. Some genes act as instructions to make products like RNA or proteins.
- **Genome-** the complete set of genes or genetic material that is present in all the cells of an organism
- **Genotype-** pattern of genes in an organism's DNA that is responsible for a particular trait
- **Phenotype-** refers to the observable physical properties of an organism. These include the organism's appearance, development, and behaviour.
- **CRISPR-** clustered regularly interspaced short palindromic repeats are DNA sequences used in genome editing along with enzymes called CRISPR-associated nucleases (most commonly Cas9)
- **Stem cells-** are special human cells that have the ability to develop into many different cell types, from muscle cells to brain cells.
- **Somatic cells** are any body cells that are not involved in reproduction. Most cells in body are somatic cells. They include skin cells, bone cells, red blood cells, and many more.
- **Germ cells** are cells that create reproductive cells called **gametes**. They are found only in the **reproductive glands (ovaries in females and testes in males.)**.
- **Retrovirus-** family of viruses with RNA as genetic material that can integrate their genome into the DNA of host cells, they invade.
- **Transgene-** a genetic material that is artificially introduced into the genome of another organism.

patient safety, clinical trial design, production processes and quality required of the actual **gene therapy product**.

- Need of ethical framework to **prevent misuse and premature commercialization**. E.g. Creation of babies using germline gene editing by a Chinese scientist recently, that attracted global criticism.
- Around **70 million Indians** are estimated to suffer from inherited genetic diseases. These include haemophilia, thalassemia, sickle-cell anaemia etc.
 - **Inherited genetic diseases or rare diseases** refer to medical conditions that affect a small percentage of population but has vast, debilitating and often life-threatening effects on the patients. Drugs intended to cure these diseases are termed as “**orphan drugs**” that are often neglected by the traditional pharmaceutical industry uncertain or poor commercial outcomes given the smaller affected population size.
- **Economic benefits:** The worldwide market for treatments for rare diseases is predicted to grow at a compound annual growth rate (CAGR) of 11.3% from 2018 to 2024 and predicted to reach revenues of more than \$250 billion.
 - **Competition from other countries:** Until 2017, almost 2,600 gene therapy clinical trials have been conducted worldwide in 38 countries, of which 64.9% were in the US, 23.2% in Europe and approximately 6.5% in Asia, most of them being in China and Japan.
- **Guideline to help researchers and regulators:** by providing an enabling environment and guiding scientifically sound practice it is likely to **spur innovation and accelerate research** for rare diseases. It will also facilitate the clearance of such therapies by the Drugs Controller General of India on objective basis.

A **Gene Therapy Product (GTP)** is defined as any biological entity, having the required gene, that could introduce modifications in the genome for therapeutic benefit. GTPs work by repairing, replacing or deactivating dysfunctional disease-causing genes aiming to restore normal function. GTPs include:

- **Recombinant viral vectors:** adenovirus, retrovirus
- **Non-viral vectors:** naked DNA transfection
- **Microbial/bacterial vectors** (Salmonella, E. coli): recombinant bacteria derived vehicles
- Modifications resulting from the use of **CRISPR** and other similar technologies
- **ex vivo genetically modified cells:** gene modified/augmented stem cells, iPS (induced pluripotent stem) cells, CAR-T cells etc.
- **Soluble/particulate/emulsion/Nano based interventions** containing any form of genetic material/ nucleic acid for the purpose of clinical gene therapy
- **DNA vaccines** where the final product is nucleic acid and is administered for vaccination/therapy.

As per the New Drugs and Clinical trial Rules (2019) the GTPs falls under ‘new drug’ and shall always be deemed to be ‘new drug’.

Key guidelines

- **Applicability:** The guidelines apply to **all stakeholders** in the field of gene therapy including researchers, clinicians, regulatory committees, industry, patient support groups etc.
- **General Principles:** Clinical trials on human participants involving GTPs must safeguard **human rights, safety and dignity**. Various principles like Principle of Essentiality, Voluntariness, Non-exploitation, Risk Minimization etc. need to be followed.
- **Mechanism for Review and Oversight:**
 - Proposed establishment of **Gene Therapy Advisory and Evaluation Committee (GTAEC)**- an independent body with experts from diverse areas of biomedical research, government agencies and other stakeholders.
 - It is mandatory for all institutions and entities engaged in development of GTPs to establish an **Institutional Bio-safety committee (IBSC)**.
 - Research involving development of new GTPs needs to obtain approvals from IBSC and Ethics Committee (EC). Biological material from humans can be procured only from clinics/hospitals that have an **Ethics Committee**.
 - All clinical trials are mandated to be registered with **Clinical Trials Registry-India (CTRI)**. It is an online public record system for registration of clinical trials being conducted in India.
- **Responsibilities of various stakeholders**
 - Investigators should treat the biological material with **utmost respect and adequate care** to avoid its misuse.
 - Storage and disposal of the GTPs or its components should be as per the Regulations and Guidelines on **Bio-safety of Recombinant DNA Research and Bio-containment 2017**.

- Any GTP of foreign origin or its modified variants that will be first in human use is not permissible for direct first in human trials in India.
- Investigators should demonstrate **respect for autonomy and privacy of patients**.
- **Good Manufacturing Practise (GMP) Guidelines:**
 - It includes Personnel Training, establishment of quality control processes.
 - Waste materials and by-products of the GTP manufacturing process must be securely decontaminated and transported as per appropriate biohazard disposal protocol.

Way Forward

There remain many hurdles that the scientific and clinical community working in the R&D fields are yet to overcome, primarily the appropriate and timely diagnosis including genetic testing and genetic counselling, prohibitive costs of such gene therapies, adequate insurance coverage and management practices among treating physicians. While prospects are bleak for many individuals with conditions classified as rare diseases, policies such as that proposed by the ICMR may offer hope.

7.3. ANNULAR SOLAR ECLIPSE

Why in news?

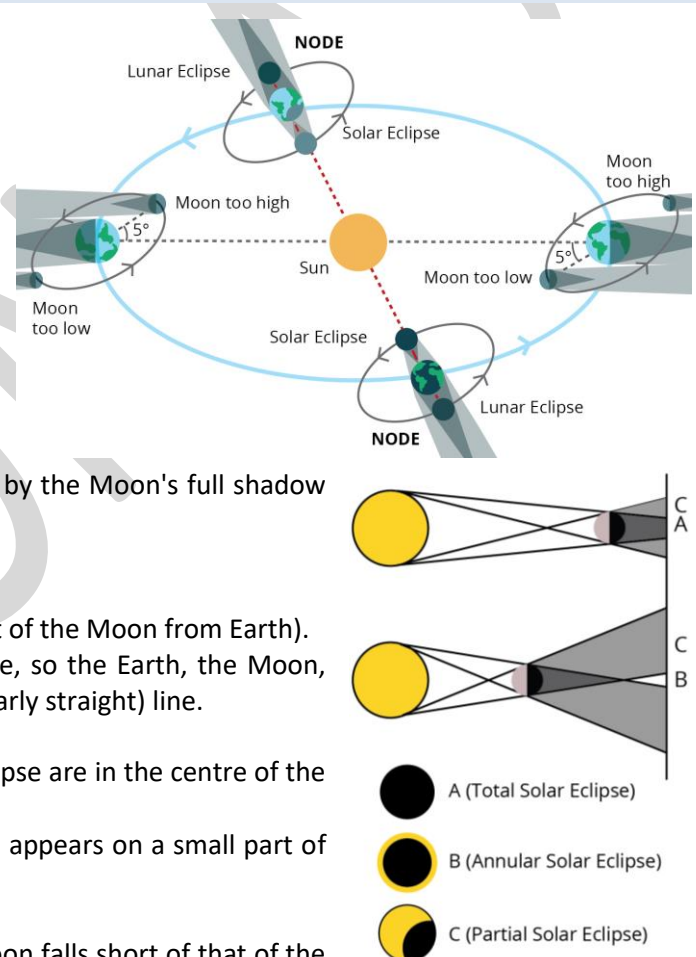
Recently, parts of Kerala, Karnataka and Tamil Nadu witnessed an annular solar eclipse. Rest of the country witnessed a partial solar eclipse.

About Solar eclipse

Solar eclipse happens when the moon, while orbiting the Earth, comes in between the Sun and the Earth, thereby blocking the sun's light, **fully or partially**.

There are four types of eclipses:

- **Total solar eclipse:** Total solar eclipses are rare at any particular location because totality exists only along a narrow path on the Earth's surface traced by the Moon's full shadow or umbra.
 - It happens when:
 - ✓ it is New Moon.
 - ✓ the Moon is near perigee (the closest point of the Moon from Earth).
 - ✓ the Moon is at (or very near) a lunar node, so the Earth, the Moon, and the Sun are aligned in a straight (or nearly straight) line.
 - It is visible only from a small area on Earth.
 - People who are able to view the total solar eclipse are in the centre of the moon's shadow as and when it hits the Earth.
- **Partial solar eclipse:** In it the shadow of the moon appears on a small part of the sun.
- **Annular solar eclipse (ASE):**
 - It occurs when the angular diameter of the Moon falls short of that of the Sun so that it cannot cover up the latter completely.
 - Since the moon does not block the sun completely, it looks like a "dark disk on top of a larger sun-colored disk" forming a "ring of fire" (or **annulus**).
 - For an ASE to take place, three things need to happen-
 - ✓ there should be a **New Moon**
 - ✓ the Moon **should be at or very near a lunar node** so that the Sun, Moon and the Earth all are in a straight line
 - ✓ the Moon **should be near the apogee** (the farthest point of the Moon from Earth) so that the outer edge of the Sun is visible.
 - During one of the phases of the ASE a phenomena called **Bailey's Beads'** are visible. This is a thin fragmented ring caused by passage of sunlight through the rough edge of the Moon.



- This is the only time when one can find **two shadows** for everything in all the sides under the sunlight because the light source during Annularity is a giant illuminating ring.
- During an ASE, NASA uses ground and space instruments to view top layer of the sun or **corona** when the sun's glare is blocked by the moon.
- During partial and annular solar eclipses, it is dangerous to view sun without proper equipment and techniques. Not using proper methods and equipment for viewing can cause permanent eye damage or severe visual loss.
- **Hybrid Eclipse:** This is a very rare eclipse where the eclipse will only be annular for the first few seconds. For the rest it will be a total eclipse.

Lunar nodes

- The Moon's orbit around the Earth is tilted with relation to the Earth's orbital plane by **5 degrees** with two intersecting points – '**Ascending Node**' and '**Descending Node.**'
- Thus, despite the Moon being between the Earth and Sun on every new Moon, the three do not always come on a straight line or cause an eclipse.
- These nodes also rotate around the Earth once in **18 years**.
- In this way, if a new Moon takes place when a node is also between the Earth and Sun, the three come in a straight line and an eclipse takes place.

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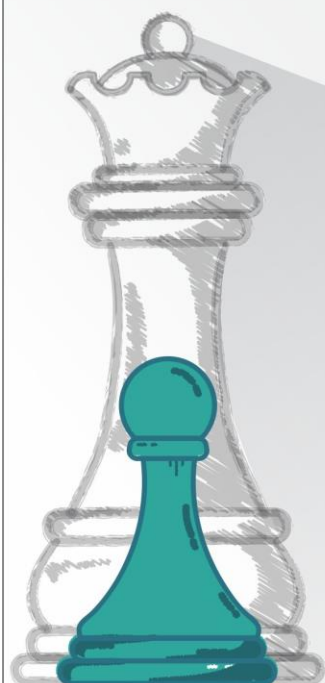


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8. CULTURE

8.1. EARLIEST SANSKRIT INSCRIPTION IN SOUTH INDIA FOUND IN A.P.

Why in News?

Archaeological Survey of India has discovered the earliest Sanskrit inscription in South India.

More on News

- This inscription was discovered in **Chebrolu** village in Guntur district of **Andhra Pradesh**.
 - It was issued by **Satavahana king Vijaya** in 207 A.D.
 - It is also the **earliest epigraphic evidence** so far for the **Saptamatrika** cult.
 - It also predates **Nagarjunakonda inscription** of Ikshavaku king Ehavala Chantamula issued in **4th century A.D.** which was considered the earliest Sanskrit inscription in South India previously.

About Archeological Survey of India (ASI)

- Under the Ministry of Culture, it is the premier organization for the archaeological researches and protection of the cultural heritage of the nation.
- It regulates all archaeological activities in the country as per the provisions of the Ancient Monuments and Archaeological Sites and Remains (AMASR) Act, 1958.
- It also regulates Antiquities and Art Treasure Act, 1972.
- It was founded in 1861 by **Alexander Cunningham** who also became its first Director-General.

Saptamatrika cult

- Saptamatrikas are a **group of seven female deities** worshipped in Hinduism.
- Matrikas are the personified powers (shakti) of different Devas.
- In Andhra Pradesh, the Saptamatrika cult was widely prevalent **during the rule of the early Chalukyas of Badami (6th to 8th century A.D.)**, though the worship of the goddesses is traceable at Nagarjunakonda from 4th century A.D.
 - The new discovery predates the earlier references of Saptamatrika worship found in the early Kadamba copper plates and the early Chalukya and Eastern Chalukya copper plates by **200 years**.
- The concept of seven Mothers or Saptamatrika also finds reference in texts like the Rig Veda, Puranas and Shilpasastras.

8.2. PAIKA REBELLION

Why in news?

Recently, President of India laid the foundation stone for the Paika Memorial in Odisha's Khurda district to mark **200 years** of the **Paika Rebellion**.

About Paika rebellion

- It was an **armed rebellion** that took place in Odisha against the British East India Company.
- Paikas were the **traditional landed militia of the Gajapati rulers of Odisha**.
- Paikas **owned rent-free land** that had been **given to them for their military service to Kingdom of Khurda**.
- The British, having established their sway over Bengal Province and Madras Province to the north and south of Odisha, occupied it in 1803.
 - The King of Odisha Mukunda Deva-II was a minor then and initial resistance by Jai Rajguru, the custodian of Mukunda Deva-II, was put down brutally.
 - Rulers of Khurda were traditionally the custodians of Jagannath Temple and ruled as the deputy of lord Jagannath on earth. They symbolised the political and cultural freedom of the people of Odisha.
- A few years later, the Paikas under **Baxi Jagabandhu**, the hereditary chief of the militia army of the Gajapati King, rose in rebellion, taking support of tribals and other sections of society.
- They attacked British symbols of power, setting ablaze police stations, administrative offices and the treasury during their march towards Khurda, from where the British fled.
- They were supported by the zamindars, village heads and ordinary peasants.

Causes of Paika Rebellion

- **Contemporary political condition of Khurda:** The hanging of Jai Rajaguru, the deposition of Raja Mukundadeva II and the reorganization of administration in Khurda by the British, enraged the people of Khurda.

- **Faulty revenue policy:** Colonial rule brought new land revenue settlements in the region which led to the Paikas losing their estates and land was transferred to Bengali absentee landlords.
- **The new currency system:** The British changed the currency system from **cowrie** to rupee. The villagers faced a lot of problems in handling the new currency and they were grossly exploited by the local mahajanass.
- **British salt policy:** The long sea coast of Odisha produced a huge quantity of salt which was used by the people of this land freely. However, the British authority deprived the zamindars and the local people of coastal region of their traditional rights to manufacture salt.

Paika Rebellion as the First war of Independence

- The uprising is said to be an expression against the disruption of traditional way of life of the region due to advent of British.
- It was directly against the colonial masters and due to the large-scale participation of all the section of the society it is sometimes referred as the "First war of Independence".

Suppression of the revolt

- The British were initially taken aback and then suppression followed with many killed and imprisoned. Many more were tortured.
- Some rebels fought a guerilla war till 1819 but were captured and killed.
- Baxi Jagabandhu was finally arrested in 1825 and died in captivity in 1829.
- After the suppression:
 - **Paikas were forced to leave the profession of militia men** of the king and to adopt cultivation and other works as means to earn livelihood.
 - The **price of the salt was reduced** and more salt was made available for the smooth purchase of the people.
 - When Raja Mukundadeva II died on 30 November 1817, his son Ramachandradeva III was allowed to move to Puri. He was allowed an annual pension and to take over the charge of the management of the Jagannath temple of Puri. By this arrangement, the British government won the mind and sentiment of the people of Odisha.

8.3. NEHRU-LIAQUAT AGREEMENT

Why in news?

The debate on **The Citizenship Amendment Bill** in Parliament included multiple references to the Nehru-Liaquat Agreement that was signed in Delhi in **1950**.

About Nehru Liaquat agreement

- The Nehru-Liaquat agreement signed by Jawahar Lal Nehru and Pakistan's Prime Minister Liaquat Ali Khan, is also known as the **Delhi Pact**.
- It was a bilateral agreement signed between India and Pakistan in order **to provide a framework for the treatment of minorities in the two countries**.
- The agreement was **signed in the backdrop of large-scale migration of people belonging to minority communities between the two countries** in the wake of attacks by the majority communities in their respective territories.

Key provisions of the Agreement

- Governments of both the countries agreed to **provide and protect Minority rights including political, cultural and economic rights** like - complete equality of citizenship, irrespective of religion, freedom of movement within each country, freedom of occupation, speech and worship etc.
- Both Governments **declared these rights to be fundamental** and agreed to take suitable measures to enforce them effectively.
- **Setting up of Commission of Enquiry** to look into the causes of disturbances and to suggest measures to prevent them in future.
- Refugees were allowed to return unharmed to dispose of their property.
- Measures were to be taken for safe return of abducted women and recovery of looted property.
- **Forced conversions were unrecognized**.

9. ETHICS

9.1. VIGILANTE JUSTICE

Why in News?

Various incidents in the recent past, like celebrations on encounter of 4 rape accused in Hyderabad, mob lynching etc., signify the **growing acceptance of retributive punishment and vigilante justice in our society.**

Comparison between Acceptable form of punishment and Vigilante justice

	Acceptable form of punishment	Vigilante Justice
Form of punishment	The fundamental elements of Justice are equality before law, equity in opportunities, respect for the human rights and dignity and upholding fairness in delivering justice. Criminal justice is mainly of two types: Restorative and Retributive justice. Former is the more acceptable form of justice in modern society. • Restorative justice: it seeks to make criminals realise their mistake and discourage them from causing further harm. It also seeks to make the victims regain their lost sense of security. So, rather than mere punishment, it focuses on how the wrongdoer can repair the harm. • Restorative justice encourages the Gandhian values of Ahimsa and Satyagraha. As Gandhi said, "Hate the sin, not the sinner", by giving a chance to wrongdoer to reform, restorative justice is all about embracing the power of 'accepting and letting go' as "forgiveness is the virtue of the strong".	Vigilantism is the act of enacting perceived (not verified) justice summarily and without legal authority. It is also known as 'frontier justice' or 'mob justice'. Vigilantism is retributive in character. • Retributive justice: justice is perceived to be satisfied when a wrongdoer suffers in proportion to the way he has made others suffer. So, it's also known as 'eye for an eye justice'. Immanuel Kant was a proponent of this type of justice.
Rationale of the prevalence of the form of justice	• Max Weber, in his conceptualisation of bureaucracy, argued that most efficient form of organisation is one that follows bureaucratic principles like rule-based order. • So, Police and Judiciary which work on some pre-defined principles are most suitable to deliver justice and hence are given legal authority to do so. • Therefore, as per Weberian model, there should be no place of any kind of Vigilante Justice approach in modern societies that lacks this legal authority. So, it is also argued that the name 'vigilante justice' in itself is a misnomer because the 'justice' is questionable.	• Such forms of retributive punishments are increasing in Indian society because of dissatisfaction with legal quantum of punishment, lack of preparedness and training of police personnel, lack of awareness of laws and constitutional morality, politicisation of social issues, corruption among officials, delays in judicial system etc. • For instance, vigilantism as offered by Khap Panchayats or fictional characters like Batman also has many takers.
Ethical consideration	Carol Gilligan has given the terms Ethics of Justice and Ethics of care, that seek to determine the ethics or morality of the reasoning behind the action for delivering justice. Modern societies are increasingly incorporating these ideals of justice, such as: • Ethics of Justice involves: ○ Upholding Rights of the people ○ Fair and equitable treatment of all ○ A solution that seems to damage the fewest people. ○ Respect for legal system and rules • Ethics of care involves: ○ Humanity and compassion ○ Justice cannot always be decided by cost-benefit analysis but it also involves emotional support, love and care-giving	Ethical issues involved: • It is an extra-judicial punishment without any legal authority. • It disrespects certain rights of individuals like right to legal form of procedural justice and right to life. • Values that are compromised are fairness, truthfulness (rumours in mob), honesty, reliability (of government machinery), open-mindedness, positivity, respect, compassion, human dignity, service to others etc.

Way Forward

The concept of restorative justice needs to be understood and enhanced in the Indian criminal justice system. **Restorative justice** can be most effective for rehabilitation of delinquent children, giving solace to victims etc. as it is based on Ethics of care. The kind of vigilantism that we are witnessing today like **cow vigilantism** should not have any place in a country where Constitution is supreme.

At the same time, our criminal justice system faces myriads of problems ranging from laws related to victim and witness protection, to construction of new offences and reworking of the existing classification of offences, to police and judiciary. **2017 Unnao rape** is a case in point. Since, perceived inefficiency of criminal justice system fuels such forms of vigilantism, so, a holistic overhaul of criminal justice system is needed.

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10. NEWS IN SHORT

10.1. INDIAN OCEAN DIALOGUE 2019

- Recently, 6th Indian Ocean Dialogue (IOD) was held in Delhi.
- The IOD is a flagship initiative of the **Indian Ocean Rim Association (IORA)**.
- It is a **Track 1.5 discussion**, encouraging an open and free flowing dialogue by **academia and officials on strategic issues** of the Indian Ocean Region.
- Track 1.5 diplomacy** involves both **officials and non-officials** (business leaders, business organizations and all possible non diplomats). It is seen as **midway** between **Track I (governmental diplomacy)** and **Track II (backchannel diplomacy** through non-state actors).
- Indian Ocean Rim Association is an inter-governmental organisation aimed at **strengthening regional cooperation and sustainable development** within the Indian Ocean region.
- The Association has **22 member states and 9 dialogue partners**.



10.2. AGREEMENT ON SOCIAL SECURITY BETWEEN INDIA AND BRAZIL

- The Union Cabinet has recently given its approval for signing the Agreement on Social Security (SSA) **between India and Brazil**. It is first such agreement between the BRICS countries.
- SSA is a bilateral agreement between India and a foreign country designed to protect the interests of Indian professionals/skilled workers working abroad for short durations and enhance the competitiveness of Indian companies by providing the following benefits:
 - Detachment:** It exempts Indian worker from making a social security contribution in that foreign country. This exemption is provided only if Indian worker is covered under social security system of India and continues to pay his/her contribution during the period of overseas contract.

- Exportability:** It enables the Indian worker to remit his accumulated social security contribution made in a foreign country, in case of relocation to India/third country.
- Totalization:** An SSA allows aggregating residency periods of social security contribution made by the Indian worker/ professional in India and the foreign country to qualify for retirement benefits.
- SSA will also provide for disability insurance benefits to Indian nationals working abroad.
- As on date, **India has signed and operationalized Social Security Agreements (SSAs) with 18 countries** such as Australia, Austria, Belgium, Canada, Czech Republic, Denmark etc.

10.3. INSTEX BARTER MECHANISM

- Recently, 6 new European countries, **Belgium, Denmark, Finland, the Netherlands, Norway and Sweden** have decided to join the **Instrument in Support of Trade Exchanges (INSTEX)** mechanism.
- INSTEX is a Paris based special purpose vehicle setup by Germany, France and the UK that **allows European businesses to trade with Iran, despite strict US sanctions**.
- This payment channel functions as a **euro-dominated clearing house** which circumvents the US sanctions on Iran as it operates outside of the US dominated global financial system.
 - It runs a **barter arrangement** which allows Iran to continue trade and import products or services from member European countries in exchange for exports.

10.4. PALESTINE-INDIA TECHNO PARK

- Recently, India released third section of funding worth \$3 million for the construction of a Palestine-India Techno Park.
- India's **investment towards the park is part of an agreement signed** for setting up of a techno park with Indian grant of \$12 million, which is to be released \$3 million on a half-yearly basis.
- The techno park is to **create business environment and culture** that will enable knowledge-based and creative enterprises as well as technology clusters to successfully operate locally, regionally and globally.
- Its **objective is to establish an environment accessible to industry, entrepreneurship and bridging the knowledge gap between the private sector and academia**.
- Technopark will **serve as an IT hub offering one-stop solution to all IT-related service requirements**, providing state-of-art technology, hosting IT

companies and foreign companies benefitting local business, Universities and other institutions.

10.5. FUGITIVE ECONOMIC OFFENDER

- Recently, Nirav Modi was declared a '**fugitive economic offender**' (FEO) by a special court.
- The Fugitive Economic Offenders (FEO) Act, 2018 allows for a person to be declared as an FEO if:
 - an arrest warrant has been issued against him for any specified offences where the value involved is over Rs 100 crore, and
 - he has left the country and refuses to return to face prosecution.
- To declare a person an FEO, an application will be filed in a **Special Court (designated under the Prevention of Money-Laundering Act, 2002)**.

10.6. NATIONAL ELECTRONIC FUNDS TRANSFER (NEFT) AVAILABLE ROUND THE CLOCK

- RBI has declared that **NEFT payment facility will now be available round the clock, on all days**.
- NEFT is an **electronic funds transfer system** maintained by the RBI, to transfer funds from one bank account to another and has **no upper limit** to the transaction amount.
- **Earlier, NEFT transfer timings were fixed** from 8 am to 6:30 pm on bank working days. Now, NEFT money transfer has become **24X7 facility also including bank holidays**.
 - NEFT transactions after usual banking hours of banks are expected to be automated transactions initiated using '**Straight Through Processing (STP)**' modes by the banks.
 - **Time of settlement remains same** i.e. within 2 hours.
- This step will be **extremely beneficial for large-value transactions** which cannot be done through UPI or Immediate Payment Service (IMPS).
- RBI has also directed that from January 2020 **banks can no longer charge savings bank account holders for online transactions** in the NEFT system.

10.7. NO MDR CHARGES ON PAYMENT VIA RUPAY, UPI

- Recently, Finance Minister announced that no **Merchant Discount Rate (MDR)** charges will be applicable on transactions through homegrown RuPay and UPI platforms from January 1, 2020.
 - MDR is the cost paid by a merchant to a bank for accepting payment from their customers via digital means. It is **expressed in percentage** of the transaction amount.
- Also, all companies with a turnover of **Rs 50 cr or more** will be mandated to provide the facility of payment through RuPay Debit card and UPI QR code to their customers.

- This will give Indigenously developed digital payment medium like RuPay and BHIM UPI an edge over the payment gateway promoted by foreign companies (eg. PhonePe, Google pay).
- The government has indicated that the Reserve Bank of India and the concerned banks will absorb these costs from the savings that will accrue to them on account of handling less cash as people move to these digital modes of payment.

10.8. 38TH MEETING OF GST COUNCIL

- The 38th meeting of the GST Council has been recently concluded under the **Chairmanship of the Union Minister for Finance**.

Key decision

- **Grievance Redressal Committees (GRC)** will be constituted at Zonal/State level with both CGST and SGST officers and including representatives of trade and industry and other GST stakeholders (GST practitioners and GSTN etc.).
 - These committees will address grievances of specific/ general nature of taxpayers.
- To levy a **single rate of GST @ 28% on both State run and State authorized lottery**. Currently, there are **dual rates for lotteries** - 12% GST on state-run lotteries and 28% on state-authorized (private lotteries).
 - Council for the **first time exercised the option of voting to decide on the GST rate** on lottery.
- Recommended to raise the GST to a uniform rate of 18% (from 12%) on all Woven and Non-Woven Bags and sacks of polyethylene or polypropylene strips or the like.
- To check the menace of **fake invoices, suitable action to be taken for blocking of fraudulently availed input tax credit** in certain situations.

10.9. GOVERNMENT E-MARKETPLACE (GEM) SAMVAAD

- Recently Government e-commerce portal GeM has launched a national outreach programme, **GeM Samvaad**, to bring on-board more local sellers.
- **Government e Marketplace (GeM)** is the **national public procurement portal** offering end to end solutions for all procurement needs of Central and State Government Departments, PSUs, autonomous institutions and local bodies.
- The purchases through GeM by Government users have been **authorised and made mandatory** by Ministry of Finance.
- **GeM SPV**, registered under the companies Act, 2013, builds, operates and maintains the GeM platform.

10.10. GOVERNMENT INSTANT MESSAGING SYSTEM (GIMS)

- It is an **Indian equivalent of popular messaging platforms**, such as WhatsApp which **will be used** by Central and State government departments and organisations for **intra and inter organisation communications**.
- It is **designed and developed by National Informatics Centre (NIC)**.
- It is **considered safer** as the platform has been developed in India, **the server hosting it is installed within the country** and the **information stored would be in government-based cloud** — NIC-operated data centers.
- There are also **provisions for documents and media sharing** in keeping with the hierarchies in the government system.

10.11. UN INDEX ASSESSING E-COMMERCE READINESS

- India has ranked 73rd out of 152 countries** in a **Business-to-Consumer (B2C) E-commerce Index 2019**, improving its position from **80 in 2018 and 83 in 2017**.
- European nations hold eight of the top 10 spots** on the index with Netherlands occupying the top spot. The **only non-European countries** on the top 10 list are **Singapore (3) and Australia (10)**.
- The Index measures an economy's preparedness to support online shopping.
- Countries are scored on the access to secure internet servers, the reliability of postal services and infrastructure, and the portion of their population that uses the internet and has an account with a financial institution or mobile-money-service provider.**
- The Index has been released by the **United Nations Conference on Trade and Development (UNCTAD)**.

10.12. BRAHMOS MISSILES

- Recently, Defence Research & Development Organisation (DRDO), Indian Air Force (IAF) and BrahMos jointly successfully conducted two BrahMos supersonic cruise missiles tests one each from land and air platforms.
- BrahMos is a **joint venture India and Russia**.
- It is a **medium-range ramjet supersonic cruise missile** capable of being launched from submarines, warships, fighter jets or land and has a strike range of nearly 300 kilometres.
- The missile is **operational with the Indian Army, Navy and Air Force**.

10.13. MILITARY EXERCISES

- Hand in Hand:** The annual exercise **between India and China**, with the theme of counter-terrorism

under a United Nations mandate was held in Umroi, Meghalaya.

- Indra:** It is the second edition of Joint Tri Services Exercise between **India and Russia**.

10.14. GLOBAL CLIMATE RISK INDEX 2020

- Recently, the Global Climate Risk Index was released by international environmental think tank **Germanwatch**.
- Highlights of the report**
 - It assessed 181 countries and quantified impacts of climate change through economic losses, losses to GDP and fatalities to arrive at a ranking.
 - India's rank has worsened** from 14th spot in 2017 to 5th most vulnerable country to climate change in 2018.
 - India's high rank is due to severe rainfalls, followed by heavy flooding and landslides.
 - India has also recorded the **highest number of fatalities** due to climate change and the **second highest monetary losses** from its impact in 2018.
 - Japan topped** the list followed by the Philippines and Germany.
 - Between 1999 and 2018, poor countries had to face much higher impacts, where **seven out of ten countries affected are developing countries**.
 - Losses between 1999 and 2018** amounted to around **US\$ 3.54 trillion**.
- Germanwatch also releases **Climate Change Performance Index**.

10.15. GLOBAL CARBON PROJECT REPORT

- Recently, a **new study** by Global Carbon Project found that the growth in India's carbon dioxide emissions this year were likely to be **considerably lower** than the last few years.

Key findings of the report

- India's emissions in 2019** (2.6 billion tonnes) were likely to be only 1.8% higher than in 2018. This is significantly lower than the 8% growth that India showed last year and more-than-5% average growth over the last 10 years.
- The **growth in global carbon dioxide emissions** too is likely to come down this year, to **just 0.6% over last year**.

About Global Carbon Project

- The **Global Carbon Project** is a **Global Research Project of Future Earth** and a research partner of the **World Climate Research Programme**.

- It was **established in 2001** by a shared partnership between the International Geosphere-Biosphere Programme (IGBP), the International Human Dimensions Programme on Global Environmental Change (IHDP), the World Climate Research Programme (WCRP) and Diversitas.
 - This partnership constituted the Earth Systems Science Partnership (**ESSP**) which subsequently evolved into Future Earth.
- It seeks to **quantify global greenhouse gas emissions** and their causes. Its projects include global budgets for three dominant greenhouse gases- **carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O)** - and complementary efforts in urban, regional, cumulative, and negative emissions.

10.16. WMO PROVISIONAL STATEMENT ON THE STATE OF THE GLOBAL CLIMATE

- The **report** says that the global average temperature in 2019 (January to October) was about 1.1°C above the pre-industrial period.
- Average temperatures for the five-year (2015-2019) and ten-year (2010-2019) periods are **almost certain to be the highest on record**.
 - 2019 is on course to be the second or third warmest year on record.
- Average global atmospheric concentrations of carbon dioxide in 2018 had touched 407.8 parts per million (ppm), which was 147% of pre-industrial levels.
- This year, the daily average carbon dioxide concentration crossed 415 ppm for the first time ever, though it has receded after that.
- The final Statement on the State of the Climate with complete 2019 data will be published in March 2020.
- **About World Meteorological Organisation:** It is an intergovernmental organization with a membership of 193 Member States and Territories. It is specialised agency of the United Nations for meteorology (weather and climate), operational hydrology and related geophysical sciences.

10.17. TAJ TRAPEZIUM ZONE (TTZ)

- Recently, Supreme Court lifted the ban on construction, industrial activities and felling of trees in the Taj Trapezium Zone (TTZ).
- The Supreme Court bench allowed industrial units **which do not spread pollution and have No Objection Certificate** from the Ministry of Environment to function.
- Supreme Court bench said that **heavy industries will continue to be banned** as per SC order in 2018.
- The TTZ was established on 30 December 1996 **to protect the Taj Mahal from pollution through an order of Supreme Court**.

- The order banned the use of coal/ coke in industries located in the TTZ with a mandate for switching over from coal/ coke to natural gas, and relocating them outside the TTZ or shutting down.
- It is spread over the districts of Agra, Firozabad, Mathura, Hathras and Etah in Uttar Pradesh and the Bharatpur district of Rajasthan.
- It is an **'eco-sensitive area' having three world heritage sites namely Taj Mahal, Agra Fort and Fatehpur Sikri**.
- Taj Trapezium Zone Pollution (Prevention and Control) Authority has been constituted by the central government **to monitor programmes for protection and improvement of the environment in and around the Taj Mahal**.

10.18. EKAL VIDYALAYA ABHIYAN

- Recently, a non-profit organization, **Ekal Vidyalaya Sangathan reached the figure of 1 lakh schools across India**, highlighting its commitment towards social service.
- It is grassroots level non-governmental education & development movement that **operates in the remote villages of India and Nepal**. It started first in 1988 in the interior areas of Jharkhand.
- The main activity undertaken in this movement is to **run one-teacher schools (known as Ekal Vidyalayas)** in the remotest rural & tribal villages across all over India.
- Primary objective of Ekal Vidyalaya is **to ensure functional literacy among children of the village**.
- It involves **local teachers who teach in the regional language** and impart moral education, health care education and organic farming techniques.
- The Sangathan was awarded the **Gandhi Peace Prize in 2017** for its Contribution to **education for rural and tribal children** with gender and social equality.

10.19. DISHA ACT

- Recently, Andhra Pradesh Legislative Assembly passed '**Andhra Pradesh Disha Act Criminal Law (AP Amendment) Act, 2019 and AP Special Courts for Specified Offences against Women and Children Act 2019** as a tribute to the veterinary doctor named Disha who was raped and murdered.
- **Features of act**
 - **Introducing Women & Children Offenders Registry** which will be made public and will be available to law enforcement agencies.
 - **Exclusive punishment of death penalty for rape crimes** where there is adequate conclusive evidence.
 - **Reducing the judgment period to 21 days:** The existing judgment period as per the Nirbhaya Act, 2013 and Criminal Amendment Act, 2018 is 4 months.

- **Stringent punishment for sexual offences against children**
- **Punishment for harassment of women through social media:** At present, no such provision exists in the Indian Penal Code.

10.20. JAGA MISSION

- Recently, Odisha Liveable Habitat Mission (OLHM) or Jaga Mission won the bronze at World Habitat Awards.
- It is **state government's initiative to grant land rights to thousands of slum dwellers.**
- Under the programme 1,725 slums were **surveyed using drones and GIS technology**, while door-to-door household survey also conducted to grant land rights certificates (LRCs) to 52,682 families.
- **Drones mapping slums drastically cut down the time consumed** in the exercise, which would have taken 12 years if done by traditional methods.
- **Exercise also involved community mobilisation** to get the slum dwellers to agree and cooperation in the exercise.

World Habitat Award

It is annual award is given by **World Habitat, a UK-based organisation** in partnership with UN-Habitat, in **recognition of innovative outstanding and revolutionary ideas, projects, and programmes** across the world.

10.21. FIT INDIA SCHOOL GRADING SYSTEM

- Recently, Prime Minister launched the Fit India School grading system for **schools across the country.**
- The Fit India School **rankings have been divided into three categories** -The Fit India Schools, which is the first level of ranking, Fit India School (3 star) and Fit India School (5 star).
- The level of ranking will depend on **how much importance the school gives to inculcating overall fitness among its students and teachers and infrastructural facilities available** for fitness activities.

10.22. RISAT-2BR1

- Recently, **ISRO** successfully launched RISAT-2BR1 on board **PLSV-C48** from Sriharikota.
- PSLV-C48 also carried **nine customer satellites** including one each from Israel, Italy and Japan and six from the USA as co-passengers.

About RISAT-2BR1

- RISAT-2BR1 is the **second radar imaging satellite** in the **RISAT-2B series** and along with the **CARTOSAT-3** is part of a group of satellites that will **boost India's earth imaging capabilities from space.**

- RISAT-2BR1 has a **powerful resolution** allowing two objects separated by **35-centimetre distance** to be distinctly identified and will cover a swathe of **5 to 10 kilometres.**
- The RISAT satellites are equipped with a **Synthetic Aperture Radar (SAR)** that can take pictures of the earth during day and night and also under cloudy conditions.
- The satellite will help in agriculture, mining, forestry and coastal management, soil monitoring, disaster management support and **round the clock border surveillance.**
- The satellite has a **mission life** of five years.

10.23. CLEARSPACE-1 MISSION

- The European Space Agency (ESA) is planning to launch a four-armed robot, Chaser, to clean up Earth's orbit in 2025.
- Chaser is to be developed by a Swiss start-up **ClearSpace** under ClearSpace-1 mission.
- Once launched into space, it will **grab the chosen piece of space trash, one at a time, using its robotic arms and fall back** towards Earth in a controlled descent.
- The target is a piece of junk called **Vespa**, around 800km above the Earth.
- Earth's orbit is home to more than 3,500 defunct satellites and an estimated 750,000 smaller fragments.
- All of these pieces are flying at a velocity of around 20,000km/h.
- More debris could lead to more collisions - a cascade effect known as the **Kessler syndrome** which may render space eventually inoperable for important services like navigation, communications, weather forecasting etc.

Other Similar missions

- **RemoveDEBRIS mission** is a satellite research project intending to demonstrate various **space debris removal technologies.** The mission is led by the Surrey Space Centre from the University of Surrey. Some technologies are:
 - **Net capture:** It involves a net that will be deployed at the target CubeSat.
 - **Harpoon Capture:** Which will be launched at a target plate made of "representative satellite panel materials"
 - **Vision-based navigation:** Using cameras and LiDAR (light detection and ranging), the platform will send data about the debris back to the ground for processing.
 - **De-orbiting process:** As it enters Earth's atmosphere, the spacecraft will burn up, leaving no debris behind.
- Japan earlier launched a cargo ship which will use a 700m long tether **to remove some of the debris from Earth's orbit.** The tether, made of aluminium strands and steel wire, is designed to slow the debris, pulling it out of orbit.

10.24. WI-FI CALLING

- Bharti Airtel recently introduced India's first Voice over Wi-Fi (VoWiFi). Reliance Jio also followed the suit.

More about VoWiFi

- VoWiFi is a Wi-Fi-based **Voice over Internet Protocol (VoIP)** service, which allows users to make high definition (HD) voice calls using Wi-Fi even in places with poor or no cellular network.
- Calls made over VoWiFi provides users with a **shorter call connection time** along with **superior call quality** compared to calls made over VoLTE or any existing cellular technology.
- Users **don't have to pay extra** for these calls as it is using a Wi-Fi network. VoWiFi service does not need any separate app or a new number or any log-in to work.
- This is similar to a voice call using WhatsApp or any other over-the-top messaging platform, but here the **call is from one number to another**, and not using an app.

10.25. COMET 2I/BORISOV

- It has become the **second interstellar object** to be identified till date to have passed through our solar system. (First was 1I/Oumuamua spotted in 2017)
- Objects born in our solar system travel in elliptical orbits around the sun **while interstellar bodies follow the hyperbolic path.**
- It was confirmed that **2I/Borisov has a more hyperbolic path than any other comet** which has been studied to date.
- Interstellar objects can **provide unique data about the star systems of their origin**, particularly about their building blocks.

10.26. NASA SELECTS SITE ON ASTEROID BENNU FOR SAMPLE COLLECTION MISSION

- The site designated as '**Nightingale**' has been **selected for sample collection by mission known as OSIRIS-Rex** by NASA.
- This site is **located near North pole of Asteroid Bennu**. So, temperatures in the region are lower than elsewhere on the asteroid and the surface material is well-preserved.
- Its regolith or rocky surface material is dark and crater is relatively smooth and is thought to be **relatively young, and the regolith is freshly exposed.**
- OSIRIS-Rex mission also selected 'Osprey' as a backup sample collection site, if any significant disturbance to Nightingale's surface would make it difficult to collect a sample.

10.27. NAVIC AS ALLIED SYSTEM OF US

- Recently, the US congress has agreed to designate India's NavIC as its allied navigational satellite system **along with Galileo of European Union and QZSS of Japan.**
- Also, US **designated Russia's GLONASS and Chinese Beidou as a "non-allied system"**. It means that US satellite navigation system will not co-operate or exchange data with these satellite navigation systems.
- The designation of India's NAVIC as an "allied system" is part of the American effort to develop a **prototype program for Multi-Global Navigation Satellite System (GNSS) receiver development.**
 - A Multi-GNSS receiver is the system able to calculate position, velocity and time by receiving the satellite signals broadcasted from multiple navigation satellite systems.
 - It helps to achieve high position accuracy with increased number of satellites compared to GPS-only positioning.

10.28. GOLD-COATED FUNGI

- It is a naturally occurring strain of the **Fusarium oxysporum** (fungi), discovered recently in Australia.
- Normally, fungi play an essential role in the degradation and recycling of organic material, such as leaves and bark, as well as for the cycling of other metals, including aluminium, iron, manganese and calcium.
 - But gold is very chemically inactive metal that makes this discovery important.
- The fungi attaches gold to their strands by dissolving and precipitating particles from their surroundings through a process of oxidization.
- Moreover, here gold serves as a catalyst, helping the fungus digest certain carbon foods which makes it **grow larger and spread faster** than those that don't interact with gold.
- Its discovery indicates a potential to use fungi for
 - **bioremediation to recover gold from waste.**
 - detecting **larger gold deposits below the surface** for less environmentally damaging and more cost-effective drilling.

10.29. INDIA'S SCIENCE PUBLICATIONS

- As per recent U.S.'s National Science Foundation (NSF) data, India has become the world's 3rd largest publisher of science and engineering articles.
- Top position is occupied by China, accounting for 20% of scientific articles, followed by U.S. (16%). India now accounts for 5.31% of science and engineering publications.

- U.S., EU and Japan are more specialized in health sciences where India and China are specialized in engineering.

10.30. PORTUGAL SETS UP GANDHI PRIZE

- Portuguese Prime Minister Antonio Costa recently announced setting up of a Gandhi Citizenship Education Prize.
- The announcement was made while attending the second meeting of the **National Committee for the Commemoration Mahatma Gandhi's 150th Birth Anniversary**.
- The prize would be **inspired by Gandhi's thoughts and quotes** and **will be given every year**.
- The **first edition** of the prize would be **dedicated to animal welfare**.
- Prime Minister of Portugal is the **only foreign Prime Minister to be a member of the National Committee for Commemoration of 150th Birth Anniversary of Mahatma Gandhi**.
- The National Committee was constituted for commemorating the 150th birth anniversary of Mahatma Gandhi at the national and international level.
- This Committee is chaired by the President and includes Vice-President, Prime Minister, Chief Ministers of all states, representatives from across the political spectrum, Gandhians, thinkers, and eminent persons from all walks of life.
- The Committee also has two former Secretaries-General of the United Nations - Kofi Annan and Ban Ki-Moon as its member.

10.31. SAHITYA AKADEMI AWARDS 2019

- Recently, Sahitya Akademi announced its annual Sahitya Akademi Awards in 23 languages. Award for Nepali will be declared later.
- Sahitya Akademi Awards are given **only to Indian citizens for the most outstanding books of literary merit** published in India in last 5 years in **any of the major Indian languages recognised by the Akademi**.
 - Besides the **22 languages enumerated in the Constitution of India**, the Sahitya Akademi has recognised **English and Rajasthani language**.
 - The winners will be honored with an engraved copper-plaque, a shawl and prize money of Rs 1 lakh.
 - Sahitya Akademi award is the **second-highest literary honour** by the Government of India, **after Jananpith award**.
- **About Sahitya Akademi, India's National Academy of Letters:**
 - It is the central institution for literary dialogue, publication and promotion in the country and

the only institution that undertakes literary activities in 24 Indian languages, including English.

- It was setup by the Government of India in 1954 but it functions autonomously.
- It is registered as a society under the Societies Registration Act, 1860.
- It also undertakes literary exchange programmes with various countries to promote Indian literature beyond the shores of India.

10.32. INDIAN CULTURE PORTAL

- The Ministry of Culture (MoC) recently launched the **Indian Culture web portal**.
- It is the first government authorized portal where knowledge and cultural resources of various organizations of MoC are now available in public domain on a single platform.
- It was developed by a team from the **Indian Institute of Technology (IIT), Bombay** while the curation of the data has been done by **Indira Gandhi National Open University (IGNOU)**.
- This project is a part of the Prime Minister's **Digital India** initiative to showcase information about the rich tangible and intangible cultural heritage of India both at home and abroad.
- Content available on the portal comprises mainly of rare books, e-books, virtual galleries, Indian National Bibliography, cuisine, UNESCO world heritage sites, Musical Instruments of India etc.
- The content on the portal is currently available in **English and Hindi**, with a vision to expand it in other regional languages in future.

10.33. 100 YEARS OF ASSOCHAM

- Recently, Associated Chambers of Commerce and Industry of India (**ASSOCHAM**) has **completed 100 years of its existence**.
- It is the **leading Indian trade association** which was **established in 1920** by a group of chambers of commerce led by the Calcutta Traders Association.
- Its aim is to **nurture balanced economic, industrial, and social development** by sensitizing policy makers and legislators to associated local and global issues.
- It **continuously interacts with the Central and State Governments** and play an important role in the **shaping of India's Economic, Trade, Fiscal and Social policies**.
- It **has over 40 Expert Committees which regularly take up** national and global issues of prime importance to the interests of its members.
- It also organizes important workshops and coordinate interactive sessions with the policy makers.
- It is **headquartered at New Delhi**.

10.34. NATIONAL FLORENCE NIGHTINGALE AWARD

- Recently, the National Florence Nightingale Award 2019 was awarded to 36 awardees.
- Lini Puthuserry was awarded posthumously who **passed away while on duty** caring for a NIPAH infected patient in Kerala.
- These awards were instituted in the year 1973 by the Government as a mark of recognition for the meritorious services rendered by nurses to the society.
- The 2019 awards have been transferred by the Ministry of Health & Family Welfare (Nursing Section) to Indian Nursing Council.
- Florence Nightingale, (also called as Lady with the Lamp), was a British nurse, statistician, and social reformer who was the foundational philosopher of modern nursing.
- The WHO has also announced **2020 as the year of the nurse and mid-wife**. 2020 will also mark the 200th birth anniversary of Florence Nightingale.

10.35. ROHTANG TUNNEL RENAMED AS ATAL TUNNEL

- Recently, Prime Minister named Rohtang tunnel as Atal Tunnel.
- Rohtang tunnel is 8.8-kilometre long tunnel, through Pir Panjal Range, is the world's longest tunnel above an altitude of 3,000 metres.
- It is being built by **Border Roads Organisation (BRO)**.
- It will provide all weather connectivity to Manali in Himachal Pradesh with Leh, Ladakh, and Jammu Kashmir.

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11. GOVERNMENT SCHEMES IN NEWS

11.1. AMRUT

Why in News?

Ministry of Housing and Urban Affairs (MoHUA) has decided to extend the **Atal Mission for Rejuvenation and Urban Transformation (AMRUT)** by two more years till **March 2022** as the set targets are not yet met (**initially planned for 5 years 2015-20**).

Objectives	Key features
- To ensure that every household has access to a tap with the assured supply of water and a sewerage connection. - To increase the amenity value of cities by developing greenery and well maintained open spaces (e.g. parks). - To reduce pollution by switching to public transport or constructing facilities for non-motorized transport (e.g. walking and cycling).	- The category of cities that have been selected under AMRUT is: - All Cities and Towns with a population of over one lakh with notified Municipalities as per Census 2011, including Cantonment Boards (Civilian areas), - All Capital Cities/Towns of States/ UTs, not covered in above - All Cities/ Towns classified as Heritage Cities by MoHUA under HRIDAY Scheme, - Thirteen Cities and Towns on the stem of the main rivers with a population above 75,000 and less than 1 lakh, and - Ten Cities from hill states, islands and tourist destinations (not more than one from each State). Central assistance is to the extent of 50% of project cost for cities and towns with a population of up to 10 lakhs and one-third of the project cost for those with a population of above 10 lakhs. State annual action Plans are submitted by the states to the centre for broad concurrence based on which funds are released. States will transfer funds to urban local bodies within 7 days of transfer by central government and no diversion of funds to be made failing which penal interest is charged. 10% of the budget allocation is given to states and union territories as incentive based on the achievement of reforms during the previous year. - The outcomes are valued by citizens, particularly women, and indicators and standards have been prescribed by the Ministry of Urban Development (MoUD) in the form of Service Level Benchmarks (SLBs). The mission promises 139 lakh water connections by March 2020, 145 lakh sewer connections, storm water drainage projects, parks and green spaces and LED streetlights. - As per the data, over the last five years, - only 9.2% of the total outlay of the mission has been utilized, - about 46% of water connection and 28.3% of sewer connection targets have been achieved. (which are the two major components of the mission).

11.2. MISSION ANTYPDAYA

Why in news?

As per the **Mission Antyodaya survey 2019**, Tamil Nadu's Molugamboondi has topped the rankings of **Gram Panchayats (GP)** in the country, based on implementation of programmes under Mission Antyodaya.

Objectives	Salient Features
To address the multiple dimensions of poverty in a time bound manner through a convergence of resources, both financial and human to provide an opportunity for transformational changes.	- Mission Antyodaya under Ministry of Rural Development is a convergence and accountability framework which aims to optimise use of resources allocated by 27 Ministries/ Department of the Government of India under various programmes for rural development. - It is envisaged as state led initiative with Gram Panchayats as focal points of convergence efforts. GP is the basic unit for planning, monitoring transformation and for ranking on the basis of objective criteria. Key Processes under Mission Antyodaya: - Carry out baseline survey of households and monitor the progress periodically. Presently, it covers measurable outcomes affecting the lives of 1,00,00,000 households in 5,000 rural clusters or 50,000 Gram Panchayats. - Ensure convergence of programmes/ schemes targeted towards development of rural areas. - Institutionalize partnerships at Gram Panchayat/cluster between PRIs, community organizations, NGOs, SHGs, institutions and field level functionaries of different departments (e.g., ASHA workers, Anganwadi Workers, etc.) - Promote enterprise through partnership with institutions and professionals. Key Outcomes envisaged: Strong infrastructure base for selected GPs/clusters through prioritized implementation of schemes in line with the Gram Panchayat Development Plan (GPDs)/cluster development plans. Effective social capital promoting participatory planning and implementation of the schemes engaging wide range of stakeholders at GP/cluster.

- **Enhanced economic opportunities** through diversified livelihoods including non-farm sector, skilling of rural youth and women, development of value chains and promotion of enterprise.
- **Strengthened democratic processes** through capacity building of PRIs, public disclosures, GP level formal and social accountability measures such as social audit.
- **Mission Antyodaya Survey 2019:**
 - Annual survey on measurable outcomes is conducted at Gram Panchayat level. It is carried out coterminous with the **People's Plan Campaign (PPC)** of **Ministry of Panchayat Raj** and it lends support to the process of participatory planning for GPDP.
 - 112 parameters have been covered for scoring GPs in 2019 as opposed to 46 parameters in 2017-18.
 - These parameters cover all the 29 subjects transferred to the GPs as per the 11th schedule of the Constitution.
 - **Kerala's Gram Panchayats** have the **highest average score** (69 out of 100), followed by **Gujarat** and **Tamil Nadu**. Puducherry has the highest average score amongst union territories followed by Daman and Diu.
 - Maximum Gram Panchayats (around 39%) across the country fell in the score range of 31-40 out of 100.

11.3. PRADHAN MANTRI- ANNADATA AAY SANRAKSHAN YOJANA (PM-AASHA)

Why in news?

Less than 3% of the sanctioned amount of pulses and oilseeds for this season have been procured so far under the PM-AASHA scheme.

Objective	Salient Features
To ensure that farmers get remunerative prices for their produce.	● Under Ministry of Agriculture, PM AASHA aims to plug the gaps in procurement system, address issues in MSP system and give better returns to farmers. ● It is integral to the holistic approach for doubling farmer's incomes by 2022. ● This umbrella scheme includes three mechanisms: ○ Price Support Scheme (PSS): Under this, physical procurement of pulses, oilseeds and copra will be done by Central Nodal Agencies. ✓ Besides National Agricultural Cooperative Marketing Federation of India Ltd (NAFED), FCI will also take up procurement of crops. ✓ The expenditure and losses due to procurement would be borne by the Centre. ○ Price Deficiency Payment Scheme (PDPS): This will cover all oilseeds for which MSP is notified and Centre will pay the difference between the MSP and actual selling price to the farmer directly into his bank account. ✓ Beneficiaries include farmers who sell their crops in recognized mandis within the notified period. ✓ This approach does not involve direct market intervention or physical procurement. Market prices are set by normal supply and demand forces. ○ Pilot of Private Procurement & Stockist Scheme (PPPS): In the case of oilseeds, the States will have the option to roll out PPSS in select districts where a private player can procure crops at MSP when market prices drop below MSP. ✓ The private player will then be compensated through a service charge up to a maximum of 15% of the MSP of the crop. ○ These sub schemes complement the existing schemes of the Department of Food and Public Distribution for procurement of paddy, wheat and other nutri-cereals and coarse grains along with Ministry of Textile's schemes for cotton and jute, where procurement takes place at MSP.

11.4. PRADHAN MANTRI VAN DHAN YOJANA (PMVDY)

Why in News?

Recently the Tribal Cooperative Marketing Development Federation of India, celebrated the completion of **'100 days of Pradhan Mantri Van Dhan Yojana (PMVDY)'**.

Objective	Key Features
● To support Minor Forest Produce (MFP) market development and ensuring fair returns to the tribal gatherers. ● Forming clusters of tribal Self-Help Groups and strengthening them into Tribal Producer Companies. ● To help increase tribal income through Value Addition as it	● It is an a Market Linked Tribal Entrepreneurship Development Program targeting livelihood generation for tribals by harnessing the wealth of forest i.e. Van Dhan. ● It aims to tap into traditional knowledge & skill sets of tribals by adding technology & IT to upgrade it at each stage and to convert the tribal wisdom into a viable economic activity. ● It shall provide enhanced livelihood to about 45 lakhs tribal gatherers in one year. ● It shall promote and leverage the collective strength of tribals to achieve a viable scale to take on the predatory market forces in the areas where these are still prevalent. ● The implementation will be done through the Ministry of Tribal Affairs as Nodal Department at the Central Level and Tribal Cooperative Marketing Development Federation of India (TRIFED) as Nodal Agency at the National Level.

has the potential to change the tribal-rural economic system.

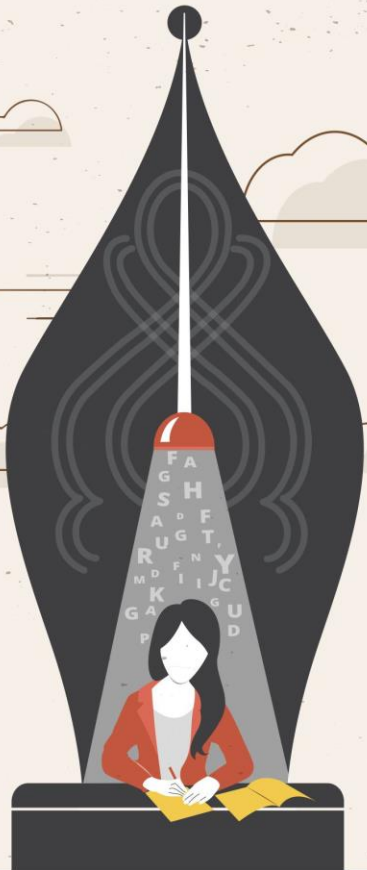
- At unit level, aggregation of produce would be done by 10 SHGs having about 30 members each forming **Van Dhan Vikas 'Samuh'**.
- **Van Dhan Vikas Kendra (VDVKs)** will be established for providing capacity building training and skill upgradation and value addition facility and setting up of primary processing.

11.5. INTEREST SUBVENTION SCHEME FOR MSMEs

Why in news?

Ministry of Micro, Small and Medium Enterprises has updated the **Interest Subvention Scheme guidelines** for MSMEs to boost their productivity and access to credit at reduced cost.

Objective	Salient Features
• To increase productivity and provides incentives to MSMEs for onboarding on GST platform which helps in formalization of economy, while reducing the cost of credit.	• Launched in 2018, the scheme provides a 2% interest subvention on fresh or incremental loans for all GST registered MSMEs having valid Udyog Aadhar Number (UAN). • It aims at encouraging both manufacturing and service enterprises. • It will be in operation for a period of two financial years FY 2019 and FY 2020. • Term loan/ working capital extended during the FY 2019 and FY 2020 would be eligible for coverage. • The term loan or working capital should have been extended by Scheduled Commercial Banks. • In order to ensure maximum coverage and outreach, all working capital or term loan would be eligible for coverage to the extent of Rs100 lakh during the period of the Scheme. • Exceptions: MSMEs already availing interest subvention under any of the Schemes of the State / Central Government will not be eligible under the proposed Scheme. ◦ The loan accounts on the date of filing claim should not have been declared as NPA. • Small Industries Development Bank of India (SIDBI) is the national-level nodal implementation agency for the scheme. Recent Modifications: • Trading activities without UAN have also been made eligible for the scheme. Requirement of UAN has been dispensed with for units eligible for GST.



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