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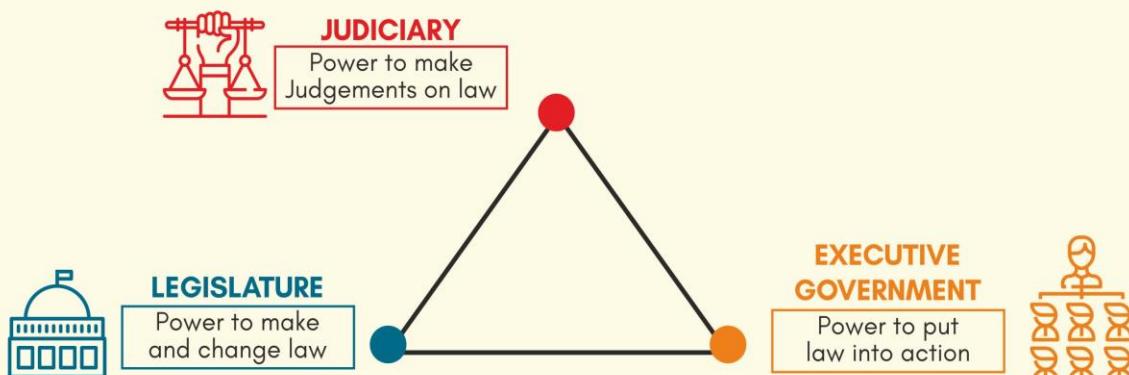
Why in news?

The act of the Supreme Court staying implementation of three farm laws was seen by many as an act of judicial activism/overreach.
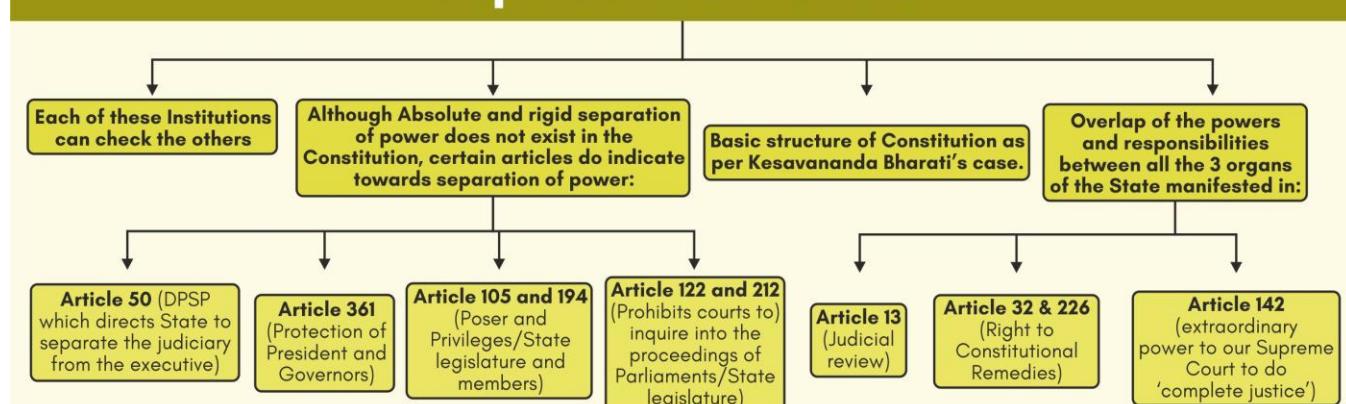
Judicial activism and Judicial overreach

- **Judicial activism**: Judicial activism is a judicial philosophy that motivates judges to depart from the traditional precedents in favour of progressive and new social policies. Judicial activism is manifested when the Supreme Court (or High Court) becomes an activist and compels the authority to act and sometimes also direct the government, government policies and also administration.
  - o **Instances of judicial Activism by the Supreme Court include**
    - ✓ Directing the Centre to create a **new policy to handle drought**
    - ✓ Directing the Centre to **set up a bad loans panel**
    - ✓ Reforming Board for the Control of Cricket in India (a private body)
- **Judicial Overreach:** There is a very thin line between activism and overreach. Judicial Overreach refers to an extreme form of judicial activism where arbitrary and unreasonable interventions are made by the judiciary into the domain of the legislature or executive. This is a situation where the court encroaches upon the role of the legislature by making laws. **Instances of judicial overreach by the Supreme Court include**
  - o Denying the executive any role in the appointment of judges by **instituting collegiums** (an extra-constitutional body).
  - o **Invalidating the National Judicial Accountability Commission Act, 2014** seeking to ensure transparency and accountability in higher judiciary.

SEPARATION OF POWERS

JUDICIARY — Power to make Judgements on law

LEGISLATURE — Power to make and change law

EXECUTIVE GOVERNMENT — Power to put law into action

Separation of Powers

- Each of these Institutions can check the others
- Although Absolute and rigid separation of power does not exist in the Constitution, certain articles do indicate towards separation of power:
- Basic structure of Constitution as per Kesavananda Bharati's case.
- Overlap of the powers and responsibilities between all the 3 organs of the State manifested in:

- **Article 50** (DPSP which directs State to separate the judiciary from the executive)
- **Article 361** (Protection of President and Governors)
- **Article 105 and 194** (Poser and Privileges/State legislature and members)
- **Article 122 and 212** (Prohibits courts to) inquire into the proceedings of Parliaments/State legislature)
- **Article 13** (Judicial review)
- **Article 32 & 226** (Right to Constitutional Remedies)
- **Article 142** (extraordinary power to our Supreme Court to do 'complete justice')

Causes of Judicial activism and Judicial Overreach:

- **Asymmetry of power:** Supreme Court is the most powerful branch of governance. It's every judgment is binding on the other two branches (legislature and executive) and it can strike down their actions as well as their laws.
- **Public Interest Litigation (PIL):** Introduction of the concept of PIL did away with the doctrine of 'locus standi' (no one except the affected person can approach a court for a legal remedy). PIL permitted any member of the society to file a case for appropriate directions against any injustice. Consequently, the expectations of the public went high.
  o This resulted in the **demands for judicial intervention to improve the administration** by giving appropriate directions for ensuring compliance with statutory and constitutional prescriptions.
  o Thus, PIL introduced a **new dimension to the judiciary's involvement** in public administration.
- **Lackadaisical approach of other organs:** Lax functioning of the legislature and executive may result in corruption, delay, non-responsiveness, or inefficiency in the governance. These things create a vacuum in governance. Most of the time such vacuums are filled by the judiciary.
  o **For example:** The 1997 Vishakha guidelines for the prevention of sexual harassment of women at the workplace were an outcome of the inability of the legislature to address this matter.
- **Other factors:** Growing consciousness of people for their rights, **globalization, active media and civil society organizations,** concerns for the environment among others are also considered important reasons for judicial activism and judicial overreach.

Concerns over Judicial overreach

Through, **judicial activism the Supreme Court has done a tremendous amount of good.** However, in many cases; the judiciary has used excess powers which can never be treated as judicial adjudication and even within the normal bounds of judicial activism. **Such judicial overreach has given rise to the following concerns:**

- **Undermining the doctrine of the separation of power:** Under the Constitution, all the organs of the State have their own broad spheres of operation. The power vested in the Supreme Court through Article 142 of the Constitution is extraordinary.
  o **Frequent use of this power, to issue judicial decrees,** is considered as a violation of the doctrine of the separation of power.
- **Negligence of the challenges faced by legislature and Executive**: The work of Legislature and executive is a challenging one. This is because their works depend upon the **4F i.e. Fund, function, framework, and functionary.** Sometimes the judiciary passes the order without keeping in mind all these 4F. Such orders may harm the economy which can impact the overall well being of the people.
  o For example: **Cancelling of coal blocks allocations and spectrum allocations** are seen as the major cause of poor health of the financial institutions of the country.
- **Lack of accountability of the judiciary:** Judiciary as an institution is **not accountable to the people** in the same way as the legislature and the executive. Further, the judiciary also has the power to punish for 'Contempt of court.' This way the judiciary may evade public criticism for many of its actions.
- **Threat to the credibility of the judiciary:** Entry into the legislative domain and inability to uphold the law may diminish the image of the judiciary.

Way ahead

The Supreme Court has, on various occasions, highlighted the **importance of judicial restraint**. The judiciary must therefore exercise self-restraint and eschew the temptation to act as a super-legislature.

Judicial activism is appropriate when it is in the domain of legitimate judicial review. However, it should not be a norm nor should it result in judicial overreach.

1.2. REGULATION OF NGO'S IN INDIA

Why in news?

Recently, the Ministry of Home Affairs (MHA) tightened oversight on funds received by non-governmental organisations (NGOs).

More about News

- MHA has laid out a **series of guidelines and charter to make NGOs and banks comply** with new provisions of the amended **Foreign Contribution (Regulation) Act, 2010 (FCRA).**
- The charter for banks says that "donations received in Indian rupees" by NGOs from **"any foreign source even if that source is located in India at the time of such donation" should be treated as "foreign contribution".**
- Also, it stated foreign contribution has to be **received only through banking channels** and any violation by the NGO or by the bank may invite penal provisions of FCRA.

NGOs and their importance

- NGO is defined by the World Bank as a **not-for-profit organization** that pursue activities to relieve suffering, **promote the interests of the poor, protect the environment, provide basic social services, or undertake community development.**
- These organisations are **not a part of the government**, but **have a legal status and are registered** as Trust, Society or Private Limited Non-Profit Company.
- Constitutionally NGOs are backed by:
  - **Article 19(1)(c)** which allows the right to form associations,
  - **Article 43** to promote cooperatives in rural areas,
  - **Concurrent List** mentions charitable institutions, charitable and religious institutions.

NGO's role
- Monitoring and evaluation of government policies and regulations
- Broadening government's accountability
- Social and environmental development
- Constructive conflict resolution like in the international arena Track II diplomacy

Need to regulate NGOs

- **Check misuse of foreign funds:**
  Governments are trying to check the misuse of foreign funding because if unchecked, can hamper the country's sovereignty and foreign money can be used to influence policy and political discourse in India.
  - For this reason, the government has banned 14,500 NGOs, registered under FCRA from receiving foreign funds.
- **Non-compliance:** Less than 10% of NGOs have complied with the rules and more than 90% do not submit their balance sheets. They are supposed to submit statements with the registrar of societies but they did not.
- **Hampering development projects:** According to the Intelligence Bureau report, NGOs such as Greenpeace, Cordaid and Amnesty are serving as tools for foreign policy interests of western governments. They are also accused of organising agitations and scuttling development projects in India which cost India's GDP 2-3% per year.
- **Religious and cultural encroachment:** NGOs are often seen as encroaching on tradition and culture of the people as well as misused their influence to sell foreign narratives, push vested interests and promote religious conversion.
  - Government has barred 'Compassion International' from funding Indian NGOs without its permission over allegations of religious conversions.

Provisions regarding Regulation of NGO in India

- **Foreign Exchange Management Act (FEMA), 1999:** There are certain NGOs that are registered under FEMA and continue to disburse foreign funds to various associations in India.
  - FEMA is regulated by the Ministry of Finance and was **introduced to consolidate and amend the law relating to foreign exchange** with the objective of facilitating external trade and payments.

- o However, Separate law the **FCRA, 2010 has been enacted under the Ministry of Home Affairs** to monitor foreign funds donated to NGO's.
- **Foreign Contribution Regulation Act 2010:** Foreign funding of voluntary organizations in India is regulated under the FCRA to ensure that the recipients adhere to the stated purpose for which such contribution has been obtained.
  - o It **consolidates the law to regulate the acceptance and utilization of foreign contribution** by individuals or associations.
  - o **New rules under FCRA 2020 have the following provisions in relation to regulation of NGO's:**
    - ✓ prohibition of transfer of funds from one NGO to another
    - ✓ decrease of administrative expenses through foreign funds from 50% to 20%.
    - ✓ making Aadhaar mandatory for registration, while in case of a foreigner, they must provide a copy of the passport or the Overseas Citizen of India card for identification.
    - ✓ the foreign contribution must be received only in an account designated by the bank as 'FCRA account' in such branch of the State Bank of India, New Delhi
    - ✓ Insertion of Rule 9 – which deals with obtaining registration or prior permission to receive foreign funds and stop utilisation of foreign funds through enquiry.
- **Accreditation:** NITI Aayog has been appointed as the nodal agency for the purpose of registration and accreditation of NGOs seeking funding from the Government of India.
  - o The Aayog has been also tasked with maintaining database systems to manage and disseminate information relating to NGOs.
- **Bombay shops & Establishment Act 1948:** NGO registered under the Bombay shops & establishment Act, must pay Minimum Wage to that employee irrespective of the strength of employment.
- **Right to Information Act, 2005**: NGOs receiving substantial financing from the government is bound to give information to the public under the RTI Act.

Issues faced by NGO's
- **Lacks fund accessibility:** With new rules, many NGO's will not be able to access foreign funds because the scheme under which they receive these funds from donor agencies and larger NGOs, known as 'regranting' has been banned.
  - o Also, over-dependence on funds from the government dilutes the willingness of NGOs to speak out against the government.
- **Restriction to explore:** The amount NGOs can spend on administration has been cut from 50% to 20%, which mean many smaller NGOs will not be able to employ enough staff, hire experts and implement strategies they require to grow.
- **Increased cost of transaction and distance:** With new rules under FCRA act NGOs will have to open an account with a Delhi branch of the State Bank of India. Which could be a thousand kilometers away for many NGO's and increase the transaction cost.
- **Hamper delivery of social welfare schemes:** Due to overregulation of NGOs under new FCRA rules will have far-reaching the consequences for delivery of government schemes in these fields of education, health and social welfare.
- **Accreditation of NGO's:** It is very difficult for National Accreditation Council to distinguish whether an organization wants to work for the cause or has been set up only for the purpose of receiving government grants.

Way Forward
- A **National Accreditation Council** consisting of academicians, activist, retired bureaucrats should be established to ensure compliance by NGOs.
- There should be **better coordination between Government and NGOs** to delivery of social welfare schemes efficiently rather than hampering their implementation.
- The role of NGO regulators should be to effectively secure **compliance with the laws in a fair, transparent and non-partisan manner, free from political influence** to enhance public trust and confidence in both the regulator and the NGOs.

Kindly refer to "Foreign Contribution (Regulation) Amendment Act, 2020" article in Monthly October 2020 for details on FCRA rules 2020.

1.3. REGULATION OF BIG TECH COMPANIES

Why in news?

There are multiple investigations worldwide going on the **abuse of monopolistic power by the Big Tech firms like Facebook, Google** etc.

Background

- Although many of Big tech companies started in the USA, **they have established a global presence**, and are continually looking to expand into markets currently not penetrated.
- Due to their dominance in the technology market, **big tech companies not only influence the economy but also society.**
- These companies are **shaping the way our society is progressing**.
- However, in recent times there have seen mounting evidence of the **spread of hate speech, disinformation, and conspiracy theories** by these major internet platforms.
- This has also led to **various antitrust cases being built and investigated against them,** calling upon their role and regulation of big tech companies to ensure their accountability in this emerging system.

> **Anti-trust laws**
> - Antitrust laws are those laws that prevents companies from working together to control prices unfairly or to create a monopoly.
> - **India's antitrust law, The Competition Act, 2002,** was fully constituted in 2009 replacing the Monopolistic and Restrictive Trade Practices Act of 1969.
> - Competition Act **monitors any economic activity that monopolizes competition within the market** and aims to protect consumers and small enterprises, and ensures the freedom of trade.
> - **Competition Commission of India** has been setup under 2002 act to regulate anti-competitive activity in the country.

Role played by Big tech companies in Society

Positive role	Negative role

- **Right to free speech and expression:** Big Tech companies provide citizens powerful platforms to transact, express themselves, seek out information, and consume entertainment.
  o Social media companies like Facebook, WhatsApp have **democratised communications**, weakening the power of traditional media to influence public opinion.
- **Doorstep services:** Big Tech has brought doorstep delivery of an extraordinary range of goods, services, and entertainment, which made it possible to live modern life through the Covid-19 pandemic.
- **Technology and innovation:** The superior use of technology by big tech companies and innovations according to need provides diversification and efficiency to consumers. E.g. Digitisation of financial services.
	- **Power without accountability**: Big Tech companies have been accumulating vast, unregulated powers controlling the media and economic power without any accountability. E.g. **Allegation on Big tech influencing elections in the US and Europe.**
	- **Anti-competitive behaviour**: E-commerce big techs pricing and promotion decisions can be managed subtly to favour some merchants and their private label products which breaks millions of small merchants.
	  o This could also **lead to the acquisition of smaller, fast-growing companies**, thereby snuffing out the competition before it gets a chance to establish itself. E.g. Acquisition of WhatsApp and Instagram by Facebook.
	- **Incite public behaviour**: Big techs handling social media platforms like, Facebook, Twitter have the power to manipulate narratives, spread hate speech, disinformation etc and therefore, incite public behaviour, which can become a dangerous force multiplier for fomenting hate and violence.
	  o **Example:** Centre had to recently issue a notice to Twitter for tweets with 'farmer genocide' hashtag.
	- **Cybercrimes:** The potential of the Internet and its offshoots as in big techs to disseminate potentially harmful content and cybercrimes such as rumours, inflammatory, provocative messages and child pornography.
	- **Violative of privacy:** in absence of data privacy laws, the personal data of users is harnessed by the platforms without seeking meaningful consent from the users.

In the light of the above negative role played by big tech companies, **our current legal and technical framework has to evolve to regulate all these emerging Big Tech powers.**

Issues in regulating Big tech companies

- **Uncoordinated regulation globally**: With their geographical reach, there is no global monitoring and regulatory framework that accommodate the different priorities of countries, support inter-jurisdictional coordination and minimise regulatory fragmentation risk regarding big tech companies.
- **Tax avoidance:** Big tech companies are exploiting gaps and mismatches under Base erosion and profit shifting (BEPS) tax rules to avoid paying tax.
  - o For this Indian government also came with **'Equalization Levy'** to tax digital transactions and online advertisement by non-resident companies.
- **Absence of Data Privacy Law:** India does not have a personal data protection law, to prevent Big Tech firms from misusing personal data.
- **No sovereign control over data**: As data in big tech companies moves easily with no boundaries, it becomes difficult to claim control over this data. Big tech companies have **multiple servers around the world** storing this data.
  - o A key strategy adopted by countries has been data localization providing for mandatory storage or processing of data within the territory of a given country.

Regulatory mechanism for big tech in India

Information Technology (IT) Act, 2000
- **Governs all activities related to the use of computer resources** and covers all 'intermediaries' who play a role in the use of computer resources and electronic records.
- **Confers on the Central and State governments the power to issue directions** "to intercept, monitor or decrypt...any information generated, transmitted, received or stored in any computer resource".

Competition Commission of India (CCI)
- To **promote and sustain an enabling competition culture** through engagement and enforcement.
- **Determines whether a tech entity** has abused its dominant position.
- Empowers the CCI to **divide a dominant firm to ensure** that such firm does not abuse its dominant position may finally be invoked.

Enforcement Directorate (ED)
- **Look into FDI case** in business–to–consumer (B2C) enterprises.

  - o Even, **RBI has also issued directions to digital payment system providers** to ensure that the entire data relating to payment systems operated by them is stored in a system only in India within a period of six months.
- **Legal challenges**
  - o India's **current regulatory framework is built around offline understandings** of market share, which limits the regulation of digital business models of big tech companies.
  - o **Section 79-II of the Information Technology Act, 2000**, currently exempts online intermediaries from liability for any third-party content shared on their platform.

Ways ahead

- **Agile regulation:** Big Tech should be fairly scrutinised by the regulators like Competition Commission of India to protect consumers' interest and maintain competition.
- **Taxation:** Economic activity that is based in India should be taxed appropriately in terms of transactions, income, and other earnings.
- **Data security:** There is a need to ensure that data is appropriately localised and that individuals are provided full privacy protection.
  - o In India the joint parliamentary committee working on the data protection bill for evaluating all these issues.
- **Dynamic and adaptable regulatory framework:** Regulatory framework must be integrated, flexible, dynamic, capable of adapting to technological and social change to stay ahead of fast-evolving technologies and competitive conduct.

- **Closing loopholes and gaps:** Need to close gaps across laws such as the Telegraph Act, the TRAI Act, the Information Technology Act and various competition laws and rules to make the regulation of big techs more comprehensive and efficient.
- **Cooperation to fight cybercrime:** Cooperation between technology services companies, law enforcement agencies and other countries is a vital part of fighting cybercrime and various other crimes that are committed using computer resources.

Conclusion

For the largest democracy and digital nation like India, there is an imperative need to harmonise regulatory framework for regulation of big tech companies and emerge as a true leader.

Equalisation Levy
- The purpose of Equalisation Levy is **to ensure fair competition, reasonableness and exercise the ability of governments to tax businesses that have a close nexus with the Indian market through their digital operations**.
- In India, Equalisation Levy was **introduced in 2016**, at 6% on payments received by a **non-resident service provider from an Indian resident (carrying on business or profession)** in respect of online advertising, provision of online advertising space and related services.
  - It was **limited to Business-to-business transactions** and compliance was required to be carried out by the payer
- **Finance Act 2020 has further expanded the scope of equalization levy** to non-resident e-commerce operators by introducing a new levy of 2%. This levy is effective from 1 April 2020.
  - **Both Business-to-business and business-to-consumer transactions are covered** and compliances are to be carried out by the non-resident e-commerce operator.

Related News
- A report published by United States Trade Representative (USTR) **found that India's DST (Digital Service Tax, referred as Equalisation Levy in India) is discriminatory to US companies**, and thus, is actionable under Section 301 (of Trade Act, 1974).
  - Section 301 of the **US Trade Act empowers the USTR to investigate a trading partner's policy** action that may be deemed unfair or discriminatory and negatively affects US companies and **take action, including tariff-based and non-tariff-based retaliation.**
- **Report finds that**
  - Equalisation Levy is **discriminatory because it applies only to non-Indian digital services providers**
  - **U.S. companies face an additional tax burden** under the DST
  - **Levy imposes a corporate tax on companies that don't have a physical presence** in India.
    - ✓ Equalisation Levy's **extraterritorial reach contravenes international tax principles**
- **India's response**
  - Equalisation Levy **is not discriminatory** but, on the contrary, **seeks to ensure a level-playing field with respect to e-commerce activities** undertaken by entities resident in India and those that are not resident in India or do not have a permanent establishment in India.
    - ✓ India based e-commerce operators are already subject to taxes in India for revenue generated from the Indian market.
  - levy does not discriminate against any US companies, **as it applies equally to all non-resident e-commerce operators, irrespective of their country of residence**
  - It does **not have extra territorial application** as it applies only on the revenue generated from India.
  - EL can also be seen as **additional safeguard against 'base erosion and profit shifting' (BEPS).** It is to ensure fairness, healthy competition, and to exercise the ability of governments.
    - ✓ BEPS refers to the exploitation of gaps and mismatches in tax rules by multinational corporation (MNC) to shift their profits to low-tax regimes.

1.4. INTERNET SHUTDOWNS

Why in News?

As per a recent report by UK-based privacy and security research firm Top10VPN, Internet shutdowns in 2020 cost India $2.8 bn, almost 70% of the total loss of $4 bn to the world economy.

Some key findings of the report

- **Economic impact**, of internet shutdowns, seen **in India was more than double the combined cost for the next 20 countries** in the list.

- **India continued to restrict Internet access more** than any other country — over 75 times in 2020.
- The report made a separate mention of the extended **curbs on Internet use in Kashmir, calling it the longest Internet shutdown in a democracy.**
- The restrictions have **negatively impacted the distribution of medicine, businesses and schools.**

About Internet Shutdown

- Report **defined internet shutdown as an intentional disruption of internet** or electronic communications for a specific population or location, to exert control over the flow of information. **It can be caused by:**
    - **Internet blackouts** where access to the internet is completely cut off.
    - **Social media shutdowns** where access to popular social media platforms like Facebook, WhatsApp are blocked.
    - **Throttling** where access to the internet is reduced to 2G speeds.
- Internet shutdowns **can happen at a national level,** where users across the entire country are unable to access the Internet, **or at a subnational (local) level,** where mobile and/or fixed Internet access in a state, city, or other localized area is cut off.

PROVISIONS REGARDING INTERNET SHUTDOWNS

	Provisions	**Who can order?**	**Duration of shutdown**
Before 2017	• Section 144 of CrPC (bars the assembly of five or more people in an area) • Indian Telegraph Act 1885.	DM/ SDM/ any executive magistrate empowered by state	Section 144: not more than 2 months &upto 6 months extension by state
After 2017	• Temporary Suspension of Telecom Services (Public Emergency and Public Safety) Rules, 2017: New rules by amending section 7 of the Indian Telegraph Act 1885. • Despite the 2017 rules, government has also often used the broad powers under Section 144.	• Only the Home Secretary of the Union or a state can pass an order to be reviewed by a committee* within 5 days. • In "unavoidable circumstances", the order can be issued by an officer of the rank of Joint Secretary or above, authorised by the Centre or the state Home Secretary.	• Under Temporary Suspension of Telecom Services (Amendment) Rules, 2020order suspending telecom/internet Services shall not be in operation for more than 15 days.

Other Provisions for internet shutdown: Section 69(A) of the Information Technology (Amendment) Act,2008 gives the government powers to block particular websites, not the Internet as a whole.

*Review committee

At Central Level
Comprises Cabinet Secretary and Secretaries of the Departments of Legal Affairs and Telecommunications

At State level
Comprises Chief Secretary, Secretary Law or Legal Remembrancer In-Charge, Legal Affairs, and a Secretary to the state government (other than the Home Secretary

Argument in favor of Internet shutdowns

- **Prevent hate speech, fake news etc:** Official rationales for shutdowns includes combating fake news, hate speech, and related violence, securing public safety and national security, precautionary measures, and preventing cheating during exams etc.
- **Ensure peace and public stability:** Internet shutdown acts as a preventive measure used by the law & order administration as a last resort to address mass protests, civil unrest, curbing the spread of misinformation so as to ensure peace and public safety.
  - Governments are faced with sometimes **challenging situations that may threaten public order and national security**.
- **Avoid disruptive role:** In certain extreme situations where rumours through WhatsApp and other social media start playing a disruptive role, it may become necessary to have internet shutdowns.

Arguments against Internet shutdowns

- **Violate Human rights:** Internet shutdowns attack on civil liberties and the constitutional rights of the citizens. They not only curb dissent but give government excessive control over the dissemination of information and dominance over the narrative.
- **Economic cost:** India lost over $1.3 billion in internet shutdowns across the country making it the third-most economically affected country after Iraq and Sudan.
- **Fails to achieve the objective:** There is no conclusive evidence showing that Internet shutdowns lead to maintenance or restoration of public order.
- **Social cost:** Fundamental services such as education, health care and other public services are held back. Internet banking stops working. Agricultural extension services and emergency services may be unable to function.

> **Judgement related to Internet shutdowns in India**
> - **In January 2020 the Supreme Court while ruling on Jammu and Kashmir Internet shutdown made following observations:**
>   - Internet shutdowns can be of temporary period but not for indefinite period.
>   - Government to publish all orders imposing restrictions under Section 144.
>   - **Freedom of speech and expression through the medium of internet** is a **fundamental right under Article 19(1)(a)** of the Constitution.
>   - The Court had also said that any order with regard to Internet Shutdowns will come under Judicial Scrutiny.
>   - **Freedom of trade and commerce through internet** is also a constitutionally protected right under Article 19(1)(g).

Way forward

- Governments should identify best practices in addressing issues at their source, **prioritizing alternative measures to Internet shutdowns.**
- Governments need to do a **cost-benefit analysis of the impact of the cost of Internet shutdowns** before taking such action.
- Venture capitalists and investors should **incorporate Internet shutdowns as part of their risk assessment.**
- All **governments should document the reasons, time, alternatives considered**, decision-making authorities and the rules under which the shutdowns were imposed and release the documents for public scrutiny.

1.5. WHISTLE-BLOWING

Why in news?

Recently, the Vice-President of India has suggested all corporates to encourage whistle-blowing mechanism and provide adequate safeguards for the protection of whistle-blowers.

About Whistle Blowing

- Whistleblowing is the **act of drawing attention to an authority figure or public, to perceived wrongdoing, misconduct**, Corruption, fraud unethical activity within public, private or third-sector organisations.
- In this respect whistleblower can be a **current or former employee, director, officer, company secretary, supplier of goods or services or a volunteer.**
- Whistleblowers often **face reprisals from their employer, who may suffer reputational damage** as a result of the whistle being blown, or from colleagues who may have been involved in the illicit activities. Other problems faced by Whistleblowers includes:

- o **Unwillingness due to alienation:** Whistleblower may face alienation, hostility, resentment and harassment and isolation at work from peers and superiors, which makes employee unwilling to inform about misdoings.
  - o **Fear of retaliation, death, murder and risk to families:** E.g. Satyendra Dubay and Lalit Mehta, who were killed for whistle blowing.
- **Whistle blowing can be helpful by:**
  - o Limiting risk and potential damage to the employer caused due to malpractice, fraud, etc.
  - o Commitment towards identifying and remedying wrongdoing and encourages staff to communicate their concerns.
  - o Providing Strong workplace mechanism
  - o Generating Awareness in society.
- Whistleblowers can **blow the lid off corporate and financial scams,** therefore they need laws for protection.
  - o For Example: Edward Snowden, a former CIA employee who leaked classified information to the public.

Whistle blowing mechanism in India

- **Whistle Blowers Protection Act, 2014**:
  - o It provides **protection from harassment to persons making disclosure of corruption**, willful misuse of power or arbitrary use of discretion of any power by any public servant, besides keeping the identity of the whistle-blowers secure.
  - o It provides a **broad definition of a whistle blower** that goes beyond government officials and includes any other person or non-governmental organisation.
  - o The person may make **a public interest disclosure to a competent authority** even if they are prohibited under the Official Secrets Act (OSA), 1923.
  - o It also provides for a system to encourage people to disclose information about corruption or the wilful misuse of power by public servants, including ministers.
  - o It **does not apply to the armed forces of the Union**.
  - o **Disclosures can be made in writing or by email message** and contain full particulars and be accompanied by supporting documents, or other material.
  - o Any person aggrieved by any order of the Competent Authority may prefer an **appeal to the High Court within a period of sixty days** from the date of the order.
  - o Central Government shall ensure that **no person or a public servant who has made a disclosure under this Act is victimised by initiation of any proceedings.**
  - o Any person who negligently reveals the identity of a complainant will be punishable.
  - o **Whistle Blowers Protection (Amendment) Bill, 2015** was brought in Lok Sabha to amend 2014 Act but it lapsed with dissolution of Lok Sabha in 2019.
- **SEBI PIT (Prohibition of Insider Trading) Regulations:** to reward whistleblowers and other informants for sharing information about insider trading cases.

  - o Insider trading refers to trading of securities while in possession of Unpublished Price Sensitive Information about particular securities.
- **Companies Act, 2013:** It makes it mandatory for entities listed on stock exchanges to set up an audit committee to investigate whistleblower complaints.

Gaps in Whistleblowing mechanism

- **Issues with Whistle Blowers Protection Act, 2014**
  - o There has been **delay in operationalising Whistle Blowers Protection Act.** Due to this, some persons have been victimized, assaulted or killed allegedly for their role as RTI activists / whistleblowers.

Ethical Perspective of Whistle Blowing
- There are various ethical issues involved in whistleblowing such as –
  - o **Being disloyal towards organisation & sharing knowledge of wrongdoing** for the benefit of others.
  - o **Moral commitment** towards society.
  - o **Gaining mistrust** of its fellow workers.
- It brings two moral values, **fairness and loyalty, into conflict.**
- **Taken to its extreme from a loyalty perspective**, whistle-blowing may involve agonizing conflicts when, for example, it involves violating the trust of co-workers who have engaged in wrongdoing or jeopardizing one's "team player" status by going against the prevailing winds in an organization that fosters unethical behavior.
- While loyalty as an ethical value should never be placed above **one's ethical obligation to act responsibly and be accountability** for one's actions including reporting wrongdoing in the best interests of the organization and its stakeholders.

- o There is **no penalty against any public servant** who may be victimizing the complaint.
- o It also **does not protect witnesses during investigation** and any trial
- **No holistic Powerful Legislation for corporate/private individuals:** The absence of holistic law clarifies all the vagueness with the establishment of whistleblower mechanism, which is a major way of achieving efficient corporate governance.
- **Lack of trust in investigation system:** There are concerns about impartiality and unfair investigation of results, which may give wrong decision against whistle blowers**. Therefore, employee confidence in whistleblowing programmes remains low.**
- **No effective implementation in organisations**: Whistleblower Policy document is not being used to provide guidance to employees on the whistle- blower programme in many companies.

Conclusion

Even having protection to whistleblowers threats to their life still remains, which requires further strengthening of regulation and compensation and remedies for aggrieved whistleblowers.

2. INTERNATIONAL RELATIONS

2.1. INDIA-UNSC

Why in news?

India officially began its eighth term as a non-permanent member of UNSC for the 2021-22 period.

More on news

- **India will serve as the president of the council**, a position held by each of the members in turn for one month, according to the alphabetical order of the member states' names.
  - Presidency **entails presiding over council meetings, coordinating actions, deciding the content of UNSC debates and more.**
- **India will also chair the crucial Taliban and Libya sanctions committees and the Counter-Terrorism Committee** of the UN Security Council during its tenure as non-permanent member.

Background

- India was elected to the UN Security Council in June along with Norway, Mexico, Ireland and Kenya.
- India had last assumed the role of a non-permanent member at the UNSC in 2011-12. Prior to that, it was a non-permanent member for 1950-51, 1967-68, 1972-73, 1977-78, 1984-85 and 1991-92.
- At UNSC, **India pledged to be guided by the five priorities** under the overarching theme of **NORMS: New Orientation for a Reformed Multilateral System**. They are new opportunities for progress, effective response to international terrorism, reforming multilateral systems, comprehensive approach to international peace and security and technology with a human touch. India will pursue these priorities through a **Five-S approach:** Samman (Respect), Samvad (Dialogue), Sahyog (Cooperation), Shanti (Peace) and Samriddhi (Prosperity).
- **India's entry into the UNSC coincides with the emergence of a new world order**, one marked by
  - systemic uncertainty,
  - absence of global leadership,
  - the steady division of the world into rival blocs, and
  - an age marked by unabashed pursuit of narrow national interests.
- The world has a pressing need for countries to stand up for a rules-based international order – one which is committed to protecting human security around the world.
- **India's pursuit of its interests at the UNSC should, therefore, reflect its material and geopolitical limitations**, and should be focused on a clearly identified agenda. As India looks for a productive tenure at the UNSC, various opportunities present themselves.

Opportunities for India in its two-year term

- **Making the UNSC effective and more representative:** The UNSC offers room for sustained diplomatic interaction between the major powers, who could minimize tensions and create new opportunities for cooperation. But the council is becoming less effective due to the deep divisions among the major powers. As the world's largest democracy with economic and military prowess, India is in a unique position to be the leader that will champion such cooperation.
  - At the same time, making the UNSC more representative has been one of India's demands since the end of the Cold War. India's campaign, in partnership with Brazil, Germany and Japan, to expand the UNSC must continue.
- **Strengthen climate change dialogues:** After the outbreak of COVID-19, the relationship between pandemics and climate change is in focus as a warming world becomes more susceptible to disease outbreaks. In times to come, climate change would be the biggest threat to humanity and India should use the UN platform for taking new initiatives on this important issue.
  - India's flagship initiatives, International Solar Alliance and Coalition against Disaster Resilient Infrastructure highlights India's potential leadership role in this arena.
- **Fight against terrorism**: As terrorist activity breaches new frontiers, no country can afford to adopt an ostrich like approach.
  - India should use its tenure to force a search for solutions, especially on reining in terror finance infrastructure, cyber threats and use and misuse of information and communication technologies by state

and non-state actors. India must also strive for more cooperation and coordination between the UN and the Financial Action Task Force (FATF) on the issue of terrorism.

- **Deal with China's growing hostility:** China has unleashed its territorial nationalism and countries from India to Vietnam, Japan and the Philippines etc are facing China's bullying.
  - o India's presence in the UNSC would be useful in building a narrative and consensus against China's ill motives and also generating the conditions for resolving the boundary dispute and expand the areas of bilateral cooperation.
- **Strengthen new coalitions** such as QUAD. India could also use the UNSC tenure to deepen collaboration with its European partners like France and Germany in the security arena, and find common ground with Britain that is carving out a new international path for itself after breaking away from the European Union.
- **Revitalise its engagement with its traditional partners in the global south:** The numerous small island states around the world face existential challenges from global warming and rising sea levels. They also struggle to exercise control over their large maritime estates. Supporting the sovereignty and survivability of the island states by articulating their peace and security concerns in the UNSC is a crucial political task for India.
  - o **At the same time,** the UNSC tenure is a good moment for India to intensify India's engagement on peace and security issues in Africa at bilateral, regional and global levels.

> **India chairing the committees on Terrorism**
> - India is a leading voice at the UN in the fight against the global scourge of terrorism, particularly the threat posed in the region by cross-border terrorism emanating from Pakistan.
> - The three committees are highly significant subsidiary bodies of the UNSC and India chairing them is a ringing endorsement of the country's leadership to steer the panels.
> - **Counter-Terrorism Committee:** The committee was established after the 9/11 terror attack in the United states and it works to bolster the ability of UN member states to prevent terrorist acts both within their borders and across regions.
> - **Taliban Sanctions Committee:** also known as the 1988 Sanctions Committee The committee designates individuals and entities for participating in the financing, planning, facilitating, preparing or perpetrating of acts; supplying, selling or transferring arms; recruiting and supporting acts or activities of groups, undertakings and entities associated with the Taliban. The listed entities and individuals are subject to an assets freeze, travel ban and arms embargo.
> - **Libya Sanctions Committee:** Under the Committee, all member states are required to prevent the sale or supply of arms and related material to Libya; prevent the entry into or transit through their territories of all listed individuals; freeze all funds, other financial assets and economic resources that are owned or controlled, directly or indirectly, by the listed individuals or entities.

- **Shaping debates on emerging issues:** India will have the opportunity to shape the debate on some of the most pressing global peace and security challenges of our times, including the ongoing humanitarian crisis in Myanmar, the Iran nuclear deal, the COVID-19 pandemic among others.
  - o **Biological warfare**: The pandemic has sensitised possibilities of malicious use of pathogens and the possibility of biological warfare. While the Biological and Toxin Weapons Convention does exist, it has its own limitations and the issue needs some rethinking and action. India has the opportunity to build networks with like-minded nations to ensure constructive progress.
  - o **Growing nuclear risks**, especially of inadvertent escalation or stumbling into a nuclear war like situation require global resolution. India could support a Special Session on Disarmament to meaningfully examine pathways towards elimination of nuclear risks and weapons.
- **India's Bid for Permanent Seat:** India's inclusion into the grouping as a permanent member, has been time and again blocked by China. India's case would be better strengthened by showcasing sincere leadership on international security concerns, especially in a polarised environment. This would require nudging inter-state relations into a working relationship to facilitate cooperative action.
- **Reforming peace keeping efforts:** India is one of the largest contributors of peacekeeping troops to the UN and it shall seek to leverage its strengths in Information and Communication Technology (ICT) to improve peacekeeping efforts around the world.

Challenges in front of India

- **Lack of consensus on the definition of terrorism:** India took the initiative to pilot a draft Comprehensive Convention on International Terrorism (CCIT) in 1996. The CCIT is however facing a deadlock at the UN since there are basic differences between various countries on the exact definition of terrorism.

- **China Factor:** Beijing is asserting itself at the global stage much more vigorously than ever. It heads at least six UN organisations — and has challenged the global rules. China also continues to brazenly support Pakistan at multilateral fora further undermining Indian interests.
- **Post COVID Global Order:** Global economy is in shambles with various countries facing **recession and health emergencies.** At the same time, narrow nationalism is sweeping across the world which challenges the prospects of global cooperation. To handle all these situations need careful strategy to move the world out of this burdening challenge.
- **Global geopolitics:** With the situation deteriorating between **USA and Russia** and increasing tensions between **USA and Iran**, it will be tough situation for India to promote multilateral solutions to global problems.

Way forward

- As India enters the United Nations Security Council for the third time since the end of the Cold War, there is a very different dynamic than the one it encountered during the earlier tenures in 1991-92 and 2011-12. India, too, has changed over the last decade. The range of Indian interests has expanded and so has the circle of India's international partners.
- **India's new stint at the UNSC should therefore be more purposeful and pragmatic.** Purposefulness is about integrating its UNSC engagement with India's broader national goals and Pragmatism is about adapting to the changed conditions at the UNSC and avoiding overly ambitious goals.
- India's belief in the dictum of **Vasudhaiva Kutumbakam (**the whole world is a family), must manifest in bridging the geopolitical divide and play its part in ensuring global justice in areas of common concern like health, climate change, terrorism and reform of global institutions.

To know more on UNSC, its functioning and India's stance vis-à-vis UNSC reforms, kindly refer to our Weekly Focus document on "India and UNSC Reforms".

| **India and United Nations Security Council (UNSC) Reforms** | At a time when multilateralism and global governance is facing serious challenges in the post-second world war phase, it is important for a nation like India to step up and contribute its bit. Being a responsible global stakeholder, India won't find a better platform for it than the UNSC. This document discusses the factors that ails UNSC's credibility and effectiveness, India's stance on its reform and numerous challenges in front of India to attain its goals. | |

2.2. INDIA'S VACCINE DIPLOMACY

Why in news?

Days after India began vaccinating its own population against the novel coronavirus, India has begun dispatching millions of doses to its South Asian neighbors and key partner countries.

What is Vaccine Diplomacy and why is it important in the current global context?

Vaccine diplomacy can be seen as a branch of global health diplomacy that relies on the use or delivery of vaccines and alongside providing ancillary services like distribution assistance and related research. For instance, India has been a major supplier of RT-PCR vaccines in the African region since the AIDS outbreak. This can be seen as an example of India's vaccine diplomacy.

In the current context, when the world is amid a health crisis in the form of COVID-19, vaccine diplomacy has assumed an even larger role due to following reasons:

- **Countering emergence of Vaccine Nationalism:** With the development of vaccines, it was seen that some rich countries started cornering and sometimes hoarding vaccines. This is being termed as vaccine nationalism where myopic view of national needs is solely catered to with disregard for collective global needs. For instance, rich countries account for just 16 percent of the world's population, but they have cornered 60 percent of the vaccines bought globally.
  - In this context, it becomes important to not follow suit and create a **counter narrative of vaccine internationalism or vaccine diplomacy** where supply of vaccines is seen as geopolitical opportunity rather than a national liability.

- **Strengthening the idea of collective global response:** Since the start of the pandemic, it has been made clear that only a collective response from all countries executed simultaneously would be able to eliminate the virus. On those lines, vaccine diplomacy ensures that supply of vaccines reaches all areas in a short span of time creating a swift and timely global response.

Vaccines that constitute majority of vaccines used and supplied by India
• **Covisheild Vaccine:** It is developed by AstraZeneca and Oxford University and manufactured by the Serum Institute of India (SII).
• **Covaxin:** Locally developed and manufactured vaccine by Bharat Biotech and the Indian Council of Medical Research.

How can vaccine diplomacy aid India's foreign policy?

- **Generating goodwill in the neighborhood:** In keeping with its "Neighborhood First" initiative, the first consignments of the Covishield vaccine and Covaxin have gone to its immediate neighbors i.e., Bangladesh, Bhutan, Maldives, Myanmar, and Nepal, and to key Indian Ocean partners, Mauritius and Seychelles.
  - o Vaccine diplomacy may help provide a fresh start to troubled relationships in the neighborhood. For example, Nepal which has been sparring with India in recent months, has expressed gratitude for India's gesture.
  - o Also, such gestures will help counter the "big brother" or "bully" perception of India among the smaller neighbors like Bangladesh.
- **Vaccine pacts with other developing nations:** India envisages to distribute vaccines to Latin America, Africa, and the former Soviet Republics. Many of the recipient countries have signed vaccine pacts with India on a government-to-government basis. This will strengthen India's soft power in the region by **decreasing the "vaccine inequality"** in the developing world.
  - o India has also offered to help friendly nations in enhancing their cold chain and storage capacities for the delivery of Vaccines.
- **India's Vaccine Maitri (Vaccine Friendship)** has evoked a positive response globally. The leadership shown by India during this crisis may increase its global standing. India's gesture of sharing its vaccine supplies with other countries stands in sharp contrast to the idea of Vaccine Nationalism.
- **India's comparative advantage in vaccine diplomacy:** There are several advantages that makes India a more suitable candidate for vaccine diplomacy from other countries including China-
  - o India is **one of the largest manufacturers of vaccines in the world**; it supplies around 60 percent of the global requirement of DPT, BCG, and measles vaccines.
  - o Indian vaccines have **shown less side-effects and** are low cost and easier to store and transport.
  - o **Extension of already prevalent** supply of medicines and generic drugs like hydroxychloroquine (once thought to help treat COVID-19) and paracetamol (a painkiller).
- **Aiding overall medical diplomacy and pharmaceutical sector:** Global demand for its COVID-19 vaccines is soaring. Its commercial supply will benefit Indian pharmaceutical businesses now and in the long run.

What are the challenges that India faces in executing the idea of vaccine diplomacy?

- **Balancing Vaccine Diplomacy with domestic needs:** India will need more than a billion doses to protect its own population. To ensure that supply is not constrained in India and simultaneously fulfilling international commitments on the 'vaccine pacts' will be a manufacturing as well as a logistical challenge.
- **Competition from China:** Although India has a comparative advantage with regard to China due to its medical Industry. But China has by and large recovered from the pandemic and it will be able to inject more diplomatic resources towards vaccine diplomacy, thus challenging India's leadership in the domain.

Way forward

India's potential and the current context provides it with a twin opportunity to serve humanity and simultaneously strengthen its geopolitical position, efforts should be made to capitalize on this opportunity as far as possible. The immediate gains which may generated, like opening of communication channels, creation of goodwill etc. should be capitalized with more concrete engagements through geopolitical partnerships, economic agreements and resolution of bilateral issues.

2.3. ROLE OF INDIAN DIASPORA IN MAKING INDIA SELF-RELIANT

Why in news?

Recently, the 16th Pravasi Bharatiya Divas (PBD) Convention was held virtually in New Delhi with the theme "Contributing to Aatmanirbhar Bharat".

About Indian Diaspora

- The term 'diaspora' is commonly understood to include Non-Resident Indians (NRIs), Persons of Indian Origin (PIOs) and Overseas Citizens of India (OCI), of which PIO and OCI card holders were merged under one category — OCI — in 2015.
- Broadly speaking, for the Indian government, the diaspora encompasses a group of people who can either trace their origins to India or who are Indian citizens living abroad, either temporarily or permanently.
- **Status of Indian Diaspora**: As per the World Migration Report 2020, India was the leading country of origin of international migrants in 2019 with a 17.5 million strong diaspora.
  - In 2018, **remittance inflows to India amounted to USD 79 billion, the largest in the world**.

What role can be played by the Indian Diaspora in Making India Self-Reliant?

- **Strengthening the identity of Brand India**: The use of made in India products by overseas Indians will increase confidence in Indian products globally. Conduct of the overseas Indians also creates an interest in Indian way and values. This can spur demand of 'made in India' products across the globe.
- **Assistance through sharing of expertise and knowledge**: Rapidly growing population of Indian Diaspora have created a mark in various walks of life such as academics, social service, medicine, business, IT etc. Thus, through dialogues and discussions, the eminent diaspora can help support the country's endeavor to enhance its capacities in fields such as Healthcare, Research and development, Education etc.
  - Also, due to familiarity with consumer markets abroad, Indian diaspora can provide unique insights into consumer behaviour and can help Indian firms to manufacture customised products for foreign markets.
  - During the COVID pandemic, Indian diaspora was actively engaged in the healthcare system in many foreign countries. These healthcare specialists can help India to strengthen its strategies to tackle healthcare emergencies in the future.
- **Remittances aid in socio-economic development:** Remittances have played a role in poverty reduction while changing consumption behaviour in rural areas. They enable innumerable families in India to invest in education and skill development and hence generate capable human resource.
- **Facilitating entrepreneurship**: Diaspora can help build transnational entrepreneurship, by supporting entrepreneurs and small businesses in India in the form of technical knowledge transfers and finances.
- **Secure Investment flows**: Indian diaspora are better informed of India's market conditions, the domestic labour and economic policies and consequently have more realistic expectations of time frames for project completions and investment returns. Capital inflows in Greenfield and brownfield firms can help expand manufacturing in India.
- **Diaspora diplomacy**: As the Indian Diaspora gains financial and political affluence abroad, they can potentially lobby

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About Pravasi Bharatiya Divas (PBD)

- PBD is celebrated **once in every two years** to strengthen the engagement of the overseas Indian community with the Government of India and reconnect them with their roots.
  - PBD is held on January 9 as it was on this day in 1915, Mahatma Gandhi returned to India from South Africa and led the country's freedom struggle.
  - During the PBD convention, select eminent Indian diaspora members are awarded the Pravasi Bharatiya Samman Awards.
- **Pravasi Bharatiya Samman Awards**: It is the highest honour conferred on a **Non-Resident Indian (NRI), Person of Indian Origin (POI)**; or an **organisation or institution** established and run by NRI or POI, who have made significant contribution in better understanding of India abroad, support India's causes and concerns in a tangible way, community work abroad, welfare of local Indian community, etc.

Concerns

- **Regulatory hurdles**, such as complex norms for establishing new firms, FDI limits etc restrict ease of doing business and deter investment.
- **Limited scope of interactions**: Most of the outreaches are focused on Indian diaspora in developed countries like USA, UK etc., while new opportunities with growing diaspora in emerging nations like South Africa, South East Asian nations etc. are not given appropriate attention.

their governments for stronger political and business alliances with India and promote frequent visits, delegations and conferences across government and industry.

- o They can act as bridges, mediators, facilitators, lobby and advocacy groups for taking primacy of India's national security and economic interests.

Government's efforts towards engaging Indian Diaspora

- **Global Pravasi Rishta portal**: It has been established for better communication with Pravasi Bhartiyas.
- **Vaishwik Bharatiya Vaigyanik (VAIBHAV) Summit**: It aims to bring out comprehensive roadmap to leverage the expertise and knowledge of global Indian researcher for solving emerging challenges by bringing the Indian Overseas and Resident academicians/scientists together.
- **Know India Programme**: of the Ministry of External Affairs is a three-week orientation programme for diaspora youth conducted with a view to promote awareness on different facets of life in India and the progress made by the country in various fields.
- **Pravasi Kaushal Vikas Yojana (PKVY):** It is a skill development scheme of the Ministry of External Affairs, aimed at enhancing the skill set of potential emigrant workers in select sectors and job roles, in line with international standards, to facilitate overseas employment opportunities.
- **Community Welfare Funds**: At the national level, India has established such funds which levy small fees from consular services to support Indian nationals caught in crisis situations abroad. These funds allow consulates to have rapid access to resources in emergency cases, which in turn allows for the launch of rapid responses.

Way Forward

The role of Indian diaspora in development of self-reliant India can be further enhanced by:

- **Conducting outreach and information campaigns** to educate diaspora of investment opportunities and setting up seamless investment channels to induce by investment by Indian immigrants.
- **Facilitating discussion to inform public policy in India** through formation of regional or sectoral group of advisors from Indian diaspora.
- **Focusing on engaging growing diaspora in emerging countries** like South Africa, South East Asian Nations etc.
- **Improving ease of doing business** specifically enabling diaspora to expand operations of their firms in India.

2.4. SOUTH ASIA ENERGY SECURITY

Why in news?

High-level group to help build a South Asia-focused energy security architecture, named the South Asia Group for Energy (SAGE), has been set up under the Ministry of External Affairs (MEA).

About SAGE

- It is a **consortium of energy-sector experts partnering with South Asian governments** to enable sustainable energy development in the South Asia region.
  - o Consortium comprises USAID, the United States Department of Energy (DOE) and three national laboratories: the Lawrence Berkeley National Laboratory (LBNL), the National Renewable Energy Laboratory (NREL) and the Pacific Northwest National Laboratory (PNNL).
- **Its objective** is to:
  - o **implement research and analysis focused on energy sector opportunities** throughout South Asia.
  - o **equip USAID partner governments with critical information** to enable strategic investments.
  - o **contribute towards achieving the goals of Asia Enhancing Growth and Development through Energy (Asia EDGE)**, a United States Government initiative to support the growth of sustainable and secure energy markets across the Indo-Pacific.

Need for Energy cooperation in South Asian Region

- **Mismatch between energy demand and resource endowments:** There is a wide variation in commercial energy resource endowments and commercial energy demand among the South Asian Countries (SAC).
  - o For instance**, India, Pakistan and Bangladesh account for the major share of natural gas and coal resources** in the region. However, these countries are also large in terms of area as well as population increasing the resource demand.

- o **Bhutan and Nepal, on the other hand, have hydropower potential** in excess of their demand for electricity over the foreseeable future and offer the best prospects for intra-regional electricity export. Neighboring regions, particularly Central Asia and Western Asia, have inter-regional energy export capability to South Asia.
- **Leverage economies of scale in energy procurement :** Regional energy transfer, will increase countries' access to energy resources (from outside the region) and leverage economies of scale. Intra and inter regional energy cooperation therefore, offers viable options to South Asia for augmenting its energy supply.
- **Lack of access to clean energy:** The region is home to a huge population that lacks access to clean forms of energy. A large section of the population, particularly in rural areas lacks access to electricity and relies on the traditional use of biomass for cooking.
  - o All SACs have significant potential for new renewable power (solar, wind and biomass). But, **management of intermittent supply can best be done through connected regional infrastructure.**
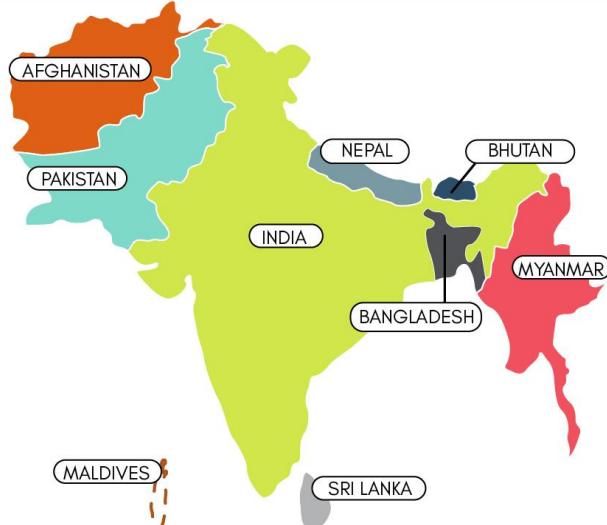
India's Energy Cooperation with other SACs

- Energy cooperation in South Asia has occurred at the bilateral as well as regional level. But **bilateral energy cooperation has been more successful**, particularly between India and other SACs.
- **India is the largest consumer of primary energy in the region** and in the last seven years, India's renewed enthusiasm for

South Asian Region

- **South Asia**, subregion of Asia, comprises countries lying between the Himalaya range and the Indian Ocean (north to south) and between the Ganga and Indus river valleys (east to west): mainly, **Nepal, Bangladesh, Sri Lanka, Bhutan, India, Afghanistan, Myanmar, Maldives, and Pakistan.**
- It is the home to a quarter of the world's population, and is a **major energy consumer.** According to the US Energy Information Administration, the region's **primary energy consumption** increased by 58 per between 1991 and 2000, and is **expected to increase by another 40 per cent in the next three decades.**
- Meeting the projected demand, requires international and regional cooperation on technological and, infrastructure development and trade in energy resources.

South Asia Region

MULTI- LATERAL ENERGY CO - OPERATIONS IN SOUTH ASIA		
ORG	**MEMBERS**	**WORK IN ENERGY CO-OP**
SAARC 1985	- Bangladesh, Bhutan, India, Nepal, Maldives, Srilanka and Pakistan - Afghanistan joined later	- SAARC energy centre 2006 at Islamabad
SASEC 2001	Bangladesh, Bhutan, India, Nepal, Maldives, Myanmar and Srilanka.	- Regional co- operation in Energy alongwith transport and trade facilitation
BIMSTEC 1997	Bangladesh, Bhutan, India, Nepal, Srilanka, Myanmar and Thailand.	- Energy (alongwith trade, technology, transport & tourism) is an important area of co - operation. - Ist BIMSTEC Energy Ministers Conference, 2005 to setup BIMSTEC Energy centre in India.

regional energy cooperation in South Asia has led to **concrete progress on multiple cross-border energy projects.**

- **India and Bhutan:**
  - o India has provided technical and financial assistance to Bhutan in the development of hydro power. Bhutan exports about 1,000-1,200 megawatts (MW) surplus power to India. The first ever Clean Development Mechanism (CDM) benefits were realized by India-Bhutan hydro trade in 2010.
- **India and Bangladesh:** have signed a memorandum of understanding (MoU) under which 100 MW power will be exported to Bangladesh.

- **India and Nepal:** Four hydroelectric schemes with an aggregated installed capacity of about 50 MW have been implemented in Nepal with assistance from India.
  - The two countries have also signed an agreement worth US$ 1.04 billion under which a 900 MW plant will be built on the Arun River.
- **LNG:** A large LNG facility on the Bay of Bengal coast in underway with participation by India, Bangladesh and possibly Nepal. New LNG terminals at Haldia and Dhamra are being developed.

Major Opportunities for India

- **Water management:** Presently, Nepal's hydropower potential is of 60GW, of which, only 2% is being used. Co-development via storage dams will enhance Nepal's electricity supply and income and revenue from the export of power. **India being one of the importing countries will benefit in various ways.**
  - For instance, the proposed Sapta-Kosi and Sun-Kosi projects on the Kosi river, will generate hydropower, prevent frequent floods in India (in the lower riparian areas of Uttar Pradesh and Bihar), provide irrigation and drinking water in both countries, enable in-land navigation channel with direct sea-port connectivity from Nepal to Kolkata, and generate large spinoffs in livelihoods in both countries.
- **Increasing share of LNG in primary energy mix:** India proposes to expand the share of natural gas in its primary energy profile from 6% to 15%. A trilateral partnership between Bangladesh, India, and Nepal to develop shared pipelines, terminals, and gas storage facilities can enhance the economic viability of these investments and move the region towards a net-zero pathway.
- **Enhancing the share of renewable electricity:** Sri Lanka currently relies on imported fossil fuels and domestic hydropower and plans to generate 100% electricity through renewables by 2050. This provides an investment opportunity to develop utility-scale wind and solar for the Indian private sector.
  - For instance, developing the missing transmission link between India and North West Sri Lanka having abundant wind power can complement Indian solar power.

Existing gaps in South Asia's energy cooperation

- **Resources constraints:** While coal is abundant in India, Bangladesh and Pakistan, it is not considered a fuel of the future due to its pollutant effects and negative impacts on society through mining-induced displacement of vulnerable communities. On the other hand, while gas is comparatively a cleaner hydrocarbon, supplies are depleting in Pakistan and Bangladesh.
- **Mobilising financial resources** to develop the necessary energy infrastructure is a major challenge to enhance energy security in the region. One of the major reasons for this is state-centred approach towards energy security that it is primarily based on government to government interactions and the use of public sector enterprises.
- **Lack of diversification of fuel basket:** There is an overarching dominance of a single fuel in the energy mix across all SAARC nations. India, for instance, is heavily dependent on coal. Bangladesh and Pakistan on gas, and Bhutan and Nepal are predominantly hydro- based energy generators. Such over reliance on a single fuel source leaves countries vulnerable to disruptions caused by market and technological failure as well as sabotage.

> **Regional projects under consideration**
> - **TAPI pipeline**: aims to transfer gas from Turkmenistan's Galkynysh field through Afghanistan to Pakistan and then into India. While the project was initially expected to be completed in 2019, construction of the pipeline has not yet started, and efforts are underway to attract funding.
> - **Bangladesh–Bhutan–India–Nepal (BBIN) Joint Working Groups (JWGs)**: aim to collectively harness the hydroelectric potential of the Ganges-Brahamaputra-Meghna(GBM) basin that is shared by the four countries. So far, four meetings of the JWGs have taken place, and various issues related to hydropower and water resources have been discussed.

- **Limited focus on Renewable Energy:** Despite abundant renewable sources available across the region, they have not been efficiently tapped. Afghanistan for instance has abundant renewable resources which, if exploited fully, could help reduce supply gaps.
- **Slow progress on regional and multilateral projects:** Despite recent progress in negotiations, no construction has yet taken place and doubts have been raised about the completion of the project. Proposals to undertake multilateral cooperation on harnessing the hydropower potential of the GBM basin have existed for decades but these projects remain in the discussion stage.
  - **Overarching political differences between the SAARC member countries** is one of the major issues for regional energy cooperation efforts remaining less successful.

Conclusion

South Asian nations need to see the comparative advantages they hold in various energy sectors, and must come together to benefit each other via trade links.

India must lead by facilitating financing, developing harmonised technical regulations, deepening professional networks, and enhancing regional business opportunities. Greater cooperation in providing decentralised energy solutions to neighbouring countries will also contribute towards peace and development in the region.

2.5. INDIA'S DRAFT ARCTIC POLICY

Why in News?

Government has recently released a draft Arctic Policy document in order to solicit public comments.

About Arctic region

- It refers to the region above the Arctic Circle, north of latitude 66° 34' N, which **includes Arctic Ocean with North Pole at its centre.**
- Much of this Ocean falls within the jurisdiction of five Arctic littoral states— **Canada, Denmark (Greenland), Norway, Russia and USA (Alaska).**

Significance of Arctic region

- **Environmental & Climate Change:** Arctic **influences earth's atmospheric, oceanographic and biogeochemical cycles** which further impacts the whole world.
  - Arctic region also has **ecological importance** as it is home to extensive biodiversity of more than 21,000 known species providing essential services and value to people.
  - Studying the impact of climate change in the Arctic can improve response mechanisms in other parts of the globe including India. It is, therefore, imperative to understand causative mechanisms and predict outcomes. Ex: Atmosphere is warming faster in the Arctic, whereas the ocean is warming faster in the Indian Ocean.
- **Economic significance:** Rapid warming and melting

> **About Arctic Council**
> - It is a high-level **intergovernmental forum for Arctic cooperation** that was set up with the twin-mandate of **environmental protection and sustainable development.**
> - It comprises 8 member states, permanent participants and observers.
>   - Canada, Denmark, Finland, Russia, US, Iceland, Norway, Sweden are member states
>   - **India became an Observer nation** in 2013.
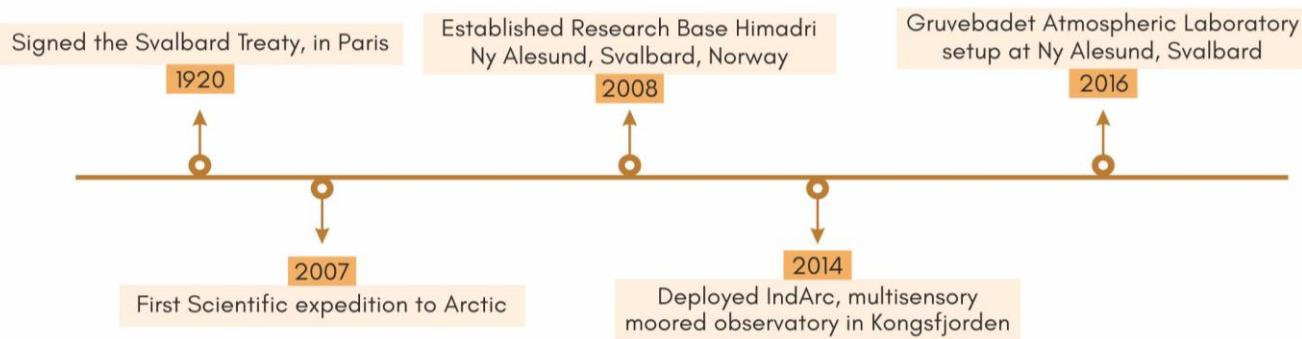
> **Various global initiatives for Arctic**
> - **Arctic Contaminants Action Programme:** works to prevent and reduce pollution and environmental risks in the Arctic. ACAP chairmanship rotates between Arctic Council States every two years.
> - **Arctic Economic Council:** an independent organization that facilitates Arctic business-to-business activities and responsible economic development. It is open to corporations, partnerships and indigenous groups that have an economic interest in the Arctic.
> - **Arctic Monitoring and Assessment Programme:** It is one of six Working Groups of the Arctic Council. One of the mandates is to monitor and assess the status of the Arctic region with respect to pollution and climate change issues.
> - **Arctic Migratory Birds Initiative:** is a project designed to improve the status and secure the long-term sustainability of declining **Arctic** breeding **migratory bird** populations. It organize activities across four flyways: Americas, African-Eurasian, Circumpolar, East Asian- Australasian.
> - **Arctic Marine Tourism Project:** is part of a renewed effort by the Arctic Council to analyze and promote sustainable tourism across the circumpolar Arctic.

of ice in the Arctic is making areas in arctic region with raw materials potential increasingly accessible for economic exploitation and development.

o As per estimates, Arctic region holds an estimated 22% of Earth's oil and natural gas resources and **India has interest in Arctic rich minerals, and oil and gas reserves.**

o Arctic offers viable opportunities in different sectors where Indian enterprises can be involved, become part of international commerce, promote traditional indigenous knowledge, businesses and best practices.

- **New Sea Routes:** As Arctic ice melts, sea routes will stay navigable for longer periods, which could drastically change international trade and shipping.

- **New fishing grounds:** As sea ice declines, new opportunities for high sea fisheries are emerging. The Arctic has significant stocks of living marine resources, which are some of the most productive in the world.

- **Geopolitical:** Its geographical location in between three continents – America, Europe and Asia, offering short trade distances - destination as well as transit.

o Due to increased mobility and economic potential within the Arctic resulting from global warming, fears of a scramble for the Arctic with **escalating territorial disputes is also growing**.

- **Research & Development:** Arctic research can **enhance contribution to domestic research activities of India which** will help to study melting rates of Himalayan glaciers.

India And The Arctic - A History of Cooperation

Signed the Svalbard Treaty, in Paris — 1920

First Scientific expedition to Arctic — 2007

Established Research Base Himadri Ny Alesund, Svalbard, Norway — 2008

Deployed IndArc, multisensory moored observatory in Kongsfjorden — 2014

Gruvebadet Atmospheric Laboratory setup at Ny Alesund, Svalbard — 2016

Draft policy seeks to achieve India's Arctic mission that aims to:

- Contribute to international efforts to **enhance humankind's understanding of the Arctic region** in India's capacity as an Observer State to the **Arctic Council.**
- **Enhance sustainable and mutually beneficial cooperation** between India and the Arctic.
- Strengthen **efforts against global warming**.
- Better **understand the scientific and climate related linkages** between the Arctic and the Indian monsoons.
- **Harmonise polar research with the third pole**—the Himalayas.
- Advance the study and understanding of the Arctic within India.

For achieving India's Arctic Mission, policy will rest on five pillars:

- **Science and Research Activities**
    o It will have following components

Science	Climate Change and Environment	Space Technology
• **Strengthen the existing research base at Himadri**. • **Harness existing expertise from polar research** in disciplines such as atmospheric and ocean science, geoengineering, etc. • **Enhance the quality of India's engagement with the Arctic Council.** • **Develop bilateral and multilateral projects with Arctic nations** under various Arctic forums.	• **India will participate in research** to preserve Arctic biodiversity. • **Contribute towards environmental management in the Arctic**—methane emission, micro-plastic, marine litter and more. • Engage with the Emergency Preparedness, Prevention and Response Working Group of the Arctic Council. • **Engage with partners to improve Earth System modelling** to support weather and climate predictions of the globe.	• **Expand remote sensing capability to the Arctic** and engage with Arctic countries for mutually advantageous sharing of India's RESOURCESAT.. • Develop facilities for **establishing services in the Arctic related to telecommunications and connectivity, maritime safety, , hydrographic surveys, climate modeling** etc.

- **Economic and human development cooperation**
  - It will have following components:

Energy, Mineral and Other Resources	Human Development
- Explore opportunities for **responsible exploration of natural resources and minerals** from the Arctic. **Encourage participation by Indian public and private sector entities** - Explore partnership **opportunities for off-grid renewable energy and bioenergy**. - Develop fail-safe **seed storage facilities in cryospheric regions**.	- Share expertise in the **management of indigenous and other communities** with the Arctic states. - Encourage Indian **participation in sustainable tourism in Arctic.** - Examine the feasibility of **providing healthcare services and technological solutions** in the Arctic. - Undertake **cultural and educational exchanges** between indigenous communities of glacial regions of Himalayas and the Arctic.

- **Transportation and Connectivity**
  - Explore the possibility of **linking the International North South Transport Corridor with the Unified Deep-Water System** and its further extension to the Arctic.
  - Collaborate with partners possessing **expertise in building ice class vessels** suitable for polar operations.
  - Seek **participation in environmental monitoring, collecting hydrographic and oceanographic data,** creation of maritime safety facilities etc.
- **Governance and international cooperation**
  - **Uphold international law and in particular UNCLOS,** including the rights and freedoms contained therein.
  - Participate in economic activities in the region in accordance with the UN Sustainable Development Goals 2030 framework.
  - **Actively participate in international climate change and environmental treaty frameworks** relating to the Arctic.
- **National capacity building**
  - **Expand capability, capacity and awareness for Arctic-related scientific research** by strengthening the National Centre for Polar and Ocean Research.
  - Promote domestic scientific research capacities by expanding programmes dove-tailed with Arctic imperatives in Indian Universities.
  - **Put in place Arctic related programmes for mineral/oil and gas exploration** in petroleum research institutes.
  - Expand **student programmes on the blue-bio economy** of the Arctic.
  - Build a wide-ranging **institutional base on Arctic maritime, legal, environmental and governance issues.**

2.6. GROUP OF SEVEN (G7)

Why in news?

The United Kingdom has invited Prime Minister of India to attend the G7 summit scheduled to be held in June 2021.

More about news

- Apart from **India, Australia and South Korea** are also invited to participate in the proceedings of the summit as guest countries.
- U.K. will use the G7 summit, as the opportunity to **build back better from coronavirus**.
- Previously, **in 2019 India participated in the G7 summit in Biarritz** on invitation by France.

About Group of Seven (G7)

- G7 is a **bloc of industrialized democracies** Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.
- **Russia belonged to the forum from 1998 through 2014**, when the bloc was known as the Group of Eight (G8), but was **suspended following its annexation of Crimea**.
- There are **no formal criteria for membership**, but the participants are all developed democracies.
- The G-7 nations meet annually and presided over by leaders of member countries on a rotational basis to **discuss issues such as global economic governance, international security, and energy policy.**

- Currently, the aggregate gross domestic product **(GDP) of G7** member states makes **more than 30% of the world**, down from nearly **70% three decades ago**.
- **India is not a member of the G7 group.**

Significance of G7 to India

- **Voice in international organisations:** Relations with G7 and proposed inclusion of India could help further its **security and foreign policy interests**, especially at the nuclear club and UN Security Council reform.
  - Also, India is a non-permanent member at the UN Security Council, where the **United Kingdom will take over the presidency in February 2021.**
- **Allies Against China:** The proposal of expansion of G7 with inclusion of India, Australia and South Korea will ultimately come to take the **shape of an anti-China alliance**, which help to check assertive diplomacy of China.
  - Also, the **new version of G7 accounts for more than 50% of world GDP** and subsequently will challenge China, which is one of fastest growing economy in the world.
- **Indo pacific security:** US interests in Indo-Pacific and Quad members (India, US, Japan and Australia) within G7 will further **boost security cooperation in Indo-Pacific region**.
- **Economy and trade:** India has a good economic relationship with all the countries in G7. It could turn out to be a useful platform for India to further intensify its links with these countries to **revive its economic growth after the COVID-19 pandemic.**
- **Forum of democracies:** The extended G7 with inclusion of India, South Kora and Australia will act as a credible **forum of democracies (D10) for free and rules-based world order.**

Challenges for India within G7

- **Group of Twenty's (G20): G20 and its rise is seen as an alternative forum to G7**, which affecting to maintain importance and influence of G7.
  - India also need to take care of it while joining the forum because **relevance of G7 with G20 is debated because there are convergences in their areas of activism** and India is already member of the G20, a grouping dedicated to fixing the Global Economic agenda.
- **US hegemony:** Internally the G7 has number of disagreements, most recently when **US clashed with other members over taxes on imports and US's withdrawal from Paris climate agreement** at last year's summit in Canada.
- **Non inclusive:** It is said that claim the G7, which has **no representative from any African, Russian or Middle Eastern nation** is completely outdated and non-inclusive.
- **Re-inclusion of Russia:** The proposal to re-admit Russia is expected to receive strong reactions from other G7 member countries, because **Russia is seen as an ally of China**.

Way Forward

The **proposed expansion may also help G7 to be a more representative institution** than current G7 and subsequently to establish an equal platform at global level. While, **India needs to be more conscious and pragmatic** in relation to G7 without hampering its existing relations with Russia and G20.

2.7. TREATY ON PROHIBITION OF NUCLEAR WEAPONS (TPNW)

Why in news?
The UN Treaty on Prohibition of Nuclear Weapons (TPNW) entered into force on 22 January 2021.

More about News
- This treaty was officially adopted in 2017 **due to efforts by International Campaign to Abolish Nuclear Weapons (ICAN).**
  - ICAN is an international coalition of NGO's running the campaign to advocate United Nations Weapon Ban treaty in about 100 countries.
  - ICAN also received the 2017 Nobel peace prize due to its efforts.
- **TPNW** got its 50th ratification with Honduras signing it in October 2020, triggering a 90-day period before its entry into force on January 22, 2021.
  - At present, **86 member-states have signed the Treaty**, and 51 of them have ratified it.
- US, Russia, China, Britain, France, **India**, Pakistan, North Korea and Israel (countries possessing nuclear weapons) and NATO alliance **did not support it.**

- o India believes that the **treaty does not constitute or contribute to the development of customary international law**, nor does it set any new standards or norms.
- o India **supports the commencement of negotiations on a comprehensive Nuclear Weapons Convention in the Conference on Disarmament**, which is the world's single multilateral disarmament negotiating forum working on the basis of consensus.

More about Treaty on Prohibition of Nuclear Weapons (TPNW)

- The entry into force of the TPNW means that the treaty's provisions will be **legally binding for the states that have ratified or acceded to it.**
- **TPNW prohibits States Parties to**
  - o **Develop, test, produce, manufacture, otherwise acquire**, possess or stockpile nuclear weapons or other nuclear explosive devices;
  - o **Transfer to any recipient whatsoever nuclear weapons** or other nuclear explosive devices or control over such weapons or explosive devices directly or indirectly;
  - o **Receive the transfer of or control over nuclear weapons** or other nuclear explosive devices directly or indirectly;
  - o **Use or threaten to use nuclear weapons** or other nuclear explosive devices;
  - o **Assist, encourage or induce**, anyone to engage in any activity prohibited to a State Party under this Treaty;
  - o **Allow any stationing, installation or deployment of any nuclear weapons** or other nuclear explosive devices in its territory.
- It requires parties to **promote the treaty to other countries.**
- It also **obliges States parties to provide adequate assistance to individuals** affected by the use or testing of nuclear weapons.

Significance of TPNW

- **Closes legal gap:** TPNW strengthens the provisions of the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and provides a framework for countries worldwide to eliminate nuclear weapons by closing legal gaps.
- **Humanitarian consequences:** Nuclear weapons should be banned because they have unacceptable humanitarian consequences and pose a threat to humanity.
- **Victim assistance and remediation:** In addition to the Treaty's prohibitions, States Parties are obligated to provide victim assistance and help with environmental remediation efforts by cleaning up environments contaminated by nuclear testing.
- **Message to nuclear power countries:** Creating a global opinion against the acquiring nuclear weapons helps to expose dangerous belief that the possession of nuclear weapons can provide them security, also gives notice to the established nuclear powers that they have lost the moral right to keep nuclear weapons.
- **Catalyst to young generation:** In the era of globalisation of protest movements, the TPNW can act as a catalyst to organise the younger generation of the world in delegitimising nuclear weapons and disassociate themselves from any activities assisting nuclear weapons production.

What are the challenges to Treaty on Prohibition of Nuclear Weapons (TPNW)?

- **National security:** NATO member-states and other powerful and wealthy countries like India, Japan, South Korea, and Australia have stayed out of the Treaty mentioning reason of national security.
- **Non efficacy:** The efficacy of the treaty is questionable because none of the current nine nuclear-armed states including five permanent members of the U.N. Security Council (P5) support the treaty or have signed it.
- **Lack of clarity:** Some countries' arguments for not joining the Treaty are more on technical grounds, as the lack of clarity about the type of nuclear weapons the Treaty covers or how it would relate to other global treaties covering nuclear weapons' control or proliferation.

Conclusion

The TPNW is a significant milestone on the path towards a nuclear-weapon-free world. Moreover, it needs more to be done with nuclear weapons, like the world has agreed to ban other highly dangerous weapons like landmines, cluster munitions, and biological and chemical weapons.

Other Nuclear weapon prohibition treaty

- **Non-Proliferation Treaty- NPT (1968):** It aimed at preventing the spread of nuclear weapons and weapons technology prohibits acquisition of nuclear weapons by non-nuclear states.
    - o It represents **binding commitment in a multilateral treaty to goal of disarmament** by nuclear-weapon States.
    - o It **promotes cooperation in the field of peaceful nuclear technology** and equal access to this technology for all States parties, while safeguards prevent the diversion of fissile material for weapons use.
    - o Israel, **India**, and Pakistan never signed it, and North Korea **withdrew** from the Treaty in 2003.
- **Comprehensive Test Ban Treaty (1996):** It prohibits all the nuclear explosion in the world. U.S., China, Iran, Israel, Egypt, **India**, Pakistan and North Korea that had nuclear power reactors or research reactors are **yet to ratify it.**
- **2 India-sponsored resolutions on nuclear disarmament adopted by the UNGA are:** "Convention on the Prohibition of the Use of Nuclear Weapons",1982 and 'Reducing Nuclear Danger' under the 'Nuclear weapons' cluster, 1989

How the TPNW is different from NPT?

- **TPNW prohibits nuclear weapons outright**, comprehensively, for all States Parties, irrespective of whether they possess nuclear weapons, while in the **NPT the non-nuclear-weapon States forsake the option of developing nuclear weapons**.
- TPNW focused on prohibition of the use of nuclear weapons, while the **NPT is focused on the transfer, manufacture and acquisition of these weapons.**
- **TPNW complements and supports the NPT's nuclear disarmament** and non-proliferation objectives to pursue negotiations on effective measures for nuclear disarmament.

Also Refer to November 2020 Monthly CA for more details on India and Nuclear Disarmament.

3. ECONOMY

3.1. REGULATION OF NBFCS

Why in news?

Recently, the RBI has proposed a significant shift in its regulatory approach towards India's non-banking financial companies (NBFCs).

What is a NBFC and what role does it play in India's Banking sector?

A NBFC is a company registered under the Companies Act, 1956 engaged in the business of loans and advances, acquisition of shares/stocks/bonds/debentures/securities issued by Government or local authority or other marketable securities of a like nature, leasing, hire-purchase, insurance business, chit business etc.

Following can be cited as key **characteristics of NBFCs:**

- NBFCs **do not include** any institution whose principal business is that of **agriculture activity, industrial activity, purchase or sale of any goods (other than securities)** or providing any services and sale/purchase/ construction of immovable property.
- NBFCs are categorized:
  - in terms of the type of liabilities into **Deposit and Non-Deposit accepting NBFCs,**
  - non deposit taking NBFCs by their size into **systemically important and other non-deposit holding companies** (NBFC-NDSI and NBFC-ND) and
  - by the **kind of activity, they conduct.**
- **Major categories** of NBFC include Asset Finance Companies, Investment companies, Loan companies, Infrastructure Financing companies (IFCs), Systemically Important Core Investment Company (CIC-ND-SI), Infrastructure Debt Funds (IDFs), NBFC-Micro Finance Institution (MFI), NBFC-Factors, Mortgage Guarantee Companies (MGC) and NBFC- Non-Operative Financial Holding Company (NOFHC) among others.
- These companies **get NBFC License with the Reserve Bank of India (RBI).** But they are regulated by different agencies based on the role they play. (See infographic)

Significance
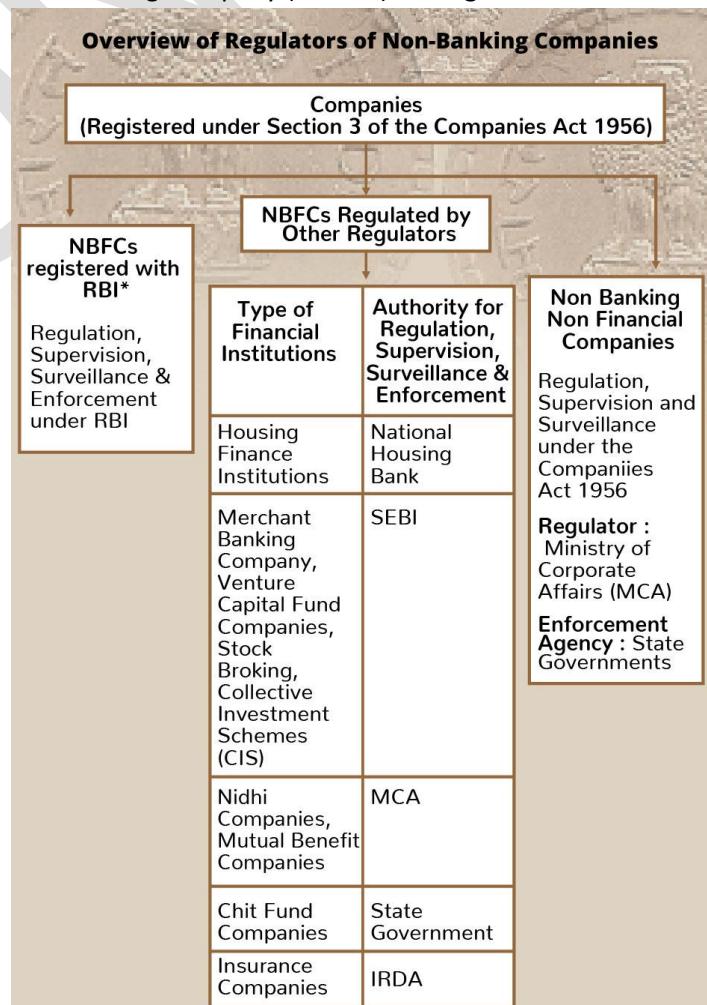
NBFCs as a collective play a crucial role in the banking sector by **increasing the penetration of financial products** to unbanked areas, **providing innovative products** for both rural and urban customers, **catering to the need of infrastructure lending** and to **other areas where long term financing is needed.**

Status

In the recent times, the **NBFC sector has seen tremendous growth.** For instance, in last five years alone, size of balance sheet of NBFCs has more than doubled from Rs 20.72 lakh crore (2015) to Rs 49.22 lakh crore (2020). As of now, there are **close to 9,560 NBFCs in India.**

Why is there a need for change in regulation of NBFCs?

The growth of NBFCs has simultaneously generated challenges vis-à-vis integration with other elements of financial sector, management within NBFCs etc.

Overview of Regulators of Non-Banking Companies

Companies
(Registered under Section 3 of the Companies Act 1956)

NBFCs registered with RBI*

Regulation, Supervision, Surveillance & Enforcement under RBI

NBFCs Regulated by Other Regulators

Type of Financial Institutions	Authority for Regulation, Supervision, Surveillance & Enforcement
Housing Finance Institutions	National Housing Bank
Merchant Banking Company, Venture Capital Fund Companies, Stock Broking, Collective Investment Schemes (CIS)	SEBI
Nidhi Companies, Mutual Benefit Companies	MCA
Chit Fund Companies	State Government
Insurance Companies	IRDA

Non Banking Non Financial Companies

Regulation, Supervision and Surveillance under the Companies Act 1956

Regulator : Ministry of Corporate Affairs (MCA)

Enforcement Agency : State Governments

Following can be cited as immediate challenges which have generated the need for regulatory reform:

- **Threat of systemic risks:** Financial issues faced by key NBFCs like Infrastructure Lending and Financial Services Limited (IL&FS) and Dewan Housing Finance Corporation Limited (DHFL) has **raised the threat of systemic risks** posed by the NBFC sector to the overall financial sector.
  - The **crises faced by IL&FS** can be primarily attributed to the Asset-Liability Mismatch (ALM) due to short-term borrowing alongside investments in infrastructure projects with long gestation periods.
  - The crises faced by **IL&FS lowered the credibility of all major NBFCs.** Alongside this, DHFL faced an allegation that its promotors were involved in a scam to siphon of money. Compounding these factors, share of DHFL plummeted and is currently struggling to pay INR 900 crore worth of debt.
- **Allowing large NBFCs to seamlessly become banks:** Recently, RBI's Internal Working Group (IWG) has revised the licensing norms for the Banking Industry. Since key NBFCs are to potentially become Banks, there is a need to bring consistency in regulation of Banks and NBFCs, so that the transition of NBFCs to Banks is seamless.
  - For example, if a large NBFC has a Capital Adequacy Ratio (CAR) similar to banks, it would be easier for it transition to become a bank as compared to with a lower CAR.
- **Emergence of FinTech Sector:** Emergence of the Financial Technology sector has changed the way Banking sector operates by creating innovative financial services which do not fit in traditional definitions. In this light, reforms in regulation of NBFCs can bring synergy between seamless operation and interaction of Banks, NBFCs and newly emerging element of FinTech.

What are the changes that RBI has proposed?

Broadly, RBI has proposed to move from a general approach of light touch regulation to one that monitors larger players almost as closely as it does banks. To enable this idea, it has proposed following changes:

- **Creation of four-layer regulatory framework** which includes a Base layer, a Middle layer, Upper layer and a Top layer. The degree of regulation in each sector is proportional to the perception of risk in that sector.
- **Classification change for NPAs:** It has also proposed classification of non-performing assets (NPAs) of base layer NBFCs from 180 days to 90 days overdue.

PROPOSED NBFC CATEGORIES

What would be the potential impact of these changes?

- **Balance between flexibility of NBFCs and the potential systemic risks:** The four-layered structure entails a largely laissez-faire approach for smaller NBFCs, plugging some of the arbitrages available to mid-sized NBFCs vis-à-vis banks, and imposing tougher 'bank-like' capitalization, governance and monitoring norms for the largest players and those which could pose a systemic risk due to the nature of their operations.
- **Improved trust and confidence in the NBFC Sector:** Stricter regulation by RBI alongside early reporting of NPAs will instill confidence in the NBFC market potentially driving up the share prices, attracting more depositors and translation to better credit ratings.
- **Increased transparency in the sector:** The primary issue that the NBFC sector faced was the lack of transparency which created financial risks for the overall banking system. Thus, more transparency in NBFCs via regulatory route would enable seamless flow of information, thus improving the transparency and risk assessment for the whole financial sector.

Conclusion

Given the banking sector's own woes over the past two years (PMC Bank, Yes Bank, Lakshmi Vilas Bank), a holistic reboot of the oversight mechanism for NBFCs and banks is critical to retain confidence and maintain financial stability. Regulation of NBFCs which can lend for activities banks often do not support, be it micro-loans or infrastructure projects, if adequately formalized has the potential to ensure that the fledgling economic recovery is not hampered by funding constraints.

3.2. DIGITAL LENDING

Why in news?

The Reserve Bank of India (RBI) has constituted a working group on digital lending.

More about news

WORKING PROCESS OF DIGITAL LENDING

1. The customer finds out about the loan via an SMS blast.
2. Within minutes, the customer downloads the app and applies with minimal documentation.
3. The loan is approved within minutes and disbursed into the customer's mobile wallet.
4. The loan is repaid with the click of a button, and followed up with a customized offer.
5. Help is available 24/7 through chat or call center.

- Recent spurt and **popularity of online lending platforms/ mobile lending apps** has raised certain serious concerns which have wider systemic implications.
- Against this backdrop, the **Working group is constituted by RBI** to study all aspects of digital lending activities in the regulated financial sector as well as by unregulated players.
- The working group will **evaluate digital lending activities and assess the penetration and standards** of outsourced digital lending activities in RBI regulated entities
- It will also **identify the risks posed by unregulated digital lending** to financial stability, regulated entities and consumers and **recommend regulatory or statutory measures** and robust fair practices code for digital lending players.
- RBI had earlier clarified that **legitimate public lending activities can be undertaken by banks, non-banking financial companies (NBFCs) registered with RBI** and other entities that are **regulated by the State governments under statutory provisions,** such as the money lending acts of the States concerned.
- Further the RBI mandated digital lending platforms used on behalf of banks and NBFCs to **disclose name of the bank or NBFC upfront to the customers.**

About digital lending

- Digital lending is the **process of offering loans that are applied for, disbursed, and managed through digital channels**, in which lenders use digitized data to inform credit decisions and build intelligent customer engagement.
- The digital lending ecosystem is **complex and evolving**. Around the world, **digital lending models (see infographic)** are characterized by distinct market structures, regulatory environments, and customer needs.

DIGITAL LENDING MODELS

Online Lender
FSPs that provide end-to-end digital lending products via a website or mobile application.

P2P Lender
Digital platforms that facilitate the provision of digital credit between many borrowers and lenders, typically playing an ongoing central role in the relationship between these parties.

e-Commerce and Social Platforms
Digital platforms wherein credit is not their core business, but that leverage their digital distribution, strong brand, and rich customer data to offer credit products to their customer base.

Marketplace Platforms
Digital platforms that originate and match one borrower with many lenders for an origination fee; the lender and borrower then enter into a bilateral agreement.

Supply Chain Lender
Non-cash digital loans for specific asset financing, invoice financing, or pay-as-you-go asset purchase within a supply chain or distribution network.

Mobile Money Lender
Partnership model wherein lenders work with mobile network operators (MNOs) to offer mobile money loans to their customer base, leveraging mobile phone data for scoring.

Tech-enabled Lender
Traditional FSPs that have digitized parts of the lending process, either in-house or through partnerships.

- In India government already created **stack of public digital identity, payments, and documentation infrastructure,** which conducive to digital lending.
- Also, **Aadhaar Enabled Payments System (AEPS) and high smartphone penetration and a focus on digital India programme** adds complements to India's enabling regulation.

How digital lending will impact financial service ecosystem in India?

- **Efficiency and reach:** Digital lending are enabling financial service providers (FSPs) to offer better products to more underserved clients in faster, fair, efficient and inclusive manner.
- **Innovation and competitiveness:** Cost-efficiency gains from FinTech models drive product innovation, which will diversify and specialise business models to target wider markets. Also, it will increase participation of non-traditional players.
- **Credit risk management:** Enhancements to underwriting/ credit models using data from non-traditional data sources will improve robustness in credit risk management.
- **Ecosystem of growth and partnership:** Supportive and collaborative regulators will aid further growth of the FinTech ecosystem in convenience of segmentation, targeting and positioning (STP) online models and consumers to increase financial inclusion and mobile penetration.

How Digital/FinTech lending help in accessing underserved markets?

Limitations of access to underserved markets	How FinTech lending overcomes the limitations
Requirement for **physical verification and high costs.**	Utilises **digital footprint as a substitution for physical documents** for verification and/or **usage of third-party** data (e.g. e-commerce) in order to define eligibility, **which lowers operational costs** compared to conventional lending.
The underwriting process requires a **credit history or proof of a steady income or an asset-based collateral.**	Processes the **underwriting assessment** through **digital processing platform with various data points,** to identify **typical attributes for interest rates** to be charged, without prior collateral.
Cooperatives are relatively **small in size** and **lack of competitiveness** to attract money suppliers in the market.	Developed a **simple and convenient platform** for attracting investment, as most of the **processes are completed through digital platforms,** which attracts large number of potential lenders.
Risk of irrational credit and limited funding opportunities	Customised **credit assessment models,** which employ **behavioural data to identify typical attributes for charging interest rates,** supported by large amounts of funding from retail and institutional lenders.

What are the challenges faced by the digital lending ecosystem in India?

- **Unauthorised digital lenders:** There are cases about individuals and small businesses falling prey to a growing number of unauthorised digital lending platforms/mobile apps.
- **Over-indebtedness and NPA:** Taking out multiple simultaneous loans due to ease of access, limited or no evaluation of capacity to repay, limited customer understanding, could lead to over-indebtedness of consumers and NPA of lenders.
- **High interest rates and aggressive collection:** Unauthorised digital lending platforms are charging excessive rates of interest and high-handed recovery methods.
- **Data privacy:** There are concerns raised about misuse of agreements to access data on the mobile phones of the borrowers by digital lending platforms.

How challenges in digital lending ecosystem can be tackled?

- **National Lending Corporation (NLC):** An umbrella body NLC focussed on regulation over lending on line of the National Payments Corporation of India (NPCI) needs to be formed under the oversight of RBI.
- **Use of technology:** Application of artificial intelligence, machine learning, and blockchain in the lending space should be increased to evaluate capacity of consumers to overcome problem of Over-indebtedness and NPA.
- **Financial literacy:** It is vital to make aware consumers about frauds by unauthorised digital lenders and understand the digital lending ecosystem well.
- **Data protection:** There must be clear guidelines to ensure data security, privacy and confidentiality of consumers.
- **Code of conduct:** Digital lenders should proactively develop and commit to a code of conduct that outlines the principles of integrity, transparency and consumer protection, with clear standards of disclosure and grievance redressal.

3.3. STARTUP ECOSYSTEM IN INDIA

Why in news?

Recently, Prime Minister inaugurated the 'Prarambh: Startup India International Summit'. This is the largest Startup India International Summit organized by the Government of India since **the launch of the Startup India Initiative in 2016.**

More on news

- Prarambh is expected to bring **together top policy makers, industry, academia, investors, startups and all stakeholders** from across the globe in order to attain objectives like-
  - o **Deliberating on good practices** from best of the ecosystems across the world.
  - o Showcase the **spread and depth of entrepreneurship based on innovation in India.**
  - o Attain attention of **global capital for startups in India**, **mobilize domestic capital**, provide **opportunities for accessing international markets** and evolve **enabling policy provisions.**
- It is being organized by **Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.**
- **Over 25 countries and more than 200 global speakers** including members of **BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation) countries** participated in the inaugural event.

What is a Start-up?

The Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry has defined a start-up as an entity **that is** incorporated as a **private limited company** (as defined in the Companies Act, 2013) or Registered as a **partnership firm** (under the Partnership Act, 1932) or Registered as a **limited liability partnership** (under the Limited Liability Partnership Act, 2008) in India**.**

Furthermore, the department has stated that, an entity will be considered a start-up:

- **Up to a period of ten years from the date of incorporation/registration**,
- Provided it has an **annual turnover not exceeding Rs 100 crore** in any preceding financial year,
- If it works towards **innovation, development or improvement of products or processes or services**, or if it's a scalable business model with a high potential of employment generation or wealth creation.

What is current status of Start-up Ecosystem in India?

- India is currently the **third-largest startup ecosystem in the world** with close to **38 unicorns** (as of 2019) and with a collective valuation at around **$130 billion.**
- **Growth of the Start-up** has increased at an **average rate 15% year on year**. Also, this growth in not limited to one or two sectors but is **spread across sectors.**
  - o **Enormous growth** has been experienced in **technology centric startups** in health sector, education sector, agriculture etc. employing latest technologies like Internet of Things, Blockchain, Artificial Intelligence among others.

> **Socio-economic impact created by startups**
> Startups have showcased positive **disruptive impact** in the economic sphere with **encouraging employment**, **accelerating adoption of technology** and **filling the prevalent economic gaps.** Alongside, the startups are also **changing the demographic characteristics** of today's business-
> - **44 per cent** recognized **startups have women directors** and number of women working in these start up is very high.
> - **45 per cent startups are in tier 2 and tier 3 cities**, working as the brand ambassadors of the local products.
> - **Every state is supporting and incubating startups as per local possibilities** and 80 percent of districts of the country are now part of the Startup India mission.
> - **Youth from all types of background are able to realize their potential in this ecosystem** resulting in a mindset change from aspiring for a job to being a job creator.

What are the challenges Startup face in the current ecosystem?

- **Raising funds:** A recent report indicated that **85% of the new companies are underfunded** in the Indian startup parlance. Primary reason for this can be cited as weak Venture Capitalist and Angel investor framework alongside low risk appetite of the Indian market.

- **Revenue generation:** Startups generally require a certain amount of incubation time before they are able to generate revenue. This support remains inconsistent and also, difficulty in finding orders further compounds the revenue problem.
- **Inadequate supporting infrastructure:** The supporting infrastructure in the form of technology parks, logistical availability, business development centres still remains sporadic.
- **Bureaucratic hurdles:** Hurdles like poor Ease of Doing business in the form large number of regulatory compliances, complex labour laws etc. and inconsistent stance on emerging technologies like cryptocurrency, 5G among other further complicate the growth process.
- **Lack of mentorship and support:** Most of startups have brilliant ideas and/or products, but have little or no industry, business and market experience to get the products to the market. In this context, absence of this institutional ecosystem could bring a potentially good idea to an end.

How Startup India initiative aims to help address these challenges and encourage startups?

Launched in 2016, Startup India is a flagship initiative of the Government of India, intended to catalyse startup culture and build a strong and inclusive ecosystem for innovation and entrepreneurship in India.

Startup India Initiative has rolled out several programs. These programs are managed by a dedicated Startup India Team, which reports to DPIIT.

Startup India aims at resolution of problems via a 3-pronged strategy. *(Refer infographic)*
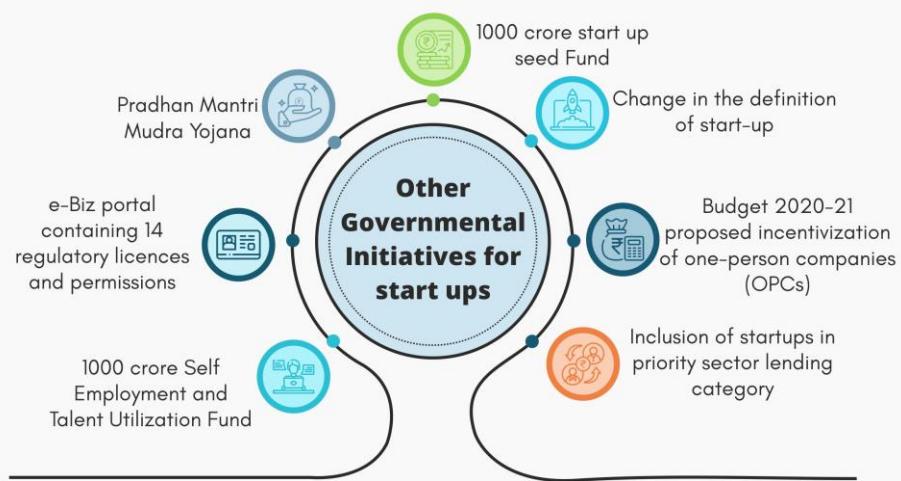
With the completion of 5 years of Startup India, its contribution to Startup ecosystem can be seen on following lines-

- Between 2016 and August 2020, Startup India programme has **recognised over 34,800 startups.**
- **Over $1 Mn worth benefits were given to 5,500 startups as part of over 150 startup innovation** programmes and challenges organised by Startup India. Also, Incubators and accelerators have grown by 11% reaching close to a number of 5,000.

3 PRONGED STRATEGY OF STARTUP INDIA

HAND-HOLDING

LEGAL SUPPORT
- Self-certification and compliance of 9 environment and labour laws through startup India web portal/mobile app

IPR
- Fast track startup patent applications
- Panel of facilitators to assist in filling IP application costs
- 80% rebate in filling of patents

EXIT PROCESS
- As per insolvency and Bankruptcy Bill 2015 ("IBB"). Startups with simple debt structures may be wound up within a period of 90 days

FUNDING/INCENTIVES

FUND OF FUNDS
- SIDBI Fund of Funds for Investment into startups set up by the Government with an initial corpus of INR 2,500 cr and a total corpus INR 10,000 cr over a period of four years

CREDIT GUARANTEE
- Credit guarantee mechanism through National Credit Guarantee Trust Company (NCGTC)/SIDBI is being envisaged with a budgetary corpus of INR 500 cr per year for the next four years

TAX EXEMPTIONS
- IT exemptions for 3 years Capital Gains Tax exemption to people investing such gains in the Government recognised Fund of Funds
- Tax exemption on Investments above Fair Market Value (FMV)

INCUBATION

INDUSTRY/ACADEMIA
- 31 Innovation Centres, 13 Startup Centres, 18 Technology Business Incubators, 7 Research Parks and 500 Atal Tinkering Labs
- 35 new incubators in existing institutioins, 35 new private sector incubators with funding support from the Government

COMPETITION/GRANTS
- NIDHI-INR 10 lakh to 20 student innovations form innovation and Entrepreneurship Development Centres (IEDC)
- Unhhattar Avishkar Yojana-INR 250 cr per annum to foster "very high quality" research among IIT students
- Annual Incubator Grand Challenge

EVENTS
- Organising startup fests for showcasing innovation and providing a platform for collaboration
- Startup talk shows

- **Over INR 3000 Cr has been committed by the government to 47 venture capital firms** and similar amount has already been invested in 323 startups from the **fund of funds corpus managed by Startup India through Invest India.**

- **Startup India enabled global market access and knowledge for Indian startups** through bilateral government collaborations with Russia, South Korea, Portugal, Japan, Netherlands, United Kingdom, Sweden, Finland, Israel, and Singapore.
  - o **Also known as a Startup Bridge**, these collaborations enable startups, investors, incubators, accelerators and aspiring entrepreneurs of both countries to connect with one another by providing them with resources to expand and become global entities.
- More **than 8,000 startups have been registered** on **Government e-Marketplace (GeM portal),** with whom government has **done business worth 2300 crore.**
- The base created by Startup India enabled growth of startups even in COVID times. For instance, 11 start-ups entered the 'unicorn club' in 2020.

Despite these initiatives the startup ecosystem is still hindered by systemic challenges like poor ease of doing business in the form of bureaucratic hurdles, limited capital availability in the market, absence of culture of innovation in higher education institutions and most importantly the disproportionate level of risk that the entrepreneurs have to take.

Way forward

In the light of these challenges, initiatives for startups should be complemented with structural changes such as creation of large scale infrastructure, encouraging innovation in education, strengthening industry-academia linkage and making entrepreneurship inclusive vis-à-vis region, gender, caste or socio-economic status. Providing these linkages to the Startup ecosystem will be essential in ensuring the idea of a- '**Of the Youth, By the Youth, For the Youth' startup ecosystem.**

3.4. FIXED TERM EMPLOYMENT

Why in news?

The Ministry of Labour and Employment (Ministry) has notified the draft of the **Model Standing Orders, 2020** for all manufacturing, mining and services sector. The draft document has explicitly mentioned **Fixed Term Employment as one of the classifications of a worker.**

More on news

- The draft order has inserted fixed-term employment as a category of employment but has removed "casual work" from the list. The list includes **six categories of workers, namely Permanent, Temporary, Apprentices, Probationers, Badlis and Fixed Term Employment.**
  - o A badli is a worker who is appointed against the post of a permanent worker or probationer who is temporarily absent.
- The draft order will be **applicable to all manufacturing and mining establishments** with **300 or more workers.**
- The order will be finalized and **integrated with the Industrial Relations Code Act 2020** after receiving feedback from experts, academics, and others.

Background on Statutory status of Fixed Term Employment
- As per the **Industrial Employment (Standing Order) Act 1946**, Fixed-term employment was initially made available only to **apparel manufacturing sector** in 2016 and then to **Footwear manufacturing sector** in 2017 through amendments**.**
- **Industrial Employment (Standing Orders) Central (Amendment) Rules, 2018** allowed all industries to hire workers on contract with a fixed tenure.
- On those lines, the **Union Ministry of Labour (in 2018) had urged all States to issue separate orders** permitting fixed-term employment (FTE) across all industries.
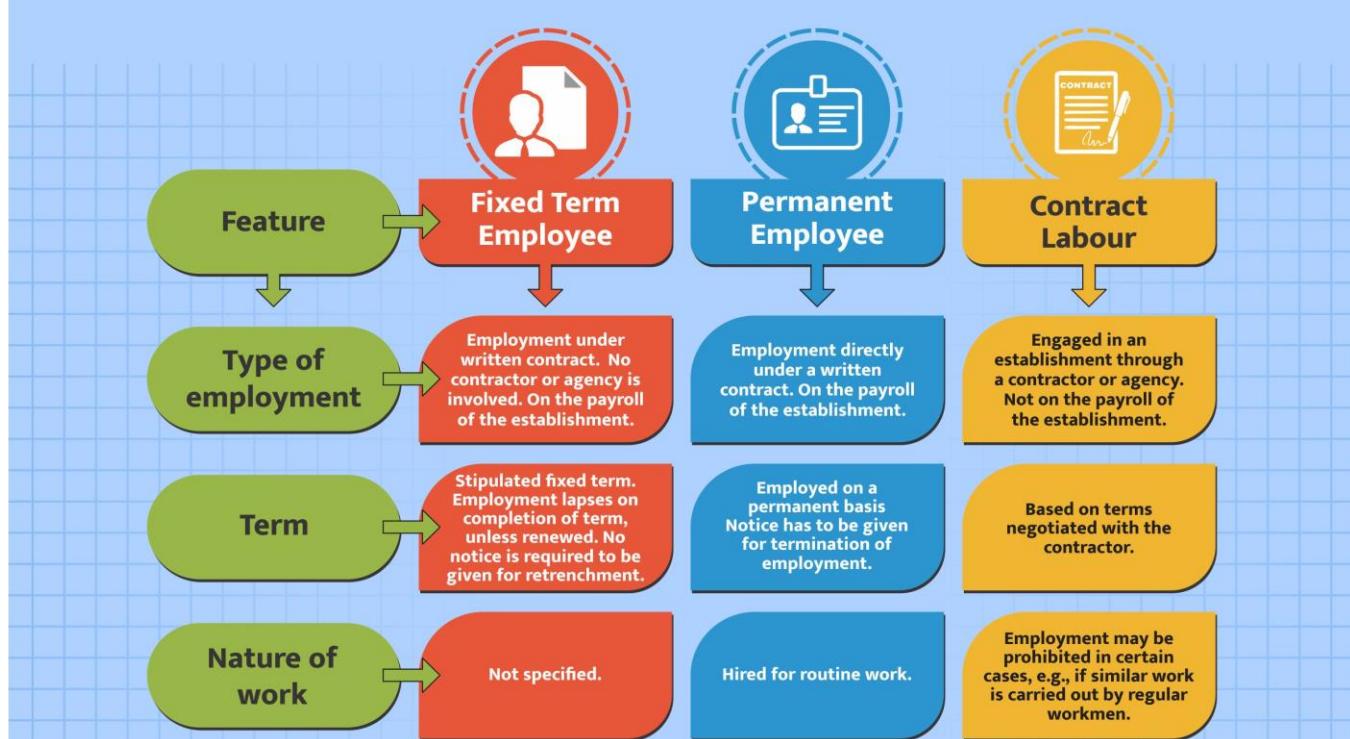
What is Fixed Term Employment?

Broadly, fixed-term employment is a contract in which a company or an enterprise hires an employee for a specific period of time. In most cases, it is for a year but can be renewed after the term expires depending on the requirement.

The Standing Order has provided following facets with regard to fixed term employment-

- According to it, "Fixed-term employment" means the engagement of the worker on the basis of a written contract of employment with an employer for a fixed period, but subject to following conditions-
  - His **hours of work, wages, allowances and other benefits shall not be less than that of a permanent worker** doing the same work or work of similar nature.
  - He shall be **available for all statutory benefits available to a permanent worker** proportionately according to the period of service rendered by him even if his period of employment does not extend to the qualifying period of employment required in the statute.
  - He shall be **available for gratuity**, if he renders service under the contract for a period of one year. (Gratuity refers to a sum of money paid to an employee at the end of a period of employment.)
  - For every completed year of service or part thereof in excess of six months, the **employer shall pay gratuity to the worker at the rate of 15 days wages.**
- The order has also clarified that termination of the service of a worker as a result of **completion of tenure will not be considered as retrenchment.**
- The draft proposes that salary payment will be more transparent and **all remuneration will be paid within a maximum of seven days after completion of the wage period of a worker.**
- It also states that the **wage rates should be displayed on an electronic device or notice board and website or human resources portal of the industrial establishment** in Hindi, English or the local language in which majority of the workers are conversant.
- Unlike most countries, there is **no cap on the number of times private firms can renew fixed-term contracts in India.**

COMPARATIVE ANALYSIS OF FIXED-TERM EMPLOYMENT

Feature	Fixed Term Employee	Permanent Employee	Contract Labour
Type of employment	Employment under written contract. No contractor or agency is involved. On the payroll of the establishment.	Employment directly under a written contract. On the payroll of the establishment.	Engaged in an establishment through a contractor or agency. Not on the payroll of the establishment.
Term	Stipulated fixed term. Employment lapses on completion of term, unless renewed. No notice is required to be given for retrenchment.	Employed on a permanent basis Notice has to be given for termination of employment.	Based on terms negotiated with the contractor.
Nature of work	Not specified.	Hired for routine work.	Employment may be prohibited in certain cases, e.g., if similar work is carried out by regular workmen.

What was the need for introducing fixed term employment?

- **Demand of changing work culture and new forms of employment:** In response to the growing gig-economy and entrepreneurial culture, statutory flexibility has been increased vis-à-vis expansion of definition of employment.
- **Need of seasonal and demand based industries:** Some industrial sectors like leather-based industries, textile market, meals industries and many others are seasonal or demand based in nature. The option of fixed term employment enables employers to tap the talented workforce for a short period of time.
- **Elimination of middlemen:** Within the new framework, and in conjunction with the Industrial Relations Code (IRC 2020), firms will be able to directly hire contract workers through the fixed-term contract without a middle man in the way.
- **Delay in payment to workers:** Delay in payment of remuneration has been a constant debate for decades and several industrial confrontations, including the recent one at iPhone manufacturer Wistron in Karnataka, was believed to have been linked to delay in payment to workers. The provision of release of renumeration within 7 days in the order will help address the same.
- **Alternative for contractual employment:** Under Fixed term employment, the person shall be eligible for getting all advantages which can be found for permanent workman for a similar work content material, in contrast to the contractual work.

What are concerns associated with it?

- **Potential threat to job security:** While industries favour fixed-term employment, trade unions have been against it claiming that it goes against the concept of job security.
  - For instance, trade unions have been apprehensive of the ambiguity in conversion of currently permanent employees to fixed term employment. Although, government has assured that no permanent employee will be moved to fixed term employment.
- **Difficulty in enforcement of agreements:** The basis for Fixed-term employment is a written contract, which will be difficult for employees to enforce given that financial capacity and ability to clearly understand the contracts for majority of the workforce is limited.
  - Also, contractual employment arrangements can be misused. For example, illiterate workforce can be subject to economic exploitation through deceptive contractual arrangements.

Way forward

The Notification is a step which signals the intent of the Central Government to retain India on the manufacturing world map, without significantly compromising on labour interests. But its effectiveness will be subject to **effective implementation of the order** and **implementation of complementary labour reforms in the form of Labour Codes**.

3.5. COMMERCIAL COAL MINING

Why in news?

Recently, a new online single window clearance portal was launched to speed up the operationalization of coal mines alongside the signing ceremony for the **first tranche of coal blocks to be auctioned for commercial use.**

Background

- **Through 'the Coal Mining Nationalisation (CMN) Act, 1973'** all the coal mines were handed over to the government-owned Coal India Limited.
  - **Before the 1970s, coal sector consisted mostly of private coal mines.** Nationalisation was needed to improve the poor working and living conditions and poor safety standards for labour.

Coal in India
- India has the **world's fifth-largest reserves of coal**, yet it is the world's second-largest importer.
  - In 2019, India imported about 235 million tonnes of coal (both thermal and coking coal) mainly from Indonesia, South Africa, Australia, and Russia.
- Currently, India produces about 729 million tonnes of coal per year with **83% of the production coming from Coal India Ltd (CIL).**
- Coal fired plants accounts for **72% of India's electricity generation.**
- Coal reserves are located mainly in states of: **Jharkhand, Odisha, Chhattisgarh, West Bengal, Madya Pradesh, Telangana, Maharashtra.**
- Indian coal reserves are **primarily of Lignite and Bituminous types** (other two types are Peat and Anthracite.
- **Indian coal has lower calorific value** and high ash content.

- **As the economy was liberalized, in 1993 the CMN Act, 1973 was amended to allow captive mining** by Private companies, and Public Sector Undertaking (PSUs) **(**for use in their own industrial units) in the power, steel, cement, aluminum sectors.
- **But theses mine allotments were cancelled by the Supreme Court in 2014** on the grounds that they were made arbitrarily.
- Therefore, Coal Mines (Special Provisions) Act, 2015 was passed paving the way for **captive coal mining through auction.**
- **Mineral Laws (Amendment) Act, 2020** was enacted for amendments in Mines & Mineral (Development and Regulation) Act 1957 and the Coal Mines (Special Provisions) Act, 2015 to end the captive coal regime and **clearing the path for commercial coal mining.**

Legislative framework on mining

- In the federal structure of India, the State Governments are the owners of minerals located within their respective boundaries. The Central Government is the owner of the minerals underlying the ocean within the territorial waters or the Exclusive Economic Zone (EEZ) of India.
- The regulatory framework for the mining industry is governed by both Central and State laws by virtue of the Seventh Schedule of Constitution of India.
  - **'Regulation of mines and mineral development' in the State list** is subject to the provision of Union list of the 7th schedule of the Constitution.
  - Union list states that the 'Regulation of mines and mineral development to the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the public interest.'
- Accordingly, Parliament passed the legislation 'Mines & Minerals (Development and Regulation) (MMDR) Act, 1957 for governing the mineral sector (other than Petroleum and Natural Gas) of the Country.
- Under MMDR Act, 1957, matters relating to regulation of mining of minor minerals and control of illegal mining of all minerals lie in the domain of State Governments.
  - The Ministry of Mines notifies 'minor minerals' which at present are 55.
- In the case of 'major minerals', States substantially regulate and develop minerals subject to provisions of the Act.
  - In the case of Coal, Lignite and Atomic Minerals, States are required to take prior approval of the Central Government to grant concessions.
- The Central Government retains the power of revision, fixation of royalty etc. in respect of major minerals.
- The Ministry of Coal determines policies and strategies in respect of exploration and development of coal and lignite reserves, sanctioning of important projects of high value and related issues.

About New commercial coal mining regime

Commercial mining allows the **private sector to mine coal commercially** without placing any end-use restrictions. The private firms have the option of either gasification of the coal or exporting it. They can also use it in their own end-use plants or sell them in the markets. **Key features of new regime:**

- **No previous mining experience is required** for participating in bidding.
- **100% foreign direct investment (FDI) through automatic rule** is allowed for coal mining.
- **The revenue sharing will be on an ad valorem** (the value of the transaction) basis and not on the basis of a fixed amount.
- The present bidding terms also **allow other minerals to be extracted from these blocks.**
- **The Ministry of coal will help the private sector in getting statutory approvals** like environment and other approvals.

Benefits from commercial coal mining

- **Reducing India's dependence on import:** India meets a fifth of its annual requirement of coal through imports which costs about Rs 1 lakh crore. Commercial coal mining can cut the import bill by Rs 30,000 crore.
- **Modernizing the coal sector:** The expectation is that the new mining majors will set new benchmarks in terms of mechanization, automation, mining practices, etc. Thus, the new regime will spur improvements across the industry.
- **Enhancing productivity of the coal sector:** By ending the monopoly of CIL and bringing in competition. Also, earlier captive coal mining entities had no incentive to enhance their production beyond their own needs.
- **Meeting the demand:** To meet its growth requirements and become self-sufficient, India need to expand its production to 1,500 million tonnes per year.

- **Revenue for the State:** In captive coal mining companies were not required to pay royalty to states as mined coal was meant for their own end use. But mines auctioned under new norms will generate total revenues of around Rs 7,000 crore per annum.
- **Development of aspirational districts:** Most of the mines auctioned under new norms are in aspirational districts. These mines would create more than 69,000 jobs once they are operationalised. Central Government will also spend money in creating infrastructure in these regions that means additional job and economic opportunity to such districts.

Hurdles in India's new commercial coal regime

- **Opposition from state governments that may ensue legal battles:** Jharkhand government has challenged the auctions under the new regime arguing that it stands to lose vital forest cover, its tribal communities will be displaced, and yet it hasn't been consulted.
- **Purported shallow competition which may keep bid prices low:** This is due to a smaller number of bidders as the auctions are held in the middle of COVID-19 pandemic. Additionally, no foreign firm has placed a bid as there is declining trend in corporate and financial interest in coal due to rising concerns over its environmental and social fallouts.
- **Eligibility criteria are broad enough to encourage non-serious bidding:** Non serious bidders may use coal mines as assets to leverage in the market, without any intention of actually mining them as happened during the 2000s.
- **Deep pockets and risk management capabilities are needed for beginning the production:** After winning a coal auction state and mining permits are required, rehabilitation and resettlement needs to be managed. Very few firms in India today have the financial and risk management capabilities to go through all of this.

Further steps required to make the new commercial coal regime a success

- **Addressing the concerns of the state regarding their declining revenue share:** There are massive community and environmental externalities of coal mining borne by states harbouring these mines. Under new regime states would lose an estimated Rs. 48 to Rs. 115 per tonne.
  - Therefore, improving the design of auction is needed to address the revenue concern of States. This would also do away any prospective legal challenge by states by bringing them on board.
- **Enact 'Sustainable Coal Mining Code' for removing the overlapping jurisdictions of multiple bodies:** The code should consolidate all statutory provisions governing opening/closing and environment/forest matters related to coal mines. It should also establish an independent, multi-disciplinary unified authority for ensuring compliance with various clearance and regulatory requirements.
- **Indicating the recoverable reserves instead of geological reserves would attract more bidders:** At present the offer document for coal blocks indicate Geological reserves. This is a quasi-scientific estimation of the reserves in a block which may or may not be extractable by employing usual technologies.
- **Technological upgradation for making coal mining environmentally sustainable:** Replacing blasting technology with cutting technologies for producing coal, introduction of 'in-pit' crushing, adoption of pipe belt conveyors for transportation of coal to silos or railway sidings and transition to pan-India use of only washed coal will help the sector.
  - **Incentives should be offered to bidders for adopting the state-of- the- art mining technologies.** This would ensure the infusion of new generation technology in the coal mining sector, where adoption of new-age technologies has been practically non-existent or very slow

3.6. ELECTRICITY (RIGHTS OF CONSUMERS) RULES, 2020

Why in news?

Recently, **Ministry of Power released Electricity (Rights of Consumers) Rules, 2020** which gives rights to consumers to get the reliable services and quality electricity.

Electricity (Rights of Consumers) Rules, 2020

- These rules are framed under the **Electricity Act, 2003,** which has a consumer charter.
- These rules empower the consumers of electricity by allowing consumers in India to **access continuous supply of quality, reliable electricity.**
- It **lay down rights that make distribution companies (DISCOMs) more accountable** to consumers.

- **These rights will**
  - empower the consumers of electricity **and ensure improved standard of living** as it has influence on a household's use of appliances.
  - **ensure savings for the consumer.** Direct savings to consumers come from lower energy cost and reactive power tariffs. **Indirect savings are gained by avoiding circumstances** such as damage and premature aging of equipment, loss of production or loss of data and work.
  - further the **ease of doing business** across country.

Challenges in ensuring consumer rights

- **No mechanism for effective monitoring:** Due to lack of effective mechanism it is difficult to hold DISCOMs accountable. This is the reason why many states despite having rules in place could not protect consumers' rights as they could not implement the provision of compensation in spirit.
- **Purported conflict of interest:** The proposed Consumer Grievance Redressal Forum which is supposed to remedy complaints against DISCOMs would be headed by a **senior officer of the DISCOMs**. This causes conflict of interest and may result in decisions which may go against the interests of consumers, thereby eroding its credibility.

> **Key areas are covered in the Electricity (Rights of consumers) Rules**
> - **Rights of consumers and Obligations of Distribution licensees:** Every distribution licensee is obliged to supply electricity on request and the consumers have the right to have minimum standards of service.
> - **Release of new connection and modification in existing connection:** Transparent, simple and time bound processes.
> - **Metering arrangement:** No connection shall be given without a meter and it shall be the smart pre-payment meter or pre-payment meter.
> - **Billing and Payment** to pay bills online or offline.
> - **Disconnection and Reconnection provisions.**
> - **Reliability of supply:** Recognize 24x7 power supply to the consumers as their right. However, for some categories like agriculture, power regulator may specify lower hours of supply.
> - **Consumer as prosumer** (those who consume as well as produce energy): While prosumers will maintain consumer status, they will also have right to set up Renewable Energy generation unit – either by themselves or through a service provider.
> - **Standards of Performance of licensee:** Compensation amount to be paid to the consumers by the distribution licensees for violation of standards of performance
> - **Compensation Mechanism:** A consumer can claim compensation for no supply, interrupted electricity supply, time taken for replacement of defective meters etc. from the discoms.
> - **Call Centre for Consumer Services:** Distribution licensee shall establish a centralised 24x7 toll-free call centre.
> - **Grievance redressal mechanism:** Consumer Grievance Redressal Forum (CGRF) which, would include consumer and prosumer representatives.

- **Disparity amongst states:** Many States have not been able to provide quality supply, especially to rural and small electricity consumers.
  - Guarantee of round the clock supply is a provision that the Rules emphasise, which might be missing in State regulations.
- **Ambiguity on net metering:** Net metering is a billing mechanism that credits solar energy system owners for the electricity they add to the grid**.**

> **Related information**
> - **A recent joint study** by Smart Power India (SPI), NITI Aayog and the Rockefeller Foundation **showed that**
>   - **Only 55% customers were satisfied with the quality of their electricity supply**.
>   - Appliance damages in the past one year played an important role for the customers to decide upon the quality of supply of power
>   - Overall**, a total of 63% of the surveyed customers are satisfied with the service** provided to them.
>   - **74% of the urban customers are satisfied** with the reliability against the 60% satisfied customers in rural areas.

  - Rules guarantee net metering for a solar rooftop unit less than 10 kW, but there is no clarity if those above 10 kW can also avail net metering. This could lead to a change in regulations in many States based on their own interpretations. Leading to possibilities of litigation.
- **People may not raise the complaint:** In absence of public awareness, consumer complaint mechanism is, generally, adopted by only few resourceful.

Way ahead

- **Measuring the performance of DISCOMS:** This could be done through Power Quality Indices.

- o The Central Electricity Authority of India could be directed to **collect supply quality data from DISCOMs, publicly host them on online portals** and prepare analysis reports.
- **Consumer Grievance Redressal Forum:** This office has a critical role to play in protecting the consumers' rights, hence there is need to ensure their effective role during grievances.
  - o **For example:** State regulations in Delhi strictly bar the DISCOM employee, who was in service in the last two years, from being appointed as a forum member.
- **Real time data reporting with smart systems:** Mandating smart systems for networks which communicate the real time information and power quality deviations existing in upstream and downstream to all stakeholders.
- **Power quality monitoring system:** Mandating installation of power quality monitoring instruments at transmission, sub-transmission and distribution substation. Monitoring frequency and responsibilities need to be additionally incorporated in existing frameworks.
  - o Moreover, DISCOMs could be directed to ensure automatic metering at least at the 11 kV feeder level and making this data available online.
- **Consumer awareness programmes**: State Electricity Regulatory Commission (SERRC) should organise public processes to make consumers aware about their rights as well as to **raise their concerns.**

Conclusion

Good quality power supply is more requisite today than ever before and to fulfill the targets of SDG 7 to ensure affordable, reliable, sustainable and modern energy for all. The consumer satisfaction will be cutting edge in the competitive environment in the 21st century. Above all, without accountability, consumer compensation remains elusive. Therefore, an effective mechanism to uphold accountability must be devised.

3.7. PRADHAN MANTRI KISAN SAMMAN NIDHI (PM-KISAN)

Why in News?

Recently, a RTI reply from Ministry of Agriculture revealed that **PM-KISAN payments worth ₹1,364 crore have been wrongly made to more than 20 lakh undeserving beneficiaries.**

More on News

- **As per the data, two categories of undeserving beneficiaries were identified-** ineligible farmers (44.41%) and income tax payee farmers (55.58%).
- A major chunk of these ineligible beneficiaries belonged to five states — **Punjab, Assam, Maharashtra, Gujarat and Uttar Pradesh.**

About PM-KISAN Scheme

- It is a Central Sector Scheme with 100% funding from Government of India.
- Under the scheme **Income support of Rs.6000/- per year** is provided to **all land holding farmer families** across the country, irrespective of land size, in three equal instalments of Rs.2000/- every four months.
  - o Amount is released by the Central Government directly into the bank **accounts of the eligible farmers under Direct Benefit Transfer mode.**
- **Objective of the scheme is to**
  - o **Provide income support to all landholding farmers' families** (irrespective of the landholdings) in the country.
  - o **Supplement financial needs of farmers for procuring various inputs** related to agriculture and allied activities as well as domestic needs.
- Farmer's family is defined as a **family comprising of husband, wife and minor children.** There are around 11 crore beneficiaries registered under the scheme.
- Responsibility of **identification of beneficiary farmer families rests with the State / UT governments**.
- The benefit shall be paid to only those **farmers families whose names are entered into the land records** except for Forest dwellers, North-eastern states and Jharkhand which has separates provisions for land records.
- Scheme provides **exclusion criteria for certain category of farmers (refer infographic).**

- **Other Benefits provided by scheme include:**
  - **Making farmers credit worthy** as financial institutions have assured cash flow for this vulnerable section.
  - Scheme has significantly **stimulated the Krishi Vigyan Kendra's impact on the adoption of modern cultivators**.

Issues identified

- **Lack of Farmer Data Base:** The scheme was hurriedly announced, and the government did not have proper database of farmers. Many states like West Bengal, have delayed or did not submit the data related to farmers.
- **Difficulty in Identifying Beneficiary Farmers:** Land holding does not determine the number of farmer families present in the country as there are multiple owners for a single land or a single owner for multiple landholdings.
  - For ex: Number of landholdings in Punjab (agricultural census 2015-16) were 10.39 lakh but number of beneficiaries farmers in PM-kisan data base list were 17.52 lakh till October 2019.
- **Role of Banks:** There are reports that several bank branches adjusted the deposit money against past liabilities of few farmers. This kind of scenarios may lead to subversion of the objectives of the income support scheme.
- **Neglect of lessee cultivators:** Benefits accruing to lessee cultivators or share-croppers under PM-KISAN have not been explicitly mentioned. Also, identification of these lessee cultivators continues to be a huge challenge.
- **Inadequate financial support:** The amount offered by PM-KISAN, is largely insufficient for even bare minimum sustenance of vulnerable farmers.
- **Lack of grievance redressal mechanism:** Scheme does not provide a clear design of transfers and a framework for effective grievance redress. In such scenario, state governments will struggle to resolve complaints and curb corruption.

Way Forward

- **Strengthening IT backbone:** States with robust IT infrastructure will be in a better position to implement PM-KISAN.
- **Targeting updation of land records:** It will ensure that eligible cases are not deprived. Similarly, fraudulent claims will also be avoided.
- **Focus on other reforms:** Any income support scheme can't cover all the farm households and therefore, enhancing investments in rural infrastructure (roads, irrigation, marketing infrastructure, etc.) and agri R&D will be helpful.

Scheme Exclusion

The following categories of beneificiaries of higher economic status shall not be elligible for benefit under the scheme.

❶ All Institutional Land holders.

❷ Farmer families which belong to one or more of the following categories:

i) Former and present holders of constitutional posts

ii) Former and present Minister/State Ministers and former/Present Members of LokSabha/RajyaSabha/State Legislative Assemblies/State Legislative Councils, former and present Mayors of Municipal Corporations, former and present Chairpersons of District Panchayats.

iii) All serving or retired officers and employees of central/State Government Ministries/Offices/Departments and its field units Central or State PSEs and Attached offices/Autonomous Institutions under Government as well as regular employees of the Local Bodies (Excluding Multi Tasking Staff/Class IV/Group D employees)

vi) All superannuated/retired pensioners whose monthly pension is Rs. 10,000/- or more (Excluding Multi Tasking Staff/Class IV/Group D employees) of above category

v) All Persons who paid Income Tax in last assessment year

vi) Professionals like Doctors, Engineers, Lawyers, Charted Accountants, and Architects registered with Professional bodies and carrying out profession by undertaking practices.

Similar Income support schemes

- **Telangana's Rythu Bandhu scheme:** provides Investment Support for Agriculture and Horticulture crops by way of grant of Rs. 5,000/- per acre per farmer each season for purchase of inputs like Seeds, Fertilizers, Pesticides, Labour and other investments.
- **Odisha's Krushak Assistance for Livelihood and Income Augmentation (KALIA) scheme:** Provides financial, livelihood, cultivation support along with insurance support to small, marginal and the landless farmers.

- **More freedom to states:** A bottom-up strategy and well-planned implementation mechanism would allow weaknesses to be identified and rectified at the local level. The most effective modalities can then be scaled nationally.
- **Better timing of providing installments:** Reports highlight that farmers receiving PM-KISAN benefits in the agricultural peak season are more likely to spend it on agriculture, and those getting it in the off-season are more likely to spend it on consumption. As a result, improved timing of installments would improve the efficacy of the schemes.

3.8. PM FASAL BIMA YOJNA

Why in news?

PM Fasal Bima Yojna (PMFBY) has completed 5 years of its operation.

About PMFBY

- PMFBY is a Central Government's **flagship crop insurance scheme** launched in 2016 that replaced the earlier two schemes National Agricultural Insurance Scheme and Modified NAIS.
- It aims to provide insurance and financial support to farmers in the event of crop failure and targets to bring 50 per cent of cultivated area under crop insurance to:
  - o stabilise farmer's income,
  - o ensure the flow of credit and
  - o encourage farmers to innovate and use modern agricultural practices.

Achievements of the scheme

The PMFBY was conceived as a milestone initiative to provide a comprehensive risk solution at the lowest uniform premium across the country for farmers.

- **Average sum insured per hectare** has increased from Rs 15,100 during the pre-PMFBY schemes to Rs 40,700 under PMFBY.
- **Covers** over **5.5 crore farmer** applications year on year and claims worth **Rs. 90,000 crore** paid as of Jan 2021.
- **Speedy claim settlement** directly into the farmer accounts **through Aadhar linkage.**
- During COVID-19 lock down period, **70 lakh farmers** benefitted and claims worth Rs. 8741.30 crores were transferred.
- The **scheme was made voluntary for all farmers**, (which was one of the challenges in success of the scheme) after its revamp in February 2020. Further, the **states have also been provided flexibility to rationalise the sum insured** so that adequate benefit can be availed by farmers.

Issues with the scheme

- **Structural Issues:**
  - o **Discretionary powers with the State government:** It is unclear how states should choose the major crops during a season for different districts, which results in the exclusion of farmers who grow non-notified crops.

Features of the PMFBY

- **Coverage of Farmers:** All farmers growing notified crops in a notified area during the season who have insurable interest in the crop are eligible.
- **Coverage of Crops:** State government notifies major crops for the Rabi and Kharif seasons.
- **Premium Rates:** Farmers pay just 1.5 per cent premium for rabi, 2 per cent premium for kharif and 5 per cent for commercial crops. Balance premium is paid by the state and central governments in equal proportion.
- **Area-based Insurance Unit:** all farmers in a particular area must pay the same premium and have the same claim payments. The area approach reduces the risk of moral hazard and adverse selection.
- **Coverage of Risks:** It aims to prevent sowing/planting risks, loss to standing crop, post-harvest losses and localised calamities. The sum insured is equal to the cost of cultivation per hectare, multiplied by the area of the notified crop proposed by the farmer for insurance.
- **Innovative Technology Use:** It recommends using drones to estimate crop loss; and using mobile phones to reduce delays in claim settlements.
- **Cluster Approach for Insurance Companies**: It encourages bidding amongst insurance companies before being allocated to a district to ensure fair competition.

Rationale for Crop Insurance in India

- **Small and marginal farmers** with less than two hectares of land account for 86.2 percent of all farmers in India but own only 47.3 percent of the crop area. Such small average holdings do not allow for surpluses that can financially sustain families.
- **70 per cent of agricultural production is vulnerable to vagaries of monsoon**. Sixty per cent fluctuation in yield is caused by weather shocks which results in fluctuating incomes and unstable livelihoods.
- The commercialisation of agriculture leads to an increase in credit needs, but **most small and marginal farmers cannot avail credit** from formal institutions due to the massive defaulting caused by repeated crop failure.

- o **No provision for farmer's revenue protection:** Being only a yield-protection insurance, this scheme fails to take into account revenue protection. In case of a low or negative wholesale prices of food articles, farmers are rendered unable to breakeven their investment for crop production, and left with little income security for the next season.
- o **Crop cutting experiments(CCE's) to estimate crop loss are not reliable:** There is a lack of trained professionals to handle the CCEs, and the current technology is not reliable. This has led to delays in assessment and settlement of claims.
- o **Lack of farmer awareness**: According to the CAG, out of 5,993 farmers surveyed, only 37% were aware of the schemes and knew the rates of premium, risk covered, claims, loss suffered, etc. highlighting the fact that publicity of the schemes was not adequate or effective.
- o **Low participation of tenant farmers and sharecroppers** due to non-uniform land lease policies of state governments.
  - ✓ For instance, leasing agricultural land is prohibited in Kerala and J&K, while states such as Bihar, MP, UP and Telangana have conditions on who can lease out land, which prevents many tenant farmers from buying insurance.
- o **No provision for competitive pricing:** As per the scheme guidelines, every cluster has a specific insurance company selling insurances, creating infrastructure and manpower for three years. Lack of competition serves as a disincentive for insurance companies to improve or upgrade their products and pricing, and creates a monopoly over a scheme.
- o **One-size fits all approach:** All the farmers in the country have been treated as similar without any option to choose an insurance that meets the specific needs of their region.
- **Financial Issues:**
  - o **Delays in claim settlement:** Claim settlements are not done as per 45-day norm by the insurance companies. As on November 2019, insurance claims worth ₹25.11 billion had been due from more than 1 year. This has generated trust deficit among farmers.
    - ✓ Payment of claims gets delayed due to reasons such as delayed transmission of yield data, late release of their share in premium subsidy by some States, yield-related disputes between insurance companies and States, etc.
  - o **Impact on state finances:** High premium as compared to claims paid by insurance firms has impacted state finance and led to exit of state governments from PMFBY. For instance, Bihar discontinued PMFBY from Kharif 2018–2019 and started Bihar Rajya Fasal Sahayata Yojana (BRFSY) crop insurance scheme.
  - o **Skewed pattern of benefit ratio:** It has been observed that only 50 districts have repeatedly accounted for 50 per cent of all claims under PMFBY. Southern states of Kerala had the highest benefit ratio of 72 per cent, followed by Karnataka (49%), Andhra Pradesh (47%), and Tamil Nadu (40%). Lowest benefit ratio was obtained for Jharkhand (7%) and Bihar (8%).

Way forward to revamp the scheme
- **Strict compliance with timelines for claim settlement** to ensure adequate and timely compensation to farmers. The claim-settlement chain or the logistics behind doling out claims must be improved to process claims faster.
- **Ensuring inclusivity:** It is crucial to include women farmers, tenant farmers and sharecroppers to help formalise this economy, protecting revenue and jobs. Inclusivity in the agricultural sector is **key to achieving the Sustainable Development Goals.**
- **Incentivising the development and use of technology**: The use of remote-sensing, drones, satellite imagery and digitisation of land records should be urgently promoted for effective implementation of the PMFBY. States must fund, train and implement these practices to facilitate the success of this scheme.
- **Competitive Pricing:** The provision of at least two insurance companies in a cluster of villages in one state will help farmers benefit from competitive pricing for insurance products.
- **Increasing penetration of crop insurance**: Mandatory awareness programmes on the benefits of crop insurance must be developed and made available to farmers. Role of village-level authorities is crucial for awareness and enrolment of farmers in crop insurance.
  - o In West Bengal, for instance, the gram panchayat, took aggressive efforts to promote State crop insurance scheme and as a result, in the first year itself farmers adopting crop insurance registered a growth rate of 216.1 per cent as compared to 5.6 per cent at the national level.

- **Linking crop insurance with climatic changes** and redesigning insurance products to make them not just risk transfer tools but a tool to reduce the risk and loss of crops.
- **Offering insurance as priority insurance on the lines of priority sector lending** can increase penetration of crop insurance in rural areas.

Conclusion

An effective crop insurance system is crucial in cushioning income losses for farmers, financing inputs for agricultural production, and increasing access to agricultural credit to boost agricultural productivity. Tackling the fundamental flaws that exist in the scheme is necessary protect the vulnerable farming population and to promote financialization and formalisation of the agricultural economy.

3.9. WORLD ECONOMIC SITUATION AND PROSPECTS REPORT 2021

Why in News?

Recently, United Nations Department of Economic and Social Affairs, United Nations Conference on Trade and Development (UNCTAD) and the five United Nations regional commissions jointly released WESP report.

About the Report

- It is an **annual UN flagship publication** on the state of the world economy, viewed through the lens of the 2030 Agenda for Sustainable Development.
- WESP 2021 report presents various findings about world economy that was hit by a **once-in-a-century crisis a Great Disruption** unleashed by the COVID-19 pandemic in 2020.

Key Highlights of report

- **Impact on economic growth**
  - World gross product fell by an estimated 4.3% in 2020—**the sharpest contraction of global output since the Great Depression.** In contrast, world output had shrunk by 1.7% during the Great Recession in 2009.
  - **Developed economies were hit the hardest.**
  - Among G20 economies **only China managed to register a positive growth** in 2020.
- **Impact on Job loss and poverty**
  - Full or partial lockdown measures had affected almost 2.7 billion workers, about 81% of the world's workforce. Women have been particularly hit by the pandemic,** as they account for more than 50% jobs in labor-intensive service sectors.
  - With the crisis accelerating the pace of digitalization, automation and changing economic structures, **millions of jobs that were lost in 2020 will not come back.**
  - Total number of **people living in poverty is expected to increase by 131 million in 2020 alone.**
- Massive **fiscal responses prevented a Great Depression-like economic catastrophe** worldwide. At 15.8% ($12.7 trillion) of world gross output in 2020, this is the **largest fiscal response since the Second World War.**
- Report warns about **risks of financial instability** due to excessive liquidity and low inflation, rising protectionist tendencies, weakening the role of World Trade Organization.
- New technologies, accelerating the pace of digitalization and automation, are **redefining comparative advantages in global trade**, bringing production systems closer to consumers. However, **global digital divide** will place many developing countries at a competitive disadvantage.

Findings related to India

- **Informal workers,** accounting for over 80% of workers in Bangladesh, India and Pakistan have indeed been **far more exposed to loss of employment than formal workers.**
- By mid-2020, **unemployment rates had quickly escalated** to record highs of 23% in India.
- India stands out in terms of **building competitive services exports.**
- Ambient water quality improved during lockdowns, for example, in the Yamuna River and Sabarmati River in India.
- India's economic growth has fallen from 4.7 per cent in 2019 to -9.6 per cent in 2020, as lockdowns and other containment efforts slashed domestic consumption without halting the spread of the disease, despite drastic fiscal and monetary stimulus.

SDGs suffering collateral damages

SDG 2	An estimated 270 million people worldwide are now facing crisis level hunger.	
	Financial constraints & subdued demand will hinder development of small scale industries.	SDG 9
SDG 11	Decline in demand and revenue of public transport will pose challenge to future mobility of cities.	
	Consumption of single-use plastic has increased as a consequence of pandemic.	SDG 14

Suggestions given in the report

- **Report cautioned against austerity** as it will inevitably weaken the speed and quality of the recovery and undermine resilience to future shocks.
- **Need for universal social protection is felt** because of increasing vulnerability of hundreds of millions of people to economic, health and environmental shocks.
- **Developing countries need to reassess their development strategies** and explore models of the dynamic comparative advantages to be derived from digitalization and the expansion of service-related activities.
- **Global Value Chains (GVCs) should be more flexible and robust** through diversification of the supply base and a shortening of the distance between suppliers and the retail base.
- The pandemic responses need to prioritize efforts to **reduce inequality not only in income and wealth but also in access and opportunities.**
- **COVID-19 pandemic can also serve as positive momentum for WTO reform.** Pandemic highlighted that keeping trade flowing and limiting protectionist and nationalist measures are vital to ensuring the safety of lives and livelihoods.

4. SECURITY

4.1. INTELLIGENCE REFORMS

Why in News?

In the backdrop of repeated China's incursions, experts have called for intelligence reforms.

Intelligence Framework in India

- India's existing intelligence apparatus **comprises an assortment of agencies** that have specific mandates.
- At the apex level, the **National Security Council Secretariat (NSCS),** headed by the National Security Advisor (NSA), was set up by the government following the 1998 Pokhran-II nuclear tests.
  - o It operates within the executive office of the Prime Minister of India, **liaising between the government's executive branch and the intelligence services**, advising leadership on intelligence and security issues.
- In 2018, the **Joint Intelligence Committee (JIC),** a body created to aggregate and analyse all intelligence from the various agencies, was subsumed into the NSCS.
- **Various Intelligence agencies**
  - o **IB,** created in 1887, reports to the Ministry of Home Affairs and is responsible for India's domestic intelligence, internal security, and counter-intelligence.
    - ✓ It was first named Indian Political Intelligence Office and it was given its current name after Independence.
  - o **Research and Analysis Wing (R&AW),** meanwhile, is the country's foreign intelligence agency formed in 1968.
    - ✓ It comes under the direct command of the prime minister. R&AW is a wing of the Cabinet Secretariat.
  - o **National Technical Research Organisation** (NTRO; erstwhile National Technical Facilities Organisation): It was established in 2004 and is the technical intelligence agency of the Government of India.
    - ✓ NTRO comes under the National Security Advisor and is part of the Prime Minister's Office.
  - o **Directorate of Revenue Intelligence (DRI):** It is tasked with anti-smuggling intelligence; it was set up in 1957, and falls under the Ministry of Finance.
- The "norms of conduct" of the IB, R&AW and NTRO are governed by the **Intelligence Organisations (Restrictions of Rights) Act, 1985**.
  - o Additionally, employees of Indian intelligence agencies are **subject to the Official Secrets Act (first enacted in 1923)** that governs, among others, the sharing of classified information.
- However, these **various intelligence agencies tend to overlap in their functions**, either by design or as a natural consequence of their activities.

Need for Intelligence reforms

- **Diverse and complex national security threats:** These threats range from nuclear-armed adversaries like China and Pakistan, to Maoists, and militancy and terrorism arising from within its borders and beyond.
  - o Other threats include cyber intelligence, counterterrorism, counter proliferation, counter intelligence etc.
- **Shortage of personnel:** Lack of intellectual capacity and investment in education system exacerbate recruitment shortfalls in intelligence agencies.
- **Oversight over intelligence agencies:** as the risk of overstepping boundaries and violating the rights of citizens in a democracy for the sake of security is ever-present.

Challenges faced by Intelligence agencies

- **Lack of coordination:** Amongst intelligence agencies and between state and Central agencies. Also, Intelligence collection is ad-hoc in the absence of clear-cut requirements from the consumers of intelligence i.e. both civilian and defense institutions.
- **Sporadic and crisis-linked reforms:** Where as true reform would consider past experiences, present conditions and evolving threats to make a judgement on the kind of intelligence agency required, say, fifteen to twenty years from now.
- **Issue of overlapping functions of various agencies:** such as whether the Defence Intelligence Agency had the same authority to conduct cross-border Human intelligence operations as Military Intelligence.

- **Weakness in information analysis:** As intelligence is as good as the process that converts this information into knowledge and the ability of the ultimate user to assimilate this intelligence.
- **Inadequate intelligence technologies:** India's domestic capability is sorely missing. The country is almost exclusively dependent on foreign imports from countries such as Israel and US.

Way forward

- **Better coordination:** Appoint a National Intelligence Coordinator/Director of National Intelligence to bring about better interagency coordination, remove overlaps and duplications, end 'turf-wars' and ensure better utilisation of national resources.
- **Providing legal status:** That would give India's intelligence community a statutory basis and a charter, and will provide it with institutional levels of accountability.
- **Improving accountability:** Strengthen financial accountability by annual reports to Comptroller & Auditor General (CAG)/NSA, a separate intelligence ombudsman, Set up a Parliamentary Accountability Committee for oversight of intelligence agencies etc.
- **Robust base in technology and innovation:** Such a framework will need a tripartite partnership between government, private sector and the academia. There is a need to identify specific technology pathways and create a concrete five-year plan to swiftly build local capacity.
- **Reforms in recruitment, deputation, promotion and training:** By having open and separate direct recruitment mechanisms for different intelligence agencies, improving training modules, improving quality of trainers and in situ promotions to improve morale at middle, mid-senior levels.
- **Gathering information from open sources:** Information is emanating not only from traditional media sources such as newspapers, magazines and television, but also social media like micro-blogs, Twitter and Facebook.
- **Capacity for analyzing gathered information:** There is need for the system to separate collection and analysis of intelligence while strengthening both these functions.
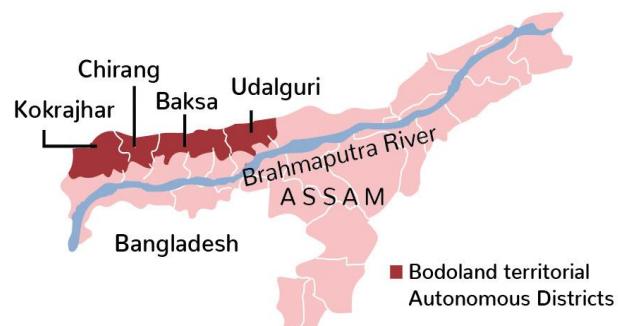
4.2. BODO PEACE ACCORD

Why in News?

First anniversary of the 3rd Bodo Peace Accord was celebrated in Assam recently.

About Bodos

Chirang, Kokrajhar, Baksa, Udalguri — Brahmaputra River — ASSAM — Bangladesh — Bodoland territorial Autonomous Districts

- Bodoland is a **state demanded by a tribal community called Bodos in Assam**, who comprise of 5%-6% of the state's population.
- They are single largest tribal community in Assam.
- It **consists of regions located extreme north of north bank of Brahmaputra river** in the state of Assam, by the foothills of Bhutan and Arunachal Pradesh.
- The demand for a separate state for Bodos is rooted in reasons like **administrative and development apathy of the state of Assam, and a feeling that identity, culture and language of the Bodo people were subsumed by the Assamese and migrants.**

About 3rd Bodo Peace Accord

- 3rd Bodo Peace Accord as **tripartite agreement between the Centre, Assam Government and the banned Assam- based insurgent**

> **Timeline of the Bodoland dispute**
>
> **1960s and 1970s** - There were calls from Bodos and other tribes for a separate state of 'Udayachal' as immigrants were accused of illegally encroaching on Bodo-inhabited lands. Demand was raised under the banner of the Plains Tribals Council of Assam (PTCA), a political outfit.
>
> **1993 -** The Bodoland Autonomous Council (BAC) was constituted after the Centre, the Assam government and the All-Bodo Students Union (ABSU) signed a tripartite agreement. However, BAC failed due to non-implementation of various provisions of the Accord.
>
> **2003** - The Bodoland Territorial Council (BTC) was formed after the Centre; the Assam government and the BLT sign a tripartite agreement. The BLT is disbanded.
>
> **2005** – NDFB agreed to a ceasefire with the Assam government and the Centre. After the treaty was signed, the group splits into three factions. One of those factions, the NDFB (S) continued to carry out violent attacks.

group National Democratic Front of Bodoland (NDFB) was signed on 27th January 2020, for bringing a lasting peace in Bodo-dominated areas in Assam.

- **Key highlights of the accord**
  - o **Bodo Territorial Areas District (BTAD)** was reorganized by including new **Bodo-dominated villages contiguous to the existing BTAD and excluding villages with a predominantly non-tribal population.**
  - o **BTAD renamed as Bodoland Territorial Region** with more executive, administrative, legislative and financial powers.
  - o **A commission,** headed by a neutral person and represented by stakeholders, **will be constituted by the central government for the demarcation and reorganisation of the BTR**
  - o Bodos living in hills districts of Karbi Anglong and Dima Hasao would **be conferred Scheduled Hill Tribe status**.
  - o **Number of seats in Bodoland Territorial Council will be increased** from 40 to 60.
  - o **Bodo with Devnagri script would be associate official language** for entire Assam.
  - o Deputy Commissioners and Superintendents of Police will be posted in consultation with the Chief Executive Member (CEM) of the BTC.
  - o **A Special Development Package of Rs. 1500 crores** over three years were provided.

Significance of 3ʳᵈ Bodo Peace accord

- **Ensuring peace and harmony in the BTAD:** It is the first peace agreement in the Northeast where all the existing insurgent groups in a particular area have put their signatures, with a joint commitment to end violence.
- **Satisfying the identity and aspirations of the Bodo people:** The change of Bodoland Territorial Area Districts to Bodoland Territorial Region (from districts to region) is significant as it acknowledges a Bodo homeland within the state of Assam, without separating from Assam and also satisfying the identity and aspirations of the Bodo people.

  > **Progress so far**
  > - **Boundary commission has been formulated** to give a new shape to the BTR,
  > - Development work for the residents of the Bodo region is being done through various commissions and advisory committees.
  >   - o **65 schemes worth Rs. 750 crore have been commissioned**, and a separate allocation of Rs. 565 crore has also been done.
  > - **Assam Official Language (Amendment) Bill, 2020 passed** to give due respect to the Bodo language,
  > - **Assistance of Rs. 4 lakh has been started for all surrendered militants**.

  - o The accord has provided for setting up of a BodoKachari Welfare Council for 'development' of Bodo villages located outside the Bodo Council area, and declaring Bodo language in Devnagri script as an associate official language of Assam
- **Democratic decentralisation:** Accord has provided more legislative, executive, administrative and financial powers to BTC.
  - o In Northeast, Panchayati Raj institutions, Autonomous District Councils, and Sub-State Regional Development Councils have not been able to achieve the objective of decentralization in decision-making process as they have lacked real power and modern outlook and efficiency
- **Brings development:** Economic package that forms part of the accord, is expected to usher in a new era of development in the BTR region.
  - o The package includes a Central university, a national sports university, a North East Regional Institute of Medical Sciences and a National Institute of Technology.

5. ENVIRONMENT

5.1. ADAPTATION GAP REPORT 2020

Why in News?

Fifth Adaptation Gap Report was released by **United Nations Environment Programme** (UNEP).

About Adaptation Gap Report

- Since 2014, these reports have **focused on exploring Finance, Technology and Knowledge gaps in climate change adaptation.**
  - It **complements the Emissions Gap Report series** – exploring global progress on adaptation and options for enhancing the global adaptation efforts.
- 2020 edition looks at progress in planning for, financing and implementing adaptation – with a **focus on nature-based solutions.**

What is Adaptation Gap?

Why Adaptation Finance is required?

- Adaptation finance represents an important aspect of international cooperation towards adaptation and is **critical to enhance adaptation planning and implementation and limit climate damages,** particularly in developing countries
  - **Public finance will help in strengthening the capacities of various stakeholders,** covering incremental costs of adaptation, creating incentives for institutions and investors, and by taking on risks that would otherwise disincentivize private flows of adaptation finance.
  - **Private finance for adaptation, however, also remains** essential, given the nature, scale and related costs of adaptation.
- Adaptation finance **can foster better understanding of the alignment of adaptation investments with country priorities** and it will help gauge the accountability of developed countries given their **commitments under the UNFCCC to provide adaptation finance.**
- It is also important as **benefits of investing in adaptation often outweigh the costs**.
  - Global Commission on Adaptation estimated that a $1.8 trillion investment in the areas of early warning systems, climate-resilient infrastructure, improved dryland agriculture, global mangrove protection, and resilient water resources could generate $7.1 trillion of benefits.

- It is defined as the **difference between actually implemented adaptation and a societal set goal,** determined largely by preferences related to tolerated climate change impacts, and reflecting resource limitations and competing priorities.
  - Adaptation is the **process of reducing countries' and communities' vulnerability to climate change** by increasing their ability to absorb impacts and remain resilient.
- **Adaptation is a key pillar of the Paris Agreement.** The Agreement requires all of its signatories to plan and implement adaptation measures through national adaptation plans, studies, monitoring of climate change effects and investment in a green future.

2020 report provides assessment of global progress on adaptation in three areas:

Planning	• **Adaptation action is now widely embedded in policy planning across the world**
	○ 72% of countries have adopted **at least one national-level adaptation planning instrument.**
	○ Most developing countries are preparing National Adaptation Plans, a key mechanism to strengthen the focus on adaptation.
	○ **Around half of countries' planning documents address risks comprehensively**, include relevant stakeholders and have dedicated planning processes in place.
Finance	• **Despite an increase in finance available for adaptation, the adaptation finance gap is not closing.**
	○ **International public adaptation finance is slowly rising,** but there is not enough data to identify trends in domestic public or private finance.
	○ Annual **adaptation costs in developing countries alone are estimated at USD 70 billion currently.** This figure is expected to reach USD 140-300 billion in 2030 and USD 280-500 billion in 2050.
	✓ Adaptation cost is **the costs of planning, preparing for, facilitating, and implementing adaptation measures,** including transaction cost.
	○ **Multilateral support for adaptation increased** between 2013 and 2017. In contrast, bilateral adaptation support increased slowly over the same period.
Implemen-tation	• **Implementation of adaptation actions is growing, but there is yet limited evidence of climate risk reduction.**
	○ Since 2006, **close to 400 adaptation projects** financed by multilateral funds serving the Paris Agreement **have been undertaken in developing countries,** half of which started after 2015.
	○ The Green Climate Fund, Least-Developed Country Fund and Adaptation Fund have together **reached more than 20 million direct and indirect beneficiaries** and trained more than 500,000 people on climate resilience measures.

	o More than half of the adaptation projects supported since 2015 are being **implemented in Least Developed Countries (LDCs)** and almost 15% in Small Island Developing States. o The majority focus on the most **climate sensitive sectors, agriculture and water, with drought, rainfall variability, flooding and coastal impacts** among the most commonly addressed climate hazards. • **Further scaling up of the levels of implementation is needed** to avoid falling behind with managing climate risks, particularly in developing countries. o Enhancing adaptive capacity and resilience to climate impacts – for example through capacity building, empowerment, good governance and early warning systems – can markedly reduce vulnerability to climate hazards

Report also highlighted COVID-19's impact on adaptation process

- COVID-19 pandemic is expected to hit the **ability of countries to plan for, finance and implement adaptation actions,** disproportionately affecting the most vulnerable countries and population group.
  - **In the short term the need to manage the direct public health impacts** of the virus and its subsequent economic fallout **has seen adaptation fall down the political agenda.**
  - **In the longer term,** the socio-economic consequences of the pandemic will likely put additional pressures on public finances and might change **national and donor priorities in support of climate action**.
- COVID-19 stimulus packages **could lead to a more climate resilient and low-emission recovery** if implemented well, but packages announced to date are largely missing the opportunity.
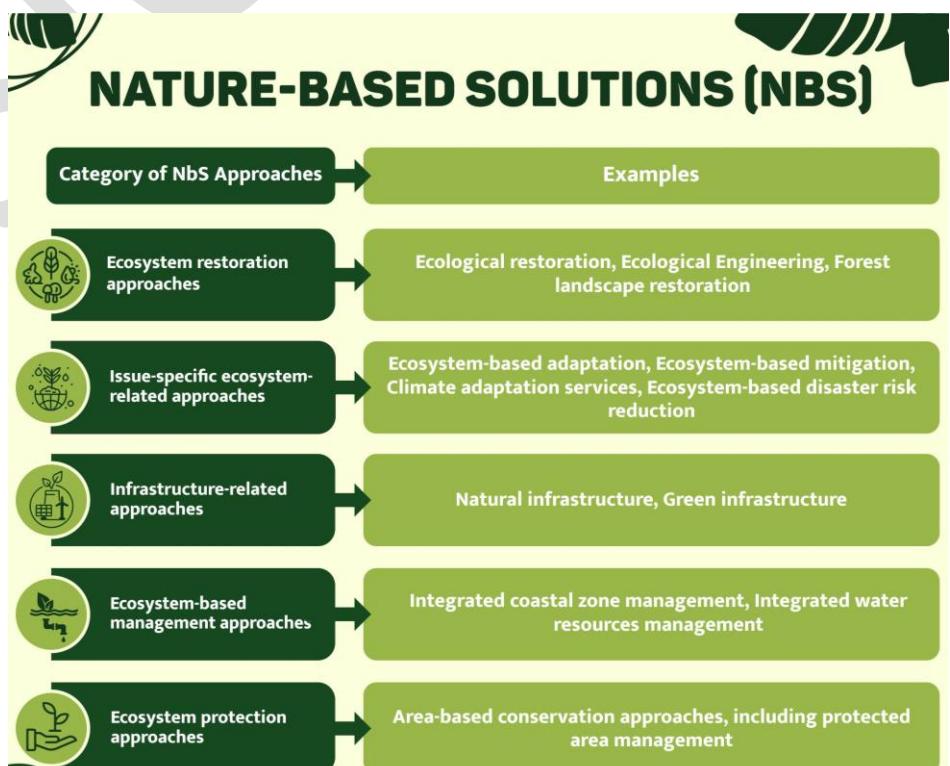
Some of the suggestions provided in the report that can make contributions to climate change adaptation

- Significant **scaling up and incentivization for both public and private adaptation finance** is required to narrow the gap.
- New tools such as **sustainability investment criteria, climate-related disclosure principles and mainstreaming of climate risks into investment decisions** can stimulate investments in climate resilience.
- **Reducing greenhouse gas emissions** will reduce the impacts and costs associated with climate change.
  - Achieving the 2°C target of the Paris Agreement could limit losses in annual growth to up to 1.6 per cent, compared to 2.2 per cent for the 3°C trajectory.
- Report places a **special focus on Nature-based Solutions** as low-cost options that reduce climate risks, restore and protect biodiversity and bring benefits for communities and economies.

5.1.1. NATURE-BASED SOLUTIONS (NBS)

About Nature-based Solutions (NbS)

- NbS are **actions to protect, sustainably manage and restore natural or modified ecosystems** that address societal challenges effectively and adaptively, simultaneously providing human wellbeing and biodiversity benefit.
- NbS are designed **to address major societal challenges, such as food security, climate change, water security, human health, disaster risk, social and economic development**

NATURE-BASED SOLUTIONS (NBS)

Category of NbS Approaches	Examples
Ecosystem restoration approaches	Ecological restoration, Ecological Engineering, Forest landscape restoration
Issue-specific ecosystem-related approaches	Ecosystem-based adaptation, Ecosystem-based mitigation, Climate adaptation services, Ecosystem-based disaster risk reduction
Infrastructure-related approaches	Natural infrastructure, Green infrastructure
Ecosystem-based management approaches	Integrated coastal zone management, Integrated water resources management
Ecosystem protection approaches	Area-based conservation approaches, including protected area management

o In adaptation, NbS are mainly used to address coastal hazards, intense precipitation, heat and drought.
- **As per IUCN, NbS:**
  o **Embrace nature conservation** norms.
  o **Can be implemented alone or in an integrated manner** with other solutions to the societal challenges (e.g. technological and engineering solutions).
  o Are **determined by site-specific natural and cultural contexts** that include traditional, local and scientific knowledge.
  o **Produce societal benefits in a fair and equitable way,** in a manner that promotes transparency and broad participation.
  o **Maintain biological and cultural diversity** and the ability of ecosystems to evolve over time.
  o Are applied at a landscape scale.
  o Are an **integral part of the overall design of policies, and measures or actions,** to address a specific challenge.
- Analysis of investments by four major climate and development funds (the Global Environment Facility, the Green Climate Fund, the Adaptation Fund and the International Climate Initiative) has also suggested that **support for green and hybrid adaptation solutions has risen considerably over past two decades.**
- **More than half of the countries, including over 90% of LDCs, refer to protecting nature as an important motivation for adaptation planning and have added elements of NbS** to the adaptation components of their Nationally Determined Contributions under the Paris Agreement.
- **UNDP in 2020 Human Development Report also called for investment in Nature-Based Solutions.**
- At least 50% of National Biodiversity Strategies and Action

How NbS can help in adapting to various hazards?

Hazard	NbS for adaptation	Potential additional benefits
Coastal hazards • Sea level rise • Storm surge • Coastal erosion	• Mangrove protection and restoration to anchor sediments and dissipate wave energy • Management and restoration of coastal marshes and/or dunes to dissipate wave energy and/or complement engineered protection • Coral reef management and restoration to attenuate wave energy	• Improved fish stocks • Biodiversity conservation • Carbon sequestration and storage • Sediment accretion • Tourism and recreation and associated employment
Intense precipitation • Flood • Soil erosion • Landslide	• Management and restoration of watershed vegetation to enhance infiltration, reduce run-off and peak flows, and stabilize slopes • Agroforestry to enhance canopy interception of rainfall and rainwater infiltration and reduce soil exposure, thereby reducing run-off and erosion • Urban watercourse restoration, and 're-naturing' to reduce assets at risk and secure riverbanks • Maintenance and restoration of urban greenspaces to improve rainwater infiltration and reduce run-off • Management and restoration of wetlands to store floodwater or slow its release and filter sediments	• Increased availability of wild-sourced food and other products • Pollination services • Carbon sequestration and storage • Improved soil fertility • Biodiversity conservation • Improved water quality • Improved physical and mental health among urban populations
Drought	• Management and restoration of watershed vegetation to enhance infiltration, recharge groundwater stores and maintain surface water flows • Establishment of 'Green Belts' to increase water availability, improve soil quality, provide shade and windbreaks	• Increased availability of wild-sourced food and other products • Pollination services • Carbon sequestration and storage • Improved soil fertility • Biodiversity conservation
Rising temperature • Heat stress • Urban heat islands • Wildfire	• Agroforestry to enhance canopy cover and provide shade • Rehabilitation and restoration of rangelands to repair ecological processes and enhance fire resistance • Creation of urban green spaces to increase vegetative canopies, which provide shade and evaporative cooling	• Carbon sequestration and storage • Improved soil fertility • Biodiversity conservation • Improved physical and mental health among urban populations

Plans, which countries develop under UN Convention on Biological Diversity, emphasize **the importance of NbS in addressing vulnerability of ecosystems.**

5.2. NATURAL CAPITAL ACCOUNTING AND VALUATION OF THE ECOSYSTEM SERVICES (NCAVES)

Why in News?

Recently, NCAVES India Forum 2021 was organised by the Ministry of Statistics and Programme Implementation.

About NCAVES India Forum

- The NCAVES India Forum was organized in collaboration with **United Nations Statistics Division (UNSD), European Union and UN Environment.**
- The objectives of the National Forum are:
  - o To present India's achievements in the domain of Natural Capital Accounting (NCA);
  - o To prioritize the emerging opportunities for NCA in India;
  - o To familiarize stakeholders with the work undertaken by the different international agencies in the area of NCA; and
  - o To provide a platform to selected Research Institutions to present their research conducted in the valuation of ecosystem service.

What is meant by Natural Capital Accounting (NCA)/Ecosystem Accounting?

- NCA is a tool that can help **measure the full extent of a country's natural capital**. It also provides a perspective on the **link between the economy, ecology and environment**.
  - o Natural capital includes **individual environmental assets** or resources, both biotic and abiotic (such as water, minerals, energy, timber and fish), as well as **ecosystem assets** (e.g. forests and wetlands), **biodiversity** and **ecosystem services** (e.g. air and water filtration and purification, flood protection, carbon storage, pollination of crops and habitats for wildlife).
- NCA uses an accounting framework to provide a systematic way to measure and report on stocks and flows of natural capital.
- NCA establishes the links between an ecosystem and the economy, which can be presented in both **physical and monetary terms**, through different types of ecosystem accounts -

> **About Project Natural Capital Accounting and Valuation of Ecosystem Services (NCAVES)**
> - In 2017, the United Nations Statistics Division (UNSD), the United Nations Environment Programme (UNEP), the Secretariat of the Convention on Biological Diversity (CBD) and the European Union (EU) launched the NCAVES Project.
> - This project is funded by the EU through its Partnership Instrument and aims to assist the **five participating partner countries**, namely Brazil, China, **India,** Mexico and South Africa, to advance the knowledge agenda on environmental-economic accounting, and in particular **ecosystem accounting**.
> - In India, the NCAVES project is being implemented by the **MoSPI** in close collaboration with the Ministry of Environment, Forest and Climate Change (MoEF&CC) and the National Remote Sensing Centre (NRSC).
> - Achievements of MoSPI under the project include-
>   - o **Publication of "EnviStats India",** on an annual basis since 2018, which is a compilation of the Environment Accounts as per the **UN-SEEA framework.**
>   - o **Development of the India-EVL Tool** which is essentially a look-up tool giving a snapshot of the values of various ecosystem services in the different States of the country.
> - Recently, MoSPI also released **'Ecosystem Accounts for India - Report of the NCAVES Project'**, which provides an overview of work undertaken in India as part of the NCAVES project.

  - o **Ecosystem extent account**: It organizes information on the extent of different ecosystem types (e.g. forests, wetlands, agricultural areas and marine areas) within a country in terms of area.
  - o **Ecosystem condition account**: It measures the overall quality of an ecosystem asset and captures, in a set of key indicators such as soil nutrient, water quality etc., the **state or functioning of the ecosystem** in relation to both its naturalness and its potential to supply ecosystem services.
  - o **Ecosystem services account**: It measures the **supply of ecosystem services** as well as their corresponding users and beneficiaries, classified by groupings of economic units such as provisioning of crop, timber, Non-timber forest products, nature-based tourism etc.
  - o **Monetary asset account**: It records the monetary value of opening and closing stocks of all ecosystem assets.

- o **Thematic accounts**: This set of accounts, which cover accounts for land, water, carbon and biodiversity, are stand-alone accounts on topics that are not only important for policy analysis but are also of direct relevance in the compilation of ecosystem accounts.

Importance of Natural Capital Accounting (NCA)

- **Overcoming Limitations of GDP**: Natural capital is essential for economic growth, employment, and, ultimately, prosperity. But Gross Domestic Product (GDP) only looks at economic performance and has a limited representation of the natural capital that underlies this income.
  - o According to some estimates, the environment provides about $72tn a year of "free" support to the global economy.
- **Effective management of Natural resources**: By providing a perspective on the link between the economy, ecology and environment, NCA can subsequently help to better manage natural resources that contribute to economic development.
- **Promote natural capital business model**: It is a way of doing business that recognizes the value of natural and human resources and life-supporting ecological services. NCA highlights the importance of conservation of natural capital for protecting businesses.
  - o For instance, the agriculture sector needs pollinators, like bees, to grow crops and any threat to pollinator population can have escalating economic impacts on the sector.
- **Monitoring progress of global initiatives**: NCA can be applied to monitor progress on a range of critical global initiatives such as Sustainable Development Goals and the Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC).
- **Facilitates better and informed decision-making process**: Measuring and valuing the environment leads to better decision-making for development of an economy. It helps policy makers in-
  - o **Checking environmental degradation** by monitoring the status of ecosystem assets over time (both their extent and condition) which give an indication of the change in their status and quantifying long term environmental consequences and externalities of economic activity.
  - o **Estimating financial needs** by evaluating how the economy responds in terms of expenditure on environmental protection.
  - o **Identifying policy priorities**: The application of these accounts helps to focus the resources on the hotspots that are majorly affected and in better allocation of resources. For instance, water quality accounts can help in identifying areas that require resources for artificial ground water recharging in the immediate future.
  - o **Formulating policies that have an impact on natural capital** such as agriculture and transport.
- **Poverty reduction**: NCA provides systematic information about the assets that poor people and low-income countries depend on for income, livelihoods, health, security and resilience.
  - o Nearly three quarters of the world's poorest citizens are directly dependent on natural capital: 50 per cent are smallholder farmers, 20 per cent are rural labourers, and 10 per cent depend on herding, fishing and forestry.
- **Developing future strategies**: Developing a set of statistics on biodiversity hotspots and flora and fauna species accounts can help in setting up **Post-2020 Global Biodiversity Framework for the Convention on Biological Diversity**.

> **System of Environmental-Economic Accounting (SEEA)**
> - The SEEA is a statistical system that brings together economic and environmental information into a common framework to measure the **condition of the environment**, the **contribution of the environment to the economy** and the **impact of the economy on the environment**.
> - It consists of three parts:
>   - o **SEEA Central Framework (SEEA CF):** It was adopted by the UN Statistical Commission as the first international standard for environmental-economic accounting in 2012. It looks at "individual environmental assets", such as water resources, energy resources etc. and how those assets move between the environment and the economy.
>   - o **SEEA Ecosystem Accounting (SEEA EA)**: It offers a synthesis of current knowledge in ecosystem accounting. It takes the perspective of ecosystems and considers how individual environmental assets interact as part of natural processes within a given spatial area.
>   - o **SEEA Applications and Extensions**: It illustrates to compilers and users of SEEA Central Framework based accounts how the information can be used in decision-making, policy review and formulation, analysis and research.

- **Climate change mitigation**: In the face of climate change and variability, the various indicators of the human footprint on land, such as the use of land, needs to be assessed on a regular basis for scientific and effective land use planning, management and ecological restoration.
- **Generates awareness about environmental preservation**: Accounting for ecosystem services can help create public awareness about environmental values.
  - For instance, the preservation of the environment is one of the main drivers of **nature based tourism**. Accounting its economic value helps promote **sustainable tourism development** which takes into account current and future economic, social and environmental impacts, while addressing the needs of visitors, the industry, the host communities and most importantly, the environment.

5.3. HUMAN-WILDLIFE CONFLICT

Why in news?

With 88 human deaths, Maharashtra witnessed the worst-ever year with respect to HWC in 2020. This pattern is consistent with majority of states, highlighting increasing HWC.

What is the nature and extent of Human-Wildlife conflict prevailing in India?
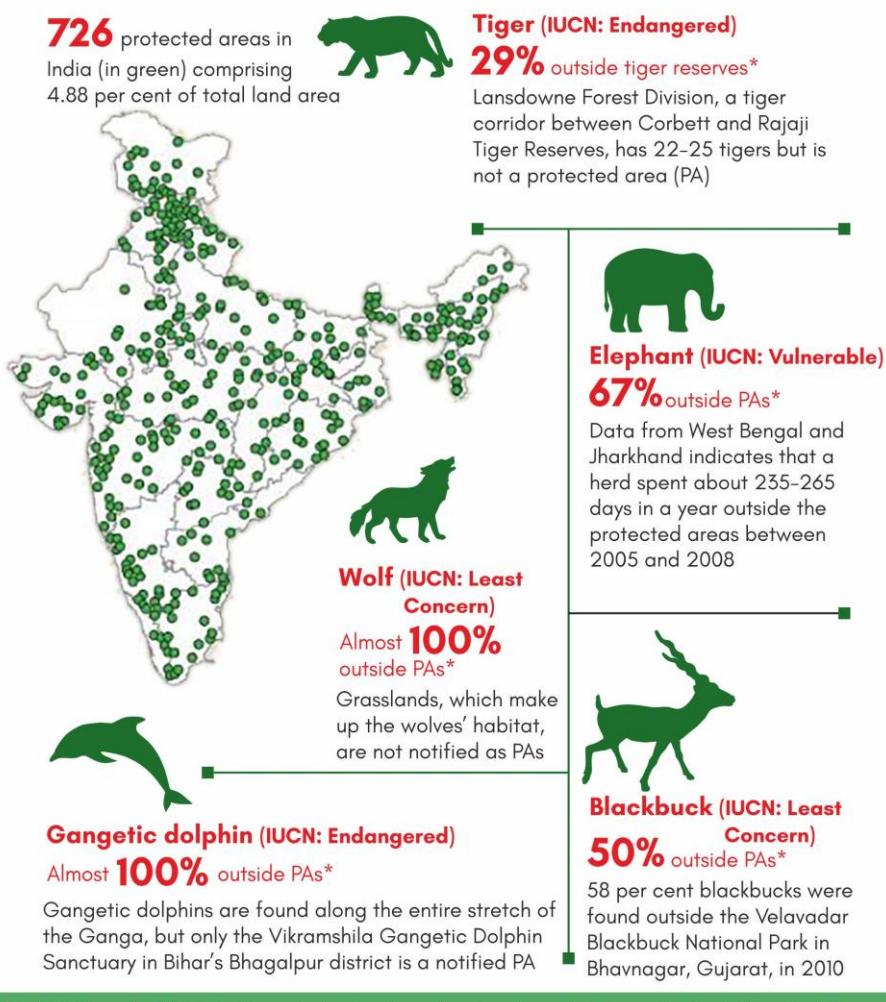
- In India, human-animal conflict is seen across the country in a variety of forms, including **monkey menace in the urban centres**, **crop raiding** by ungulates and wild pigs, **depredation by elephants**, cattle lifting and **threats and injury by tigers, leopards and other wild animals**.
- Human-animal **conflict occurs both inside Protected Areas as well as outside Protected Areas**. The intensity of the conflict is generally more in areas outside Protected Area network than inside.
- These assertions are further validated through following data:
  - In the Monsoon session (2019), the Union Environment Ministry informed the Lok Sabha that **2398 people in India were killed by elephants while tigers claimed 224 lives in the last five years.**
  - **Over 100 elephants die due to human-related activities**, which include poaching for ivory or meat, poisoning, electrocution and collision with trains.

What are the reasons behind these conflicts?

- **Habitat loss and fragmentation**: It increases the chances of wild animals moving out of natural habitat and encountering cultivation and people. E.g. there exist clear evidence for conflict between Asian elephants and agriculture.

PROTECTED BUT NOT SAFE

Many Schedule-1 species, which are accorded the highest degree of protection under the law, are found outside notified protected areas

726 protected areas in India (in green) comprising 4.88 per cent of total land area

Tiger (IUCN: Endangered)
29% outside tiger reserves*
Lansdowne Forest Division, a tiger corridor between Corbett and Rajaji Tiger Reserves, has 22-25 tigers but is not a protected area (PA)

Elephant (IUCN: Vulnerable)
67% outside PAs*
Data from West Bengal and Jharkhand indicates that a herd spent about 235-265 days in a year outside the protected areas between 2005 and 2008

Wolf (IUCN: Least Concern)
Almost **100%** outside PAs*
Grasslands, which make up the wolves' habitat, are not notified as PAs

Gangetic dolphin (IUCN: Endangered)
Almost **100%** outside PAs*
Gangetic dolphins are found along the entire stretch of the Ganga, but only the Vikramshila Gangetic Dolphin Sanctuary in Bihar's Bhagalpur district is a notified PA

Blackbuck (IUCN: Least Concern)
50% outside PAs*
58 per cent blackbucks were found outside the Velavadar Blackbuck National Park in Bhavnagar, Gujarat, in 2010

*All-India figure, the list is indicative and not exhaustive as there is not enough data on animals outside protected areas

- **Increasing Population**: The substantial recovery of once dwindling populations of animals such as black buck, nilgai, tiger, leopard and elephant has also resulted in increased human-wildlife conflicts in the fringe areas of forests across the country.
- **Land Use Changes**: Land-use change outside forest areas, with irrigation from tube wells and canals aiding the cultivation of crops for longer time periods may also attract animals such as elephants. Highly productive crop fields that provide more palatable and nutritious forage also promote conflicts with herbivores.
- **Adverse climatic events such as droughts, floods** have indirectly forced animals move towards human habitations for food, water and shelter.
- **Adaptability to anthropogenic ecosystems**: Many wildlife species have adapted to the changing landscape through behavioural changes for crop raiding. This is true for elephants and certain commensal wildlife species such as black buck, nilgai, rhesus macaque of northern India, as well as the bonnet macaque of southern India.
  o Even non-commensal animals such as leopard have adapted to surviving in human-inhabited areas.
- **Wildlife species are also impacted by accidental deaths due to development in infrastructures**, such as railway lines, roads, electricity wires etc. For instance, recently, a group of seven elephants died of electrocution in Odisha.

What are the consequences of increasing Human-Wildlife conflict?

- **Growing antipathy towards animals:** The direct effect of increasing HWC is increased antipathy for animals and this further increases the conflict, thus creating a vicious cycle. This antipathy translates to increasing difficulties for forest departments and limited community engagement in forest management.
  o A corollary of increased apathy towards animals is public opinion tilting negatively with respect to conservation and associated activities.
- **Retaliation in extreme cases:** In several cases, extreme steps such as immediate culling of wild animals is resorted. For example, recently, a six-year old tigress Avni, accused of killing 13 human beings, was shot dead by a private hunter's son in the Pandharkawada region of Maharashtra.
- **Loss of life and property:** Alongside loss of lives and conflict related injuries in human habitations, the HWC many times leads to destruction of large agricultural habitations.
  o Also, the associated compensation provided by the Government to affected parties entails a large cost for the Government.

What are the initiatives taken by the Government?

Recently, the **Standing Committee of National Board of Wildlife (SC-NBWL)** approved the advisory for management of HWC in the country. Following can be cited as the key steps given by the advisory-

- **Empowering gram panchayats** in dealing with the problematic wild animals as per the section 11 (1) (b) of Wild Life (Protection) Act, 1972.
- **Utilising add-on coverage under the Pradhan Mantri Fasal Bima Yojna** for crop compensation against crop damage due to HWC. Also, payment of a portion of ex-gratia should be given as interim relief within 24 hours of the incident to the victim/family.
- **Augmenting fodder and water sources** within the forest areas.
- **Prescribing inter-departmental committees** at local/state level.
- **Adoption of early warning systems** and creation of barriers.
- **Dedicated circle wise Control Rooms** with toll free hotline numbers which could be operated 24X7.
- **Identification of hotspots and formulation and implementation of special plans** for improved stall-fed farm animal.
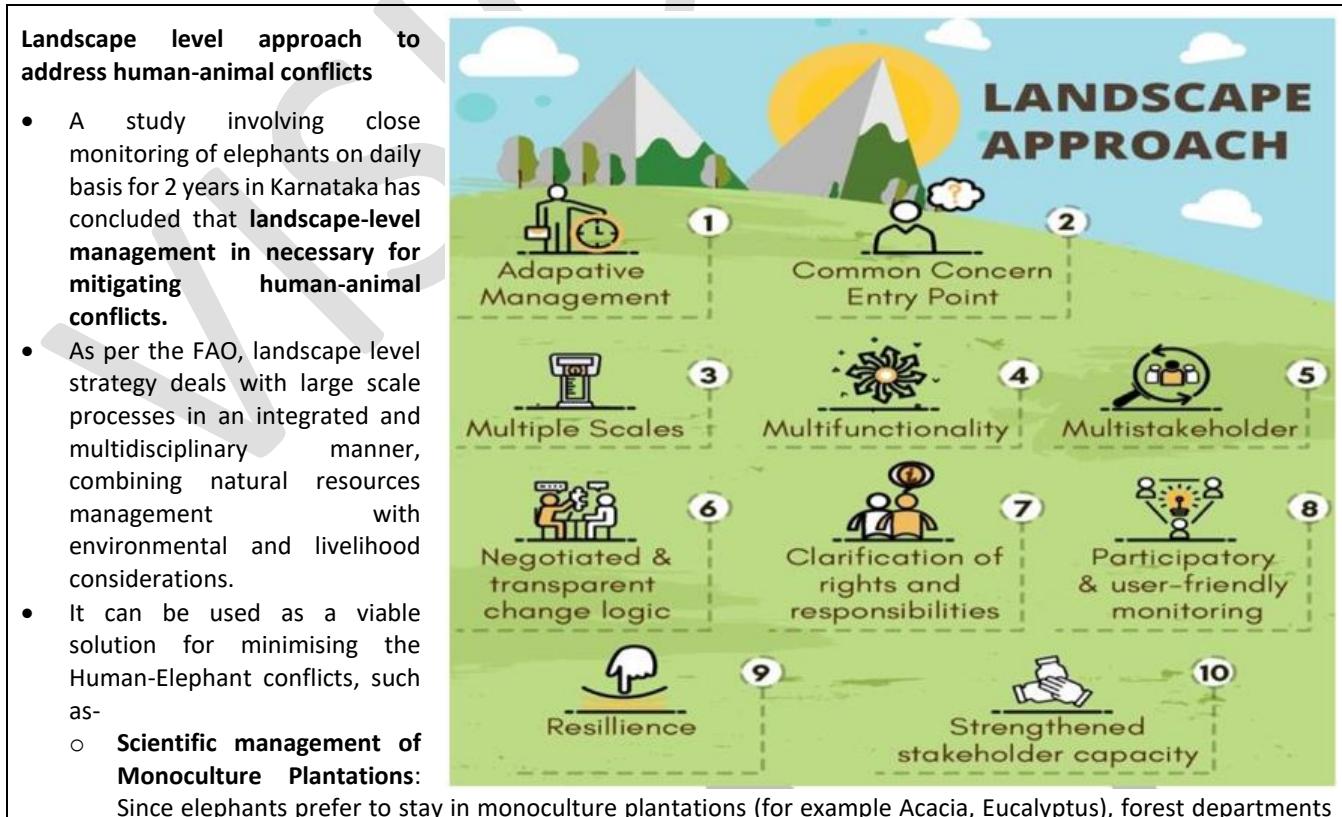
Other initiatives taken by the Government:

- **National Wildlife Action Plan (NWAP-3) (2017-2031)** prescribes guidelines to mitigate the human wildlife conflict.
  o These include creation of **national, regional and state level database for HWC**, **scientific management of wildlife populations** as well as **land use practices** and comprehensive, **species and region specific conflict-migration plans.**
  o It further talks about **encouraging community participation in the HWC mitigation** through extensive education and awareness programmes by well-trained and adequately equipped workforce.

✓ Some of the examples of successful community participation and co-existence include **Bishnoi tribe of Rajasthan, Soligas in the BRT Tiger Reserve and Baigas of the Kanha National Park.**
- o It provides for a **Centre of Excellence (CoE) on HWC mitigation,** under the aegis of MoEFCC, to address develop and implement long-term and short-term measures to reduce the adverse impacts of HWC.
- o **Draft National Forest Policy, 2018** also reasserts the objectives and guidelines of NWAP-3.
- **Provision for dealing with errant animals-**
  - o The Wildlife Protection Act, 1972 empowers the concerned authorities to deal with problematic **animals including declaring any protected species as vermin and to be culled.** E.g. monkeys in Himachal Pradesh and Nilgai and Wild Boar in Bihar were declared Vermin in recent times.
  - o **Mass sterilization drive** is conducted to control the faster population growth of monkeys and boars as seen in Himachal Pradesh.
- UP Government has given its in-principle approval to **bring man animal conflict under listed disasters in the State Disaster Response Fund** to ensure better coordination and relief during such incidents.
- The NGT has asked MoEFCC to consider **declaring all elephant corridors in India as Eco-sensitive zones.**
- **Indo-German Human Wildlife conflict mitigation project** with an objective to frame guidelines and SOPs so that humans and wildlife could co-exist.

Way Forward

- **Recognizing the key sources of conflict:** It is imperative to understand that HWC are largely a human-induced phenomenon combined with the specific behavioural ecology of animals, and external environmental factors.
- **Community centric management and conservation:** Any long-term conservation measures such as taking a landscape approach to integrate Protected Area management with outside lands are only possible through people's cooperation. Thus, all conflict mitigation measures should be developed on the basic premise of engagement of all primary stakeholders, especially local communities.
- **Improved Forest Governance and management:** 24×7 monitoring using technology, management of corridors, building up the frontline capacity, creating village teams for reporting wild animal presence, and, an inter-sectoral portfolio at the landscape level akin to the "master plan" envisaged for an eco-sensitive zone should all be employed for HWC mitigation.
- **Using alternative and unconventional ways** such as re-creating a fear barrier for monkeys and boars, one-shot contraception and keeping dead animals on jungle tracts for wild carnivores, bio-fencing using cactus etc.

Landscape level approach to address human-animal conflicts

- A study involving close monitoring of elephants on daily basis for 2 years in Karnataka has concluded that **landscape-level management in necessary for mitigating human-animal conflicts.**
- As per the FAO, landscape level strategy deals with large scale processes in an integrated and multidisciplinary manner, combining natural resources management with environmental and livelihood considerations.
- It can be used as a viable solution for minimising the Human-Elephant conflicts, such as-
  - o **Scientific management of Monoculture Plantations**: Since elephants prefer to stay in monoculture plantations (for example Acacia, Eucalyptus), forest departments

LANDSCAPE APPROACH

1. Adapative Management
2. Common Concern Entry Point
3. Multiple Scales
4. Multifunctionality
5. Multistakeholder
6. Negotiated & transparent change logic
7. Clarification of rights and responsibilities
8. Participatory & user-friendly monitoring
9. Resilience
10. Strengthened stakeholder capacity

should think strategically when to clear-fell these plantations. If these places are not available, elephants will start using agriculture habitats more frequently which may aggravate human- elephant conflict situation

- o **Regular Monitoring of land-use practices**: Proper planning needs to be done before making any change in the land –use practices in habitats such as coffee, agriculture or forest patches as it may have negative effects on elephant conservation or aggravate human- elephant conflict.
- o **Preserving Forest remnants and monoculture refuges**: These refuges are vital for elephants and helpful in containing conflicts as most of the forest is fragmented.

5.4. E-WASTE

Why in news?

As per report of Central Pollution Control Board (CPCB), India collected just 10% e-waste in 2018-19 and 3.5% in 2017-18 out of total generated waste.

About E-waste

- Electronic waste (e-waste), **refers to all items of electrical and electronic equipment (EEE)** and its parts that have been **discarded by its owner as waste without the intent of re-use**.
  - o EEE includes a wide range of products **with circuitry or electrical components with a power or battery supply**
  - o The biggest contributors to the level of e-waste at present are household appliances such as irons, vacuum cleaners, washing machines and fridges. But the rapidly-growing "Internet of things" - internet-connected gadgets - is expected to generate e-waste at a faster rate, as connectivity becomes embedded into everyday items.
- According to Global E-waste Monitor, in 2019, **approximately 53.6 million metric tons (Mt) of e-waste (excluding PV panels) was generated, or 7.3 kg per capita**.
  - o **Asia** generated the **highest quantity of e-waste (24.9 Mt),** followed by the **Americas (13.1 Mt) and Europe (12 Mt).**
  - o **India is the third largest electronic waste generator** in the world after China and the USA as per the Global E-waste Monitor 2020.

Issues with E waste

- **Hazardous to human health:** E-waste consists of toxic substances such as liquid crystal, lithium, mercury, nickel, polychlorinated biphenyls (PCBs), selenium, arsenic, cadmium, cobalt, copper, lead etc. These pollutants are not taken care of properly, or they are taken care of by an informal sector and recycled without properly protecting the workers.
- **Environmental effects of e-waste:** The toxic materials from electronic devices are released into bodies of water, groundwater, soil and air, affecting both land and sea animals.
  - o **Improper management of e-waste also contributes to global warming.** A total of 98 Mt of CO_2-equivalents were released

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E-Waste management in India

- Ministry of Environment, Forest and Climate Change (MoEF&CC) passed the first law **on e-waste management in 2011, based on Extended Producer Responsibility** wherein the **producer of EEE has the responsibility of managing such equipment after its 'end of life',**
  - o Under this EPR, **producer is also entrusted with the responsibility to finance and organize a system to meet the costs involved in complying with EPR.**
  - o However, it did not set collection targets
- Thereafter, the **E-Waste (Management) Rules, 2016** were enacted in supersession of the 2011 Rules.
  - o A manufacturer, dealer, refurbisher and Producer Responsibility Organization (PRO) were also brought under the ambit of these Rules.
    - ✓ PRO is a professional organization **that helps producers meet their EPR targets through various recyclers and dismantlers.**
- The E-Waste Management Rules, 2016 have been **amended by the Centre in 2018.**
  - o E-Waste (Management) Amendment Rules, 2018 objective **is to channelize the e-waste generated in the country towards authorized dismantlers and recyclers in order to further formalize the e-waste recycling sector.**
- **India's first E-waste clinic** is going to be set up in Bhopal that would enable segregation, processing and disposal of waste from both household and commercial units.

International Best practice: In October 2019, the EU adopted new Right to Repair standards, which means that from 2021 firms will have to make appliances longer-lasting, and will have to supply spare parts for machines for up to 10 years.

into the atmosphere from discarded fridges and air conditioners that were not managed in an environmentally sound manner.

- **Low recycling capacity:** Almost all e-wastes contain some form of recyclable material, including plastic, glass, and metals; however, due to improper disposal methods and techniques these materials cannot be retrieved for other purposes.
  - o Only 17.4% of the total e-waste was collected and recycled globally.
- **Dumping in Developing countries**: A large amount of E-waste from developed countries is dumped into developing countries impacting the environment the health of the people there.
  - o Even with International treaties such as **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes, illegal shipment and dumping of e-wastes continue to take place.**

Measures to Manage E waste

- **Formal collection of e waste** by designated organizations, producers, and/or the government via retailers, municipal collection points, and/or pick-up services.
- **Recycling e-waste:** Recycling e-waste enables us to recover various valuable metals and other materials from electronics, saving natural resources (energy), reducing pollution, conserving landfill space, and creating jobs.
  - o The value of raw materials in the global e-waste generated in 2019 is equal to approximately $57 billion USD.
- **E-waste Legislation:** Governments around the world are developing national e-waste policies and legislation that lay out plans or courses of action and indicate, in a non-binding manner, what can be achieved by a society, institution, or company.
  - o India passed the first law on e-waste management in 2011
- **E-waste data:** Understanding the quantities and flows of e-waste provides a basis for monitoring, controlling, and ultimately preventing illegal transportation, dumping, and improper treatment of e-waste
- **Create awareness:** on the environmental benefits of recycling among consumers.
  - o **Ministry of Electronics and Information Technology (MeitY)** has initiated an **e-waste awareness programme under Digital India,** to create awareness among the public about the hazards of e-waste recycling by the unorganised sector, and to educate them about alternate methods of disposing their e-waste.

> **About the Basel Convention**
> - The **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal** is a multilateral treaty aimed at suppressing environmentally and socially detrimental hazardous waste trading patterns.
>   - o It was adopted in 1989 and it came into force in 1992 and, to date, has been signed by 187 countries. **India became a party to the Basel Convention in 1992.**
> - Basel Convention **obliges its Parties to ensure that such wastes are managed and disposed of in an environmentally sound manner.**
>   - o E-waste, due to its constitution, often contains hazardous elements.

5.5. SOLAR ROOFTOP (SRT) SYSTEM
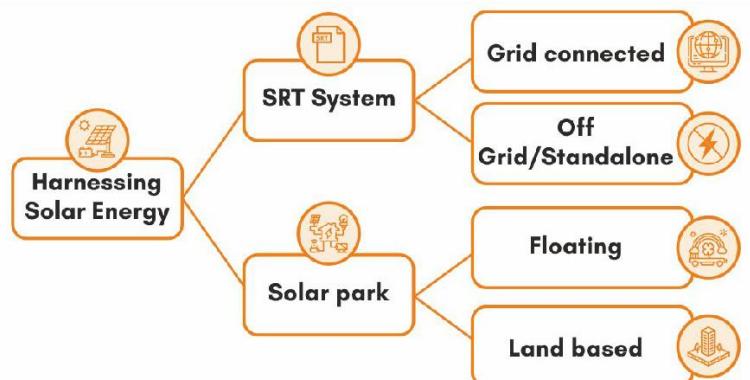
Why in news?

Recently, the government has issued advisory on **Grid Connected Rooftop Solar Programme (Phase-II)** as some vendors are charging more price than the rates decided by DISCOMs from domestic consumers.

About the Solar Rooftop (SRT) System

- In an SRT the **solar panels are installed in the roof of** any residential, commercial, institutional and industrial buildings to produce electricity.
- **SRT System can be of two types**
  - o **SRT System with storage facility:** The solar electricity is stored in the battery and can be utilized during night also when the sun is not available.

Harnessing Solar Energy

- o **Grid Connected SRT System:** In these systems the DC power generated from SPV panel is converted to AC power using power conditioning units. This AC power is utilized fully by powering captive loads and feeding excess power to the grid. In case, where solar power is not sufficient due to cloud cover etc., the captive loads are served by drawing power from the grid
- **National Solar Mission** has set a target to achieve 100 GW of installed capacity of solar energy by the end of 2022. Out of this, **40 GW is the target set for the SRT System.**
- At present the **SRT systems account only for 12% of solar power generation.**
- **The installed capacity of the SRT system** augmented from 117 MW in 2013 **to 5.9GW in 2020.**

Grid Connected Rooftop Solar Programme (Phase-II)

- **The Ministry of New and Renewable Energy** launched this programme and it is being implemented by DISCOMs (Distribution companies).
- The objective of the programme is **to achieve a cumulative capacity of 40 GW by the year 2022** through Grid Connected SRT System.
- **DISCOMs are compensated for the additional expenditure** they incur on implementing the programme.
- **The programme has following two components**
  - o **Component A:** Under the Phase II, the Central Financial Assistance (CFA) for the residential users has been restructured (in 2019) in following ways
    - ✓ 40% of the benchmark cost of the SRT system with capacity up to 3 kW would be provided as CFA.
    - ✓ 20% of the benchmark cost of the SRT system with a capacity from 3 kW to 10 kW would be provided as CFA.
    - ✓ 20% for up to 10 kW capacities per house and for a cumulative capacity of up to 500 kW CFA for Group Housing Societies (GHS) and Residents Welfare Association (RWA)**.**
    - ✓ **The CFA is not available for other categories** i.e., institutional, educational, social, government, commercial, industrial, etc.
  - o **Component B:** Performance based incentives will be provided to DISCOMs (for initial capacity addition of 18 GW) based on SRT capacity achieved in a financial year over and above the base capacity.
- **Programme is expected to**
  - o **Reduce CO2 emission** of about 45.6 tonnes per year.
  - o Generate employment **opportunity equivalent to 9.39 lakh job years** for skilled and unskilled workers

Significance of enhancing share of the SRT System in total solar energy installed capacity

- **Increasing the accessibility to electricity**: Only 87% of Households have access to grid-connect electricity. 13% Indian households are either using non-grid sources for power or "do not use any electricity at all." SRT systems could be game changers for these households.
- **More efficient:** There is no transmission loss in utilization of electricity generated through the SRT system. Further, maintenance cost of SRT System is also less as compared to the maintenance of solar parks. Since solar parks are mostly located in arid and semi-arid ecosystems, more water is needed to keep them dust free.
- **No additional space required for installation:** One of the biggest advantages of rooftop solar panels is that they can be installed on any type of roof. So, people don't need to vacate a land or invest in buying additional land.
- **Environment friendly:** SRT system could be used as a clean back up for compensating power outages in urban areas.

Hurdles that India face in enhancing the share of the SRT system in installed capacity of solar energy

India has achieved only 20% of the set target of 40GW by 2022. And of late the growth has slowed down. Covid-19 has also taken a toll on the adoption of the SRT system. In Jun 2020 a 19% dip was seen in installation capacity as compared to growth in previous year. Factors accounting for this are:

- **High cost of installation:** Installation of the SRT system is capital intensive.
- **Lack of awareness:** Common people are either not aware of Govt subsidies or find the process of availing it too cumbersome.
- **DISCOMSs disincentives SRT in commercial enterprise** as these enterprises pay higher tariffs (against residential consumers) for the electricity supply from the grid. Commercial enterprises who want to install SRT System are burdened with additional charges for this.

- **Import dependency:**
  - **India lacks a manufacturing base of solar PV** as about 90% India's soar module requirement is fulfilled by imports and a major proportion of it comes from China. Such products although not only have low cost but are also considered to be substandard. They make the SRT system inefficient and increase the cost of maintenance.
  - Indigenous industries are grappling with challenges **related to duty inversion** (zero duty on fully made modules but high duties on raw materials).
- **Lack of innovation and technology development:** India has about 10 GW of operational solar module manufacturing capacity. There are few big indigenous manufacturing units. However, none of the indigenous companies have been able to invest in expansion or Research and Development (R&D).

Steps needed to be taken to increase the share of SRT System

Related information
Step taken by the Centre to promote the SRT system in the country
- In 2017, Centre has brought **a concept note on SRISTI** (Sustainable Rooftop Implementation for Solar Transfiguration of India).
- **SPIN web portal:** It is a National Web Portal deployed by the MNRE to assist in the implementation of Grid Connected Rooftop Solar Programme.
- **State Rooftop Solar Attractiveness Index–SARAL:** This index evaluates and ranks all the states according to their performance, growth, level of maturity, policy framework, and implementation environment in the SRT sector.
o It has been **designed by MNRE and its partners.**
- **Geo-tagging of RTS project**, in coordination with the Indian Space Research organization (ISRO), for traceability and transparency
- **Persuaded the states to notify the net/gross metering** regulations for the SRT projects.
- **Suryamitra program** is being implemented for creation of a qualified technical workforce
- **Concessional loans** from World Bank and Asian Development Bank (ADB) **to the State Bank of India and the Punjab National Bank for disbursal of loans to industrial and commercial sectors**, where CFA/incentive is not being provided.
- Various steps are taken for **implementation of the SRT system projects in the government sector.**

- **Enhancing consumer awareness:** Concerted effort would be needed for raising consumer awareness about the benefits of the SRT systems and PV technology as well as about the government schemes that provide financial support.
- **Making policy people centric:** Processes for approving net metering applications and disbursing subsidies should be efficient and hassle free to motivate consumers to invest in this new technology. Capacity building of retail bank branches is needed for ensuring timely disbursal of loans.
  - **Net metering is a billing mechanism for grid connected SRT system** that credits solar energy system owners for the electricity they add to the grid.
- **Enhancing capacity in the entire solar value chain:** Fragmentation is a major hurdle for the growth of Solar PV manufacturing units as it results in higher cost of production. Steps need to be taken to address the challenges of lack of integrated set up, economies of scale & availability of modern technology. One way to address this issue could be closer industry-government cooperation for focused, collaborative and goals driven R&D to help India attain technology leadership in this sector.
- **Skill development:** It will meet the demand of a skilled workforce for installation, maintenance and repairs which are expected to grow with the growth of the sector.

Conclusion

India's renewable energy generation capacity is the **fourth largest in the world (currently 136 GW which is 36% of total capacity).** By 2022, the **share of renewable capacity will increase to 220 GW**. India's demand for solar energy is creating a market opportunity worth $20 billion annually. Demand for **locally-produced panels will also grow to 36 GW over three years**. Therefore, it is need of the hour to streamline all the schemes for encouraging adoption as well as sustainable growth of solar module and solar PV manufacturing units.

Refer to November 2020 Monthly CA for more details on Solar Manufacturing In India.

5.6. ANTARCTIC OZONE HOLE

Why in News?

According to World Meteorological Organization (WMO), Antarctic ozone hole — one of the deepest, largest in the last 40 years — has closed.

More on News

- The formation of **ozone hole in the Antarctic has been an annual occurrence** and has been recorded for the last 40 years.
- This year, ozone hole over Antarctic **had rapidly grown from mid-August and peaked in early October 2020.**
- This time around, **expansion of the hole was driven by a strong, stable and cold polar vortex**, which kept the temperature of the ozone layer over Antarctica consistently cold.
- This prevented the mixing of ozone depleted air above Antarctica with ozone rich air from higher latitudes.
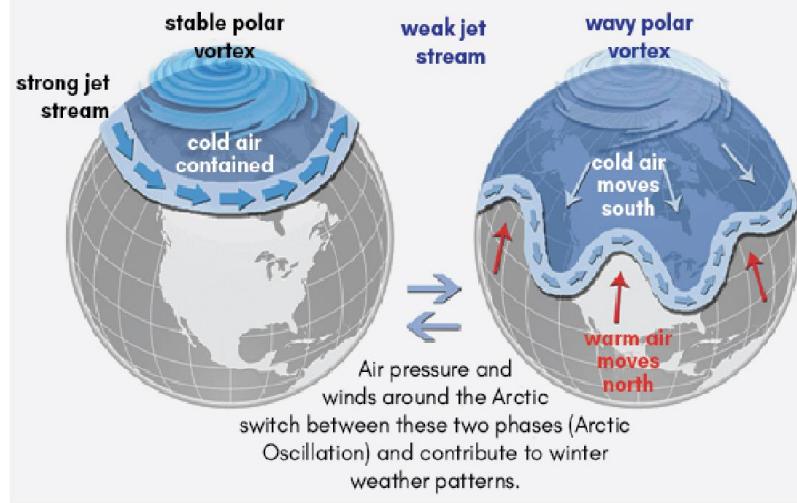
About ozone hole

- Ozone layer is the common term for the **high concentration of ozone that is found in the stratosphere** (layer of the atmosphere between around 10-50 km altitude).
  - Atmospheric ozone absorbs ultraviolet (UV) radiation from the sun, particularly harmful UVB-type rays.
- Ozone hole refers to a **region in stratosphere where concentration of ozone becomes extremely low.**
  - Such holes are **spotted over both the Poles**.
  - Ozone depletions at North pole are much smaller in size, owing to warmer temperatures in North Pole than the South Pole.
- Ozone depletion is **directly related to the formation of Polar vortex (in stratosphere)**.
  - During winter, temperatures in the vortex usually **drop below 195 K (-78°C), and polar stratospheric clouds (PSCs) form**.
  - PSCs provide surface for ozone depleting substances such as chlorine containing CFCs, HCFCs, bromine containing halons etc. to reach stratosphere.

What is polar vortex?

- A polar vortex is a **low pressure area of wide expanse of swirling cold air in polar regions.** It always exists near the poles, weakens in summer and strengthens in winter.
  - The term "vortex" refers to the counter-clockwise flow of air that helps keep the colder air near the Poles.
- **A stronger polar vortex tends to fence in the cold** (by bottling up all the cold air at poles), while a weaker one allows cold outbursts to visit the mid-latitudes.
- **On occasions, this vortex can become disturbed, more so in the Northern Hemisphere,** because of the different arrangement of land and sea in the two hemispheres.
  - **In the northern hemisphere, there are more regions of land-sea temperature contrast**, which can set up atmospheric waves that can disturb the vortex.
  - In the southern hemisphere, there is much more sea, which is continuous around Antarctica.

Phases of Polar Vortex

Air pressure and winds around the Arctic switch between these two phases (Arctic Oscillation) and contribute to winter weather patterns.

- At the poles, **ODSs attach to ice particles in PSCs**. When the sun comes out again in the polar spring, the ice particles melt, releasing the ozone-depleting molecules from the ice particle surfaces.
- Once released, these ozone-destroying molecules harm and breaking apart the molecular bonds in UV radiation-absorbing ozone.
- During the **Southern Hemisphere spring season (August - October) the ozone hole over the Antarctic increases in size,** reaching a maximum between mid-September and mid-October.

- **Ozone depletion slows when temperatures in stratosphere start to rise**, in late Southern Hemisphere spring, the polar vortex weakens and breaks down.
  o This is because in warmer temperatures fewer PSCs form and they don't persist as long, limiting the ozone-depletion process.
- **By the end of December ozone levels return to normal.**

Effects of ozone depletion for humans and the environment
- Ozone layer depletion causes **increased UV radiation levels at the Earth's surface**, which is damaging to human health. Negative effects include
  o increases in certain types of **skin cancers, eye cataracts and immune deficiency disorders**.
  o UV radiation also affects terrestrial and aquatic ecosystems, **altering growth, food chains and biochemical cycles**.
  o Aquatic life just below water's surface is particularly adversely affected by high UV levels.
  o UV rays also affect plant growth, **reducing agricultural productivity**.

International Treaties and Cooperation about the Protection of the Stratospheric Ozone Layer
- Adopted in 1985, T**he Vienna Convention for the Protection of the Ozone Layer** is the precursor to the Montreal Protocol. It is often called a framework convention, because it served as a framework for efforts to protect the globe's ozone layer.
- **Montreal Protocol (1987) on Substances that Deplete the Ozone Layer** regulates production and consumption of nearly 100 ozone depleting substances (ODS).
- **The Kigali Amendment (2016) to Montreal Protocol** extended controls to phase down the production and consumption of hydrofluorocarbons (HFCs) because these substances are powerful greenhouse gases.
- **United Nations Environment Programme (UNEP) Ozone Secretariat** to implement the Montreal protocol.

5.7. MARINE HEAT WAVES

Why in news?

A new study has pointed that Marine heat waves may become more intense in future.

More on news

- As per the study, the layer of the ocean which **blankets the top 20 to 200 metres is becoming thinner each year.**
- The thicker this layer, **the more it can act as a buffer to shield the waters below** from incoming hot air.
- Thinning of this layer will cause **loss of this buffer which may lead to more frequent and destructive warming events** such as marine heat waves.

What are marine heatwaves?

- Heatwaves that occur in the ocean are known as **marine heat waves (MHWs).**
- A MHWs is defined when **seawater temperatures exceed a seasonally-varying threshold for at least 5 consecutive days.** Successive heatwaves with gaps of 2 days or less are considered part of the same event.
- MHWs occur **when ocean temperatures are extremely warm** for an extended period of time which in turn have **significant impacts on marine ecosystems** and industries.
- Marine heatwaves can **occur in summer or winter**.

Ocean Warming and Marine Heat Waves
- The **oceans are warming** at an unprecedented rate. Sea surface temperatures have increased at a rate of nearly 0.6°C per century since 1880 (IPCC AR5).
- This warming in turn **increases the likelihood of marine heatwaves**.
- While marine ecosystems have evolved within a certain coping range, and can adapt to conditions slightly outside that range, **marine heatwaves manifest as extreme events that lead to ecosystem vulnerabilities.**
- In a warmer climate we are more likely to experience these **vulnerability-causing extremes**.

Causes of Marine Heat Waves

- **Ocean currents** which can build up areas of warm water and air-sea heat flux
- Warming through ocean surface **from atmosphere.**

- **Winds** can enhance or suppress the warming in a marine heatwave, and climate models like El Niño can change the likelihood of events occurring in certain regions.
- Ocean warming. (see box)

Impacts of Marine Heat Waves

- **Impact on biodiversity and ecosystem**
  - o **Biodiversity loss**: In 2016, marine heatwaves across northern Australia led to **severe bleaching of the Great Barrier Reef** and have been speculated to be linked to **mangrove die-offs** in the Gulf of Carpentaria.
  - o **Affects ecosystem structure**, by supporting certain species and suppressing others. E.g., after marine heatwave in Western Australia the fish communities had a **much more "tropical" nature.**
  - o **Rogue animals can also find their way well outside their normal range**, by changing the habitat ranges of certain species.
- **Economic Impact:** Losses through impacts on **fisheries and aquaculture and ecotourism industries.** MHW led to outbreaks of Pacific oyster mortality syndrome (which affected the pacific oyster aquaculture industry).

6. SOCIAL ISSUES

6.1. WOMEN IN INDIAN AGRICULTURE

Why in news?

The recent farmers' protests have cast a spotlight on a traditionally overlooked group of female farmers.

Women in Indian Agriculture

- **Role:** Women in Indian agriculture perform numerous labour intensive jobs such as weeding, picking, separation of seeds from fibre, keeping of livestock and its other associated activities like milking, etc. Mainly rural women are engaged in agricultural activities in three different ways:
  - Paid Labourers.
  - Cultivator doing labour on their own land.
  - Managers of certain aspects of agricultural production by way of labour supervision and the participation in post harvest operations.
- **Status:** As per **Agriculture Census 2015-16**, **female operational holdings increased** to 14.0 percent in 2015-16 against and 12.8 percent in 2010-11. This indicates rising participation of females in management and/or operation of agricultural holdings in the country, also termed as **feminization of agriculture**.
  - The proportion of operated area managed by female operational holders has also increased to 11.8 percent in 2015-16 against 10.4 percent in 2010-11.
  - According to the Food and Agriculture Organization, women constitute a third of India's agricultural labour force and contribute 55-66% to farm production.
  - According to non-profit Oxfam, around 80 percent of farm work in India – including sowing, winnowing, harvesting, and other labor-intensive processes and non-mechanized farm occupations – is undertaken by women
- **Reasons for emerging trend of feminization of Agriculture**
  - **Rural to urban migration of male members**: With male out-migration, women have additionally taken on the role of providing for their households on a daily basis, since remittances are irregular. This means that they now have to take care of their own farming and also work as agricultural wage labourers.
  - **Cheap and easily available agriculture labour**: Women are more willing to accept low-paid irregular work, are easy to hire and fire, are thought to be docile and hardworking, and certain jobs are typified as women's work such as picking tea.
  - **Agrarian distress**: It has led to a shift of male members to non-farm activities and pushed female members to perform agricultural and allied activities.

Issues faced by Women in Agriculture Sector

- **Low land and asset ownership**: Women involved in agriculture still lag behind in terms of land and asset ownership, even when acting as primary cultivators. This is largely due to patriarchal social norms and limited awareness about their property rights. Women are also not recognized as farmers in Indian policies.
  - Lack of entitlement to land (and other assets such as machinery, livestock etc.) is a severe impediment to women cultivators. Land titles are often demanded as security for credit, basis for entitlement of agriculture-related schemes etc.
- **Wage gap**: Women in general are offered lower wages for agriculture labour, especially in informal and private sector.
- **Lack of supportive infrastructure**: Technological interventions and infrastructural facilities in agriculture, in general, are not designed with women farmers in mind.
- **Absence of decision-making power**: Enhanced responsibility has not translated into decision-making powers over important issues such crop selection, division of duties, marketing etc.
- **Limited to drudgery work**: Mechanization of agriculture has resulted in confinement of women to labour intensive and menial roles such as winnowing, harvesting, sowing seeds and rearing livestock.
- **Illiteracy**: Women workers in agriculture suffer from high illiteracy rate and drop-out of schools and have little awareness about the existing schemes, benefits, rights, etc. As a result of this female population engaged in agriculture has poor economic as well social growth.

- **Low representation in administrative bodies**: Women have no representation in agricultural marketing committees and other similar bodies.

Way Forward

- **Enhancing representation of women in decision-making bodies**: Women must be involved in decision-making bodies that have the potential to introduce structural changes in agricultural sector.
- **Agricultural education be made gender sensitive** and research, development, extension and services be engendered to give due recognition to the multiple role played by women agriculturists.
- Technological advancements in designing tools can play an important role in making farm equipment easy to use for women.
- **Promoting women SHGs**: Women Self Help Groups can be proactively engaged in value addition of agri produce at village level.
- In addition, beekeeping, fishery, poultry, animal husbandry have major scope for women farmers and women centric schemes in these sectors can be promoted in consultation with the representatives of women farmers.
- **Prioritizing women in accessing credit on soft terms** from banks and other financial institutions for acquisition of land, assets and agricultural inputs.
- **Awareness generation among women regarding their inheritance rights** coupled with access to judicial relief and redress, removing discrimination through legal reforms, and providing legal aid, assistance and counseling.
- **Skill development training** needs to be delivered to women farmers to train them in areas of field operations, organic farming etc.
- Policy emphasis must be to **recognise the work of female farmers** and grant equal pay to them.

> **Steps taken by the Government**
> - **Mahila Kisan Sashaktikaran Pariyojana (MKSP)**: The Department of Rural Development, Ministry of Rural Development is implementing MKSP to empower women in agriculture by making systematic investments to enhance their participation and productivity, as also to create and sustain their agriculture-based livelihoods.
> - **ICAR-Central Institute for Women in Agriculture (ICAR-CIWA):** It is a first of its kind institution in India that is exclusively devoted to gender related research in agriculture.
> - **Additional support in existing schemes**: The Department of Agriculture Cooperation and Farmers Welfare is also providing additional support and assistance to female farmers, over and above the male farmers under various Schemes namely Agri-Clinic & Agri-Business Centre (ACABC), Integrated Schemes of Agricultural Marketing (ISAM), Sub-Mission of Agricultural Mechanization (SMAM) and National Food Security Mission (NFSM).

6.2. BETI BACHAO BETI PADHAO SCHEME

Why in News?

Ministry of Women and Child Development recently published progress and achievements of Beti Bachao Beti Padhao (BBBP) Scheme.

About BBBP Scheme
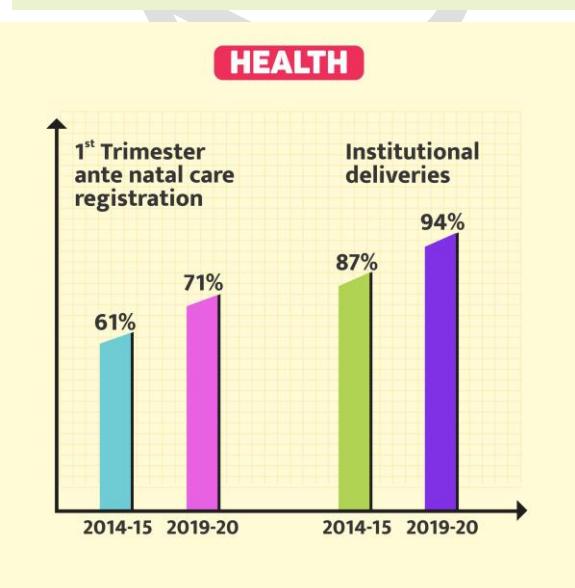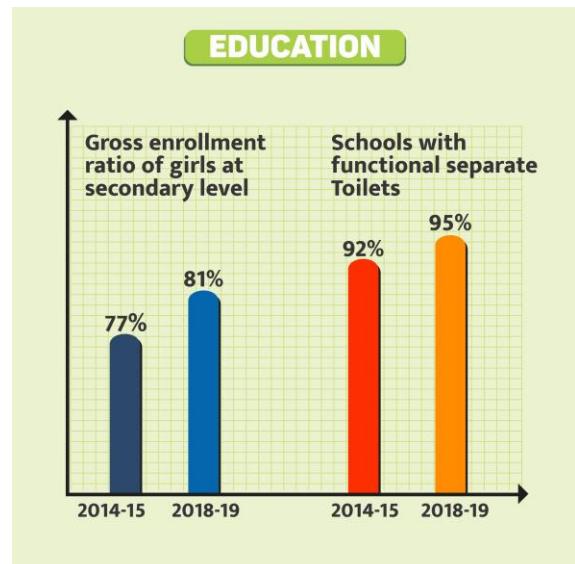
- Beti Padhao (BBBP) was launched in 2015 at Panipat, Haryana, as one of the flagship programmes of the Government, to address the declining Child Sex Ratio and related issues of empowerment of women on a life-cycle continuum.
- It is a tri-ministerial convergent effort of Ministries of Women and Child Development, Health & Family Welfare and Education.
- **Objectives of the Scheme**
  - o Prevent gender biased sex selective elimination
  - o Ensure survival & protection of the girl child
  - o Ensuring education and participation of the girl child.
- **Major components**
  - o Advocacy and Media Communication Campaign
  - o Multi-Sectoral interventions in selected 405 districts

Achievements of BBBP Scheme
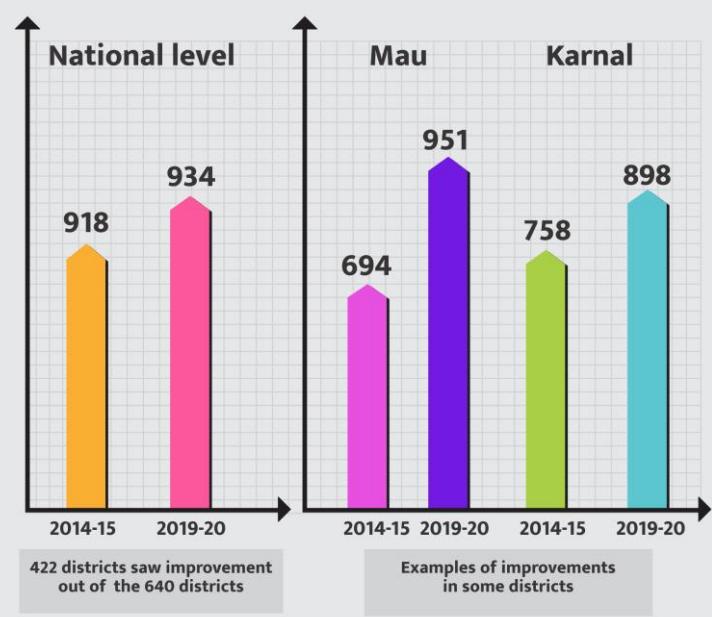
- **Improvement in Sex Ratio at Birth, Health and Education** (refer infographics).
- **Attitudinal change**: The BBBP scheme has been able to bring the focus on important issue of female infanticide, lack of education amongst girls and deprivation of their rights on a life cycle continuum. The scheme has successfully engaged with Community to defy the age old biases against the girl child and introduce innovative practices to celebrate the girl child, such as-
  - o **Use of BBBP logo** in popular Indian festivals i.e. Lohri, KalashYatra, Rakhi, Ganesh Chaturdashipandal, festival of flowers etc.
  - o Collaborating at the level of community for observing the son centric rituals while celebrating the birth of girl child i.e. **Kuwapoojan, Thalibajana** etc.
  - o **Felicitation of mothers and girl child** at community level and in hospitals by Administration to establish the relevance of the girl child.
  - o Celebration of **Beti Janmotsav** in each district.

Issues that still remain

- **Underutilization of funds**: States across India have utilised just 45 per cent of the funds allocated under the BBBP scheme in the last five years (2015-16 to 2019-20).
  - o Fourteen States, including Uttar Pradesh, Rajasthan, Gujarat, Maharashtra, Kerala, Haryana and Madhya Pradesh, have not utilised even half of the total allocation during this period.
- **Reduction in budget allocation**: The proposed budget for the Union Women Child Development Ministry was reduced by over 18 per cent in present budget as compared to the last fiscal. Also, there is no allocation earmarked for the BBBP scheme.
- **Lack of proper monitoring**: There have been incidences of non-compliance with the issued guidelines, such as the Task Force meetings under the scheme do not take place frequently and monthly reports or statement of expenditure from districts are often not submitted timely.
- **High dropout rates:** The average dropout rate of girls was 17.3% at the secondary education level and 4.74% at the elementary level in 2018-19. Also caste based discrimination thrives to push Dalit and Adivasi children, especially girls, out of school.
- **Challenges of the post-COVID world**: The pandemic may have impacted female literacy rates due to issues such as gender-based digital divide, prioritization of education of male child, increased burden of household chores on girls etc.

EDUCATION

Gross enrollment ratio of girls at secondary level: 77% (2014-15), 81% (2018-19)

Schools with functional separate Toilets: 92% (2014-15), 95% (2018-19)

HEALTH

1st Trimester ante natal care registration: 61% (2014-15), 71% (2019-20)

Institutional deliveries: 87% (2014-15), 94% (2019-20)

SEX RATIO AT BIRTH

National level: 918 (2014-15), 934 (2019-20)

Mau: 694 (2014-15), 951 (2019-20)

Karnal: 758 (2014-15), 898 (2019-20)

422 districts saw improvement out of the 640 districts

Examples of improvements in some districts

- **Unbalanced expenditure patterns**: A review of the component-wise distribution of expenditure for 2017-18, as well as planned expenditure profile for 2018-19 and 2019-20 suggests that a majority of the expenditure, i.e. about 43% on average, is allocated for media campaigns at the national level, with another 4% for campaigns at district level. However, only a small proportion, i.e. about 5% each, is allocated for education and health-related interventions.

Way Forward

- **Increase planned expenditure allocation for education and health related interventions**: Media campaigns and community outreach activities for changing societal attitudes need to be balanced with the remaining objectives of the scheme, particularly of increasing female school enrolment and attendance, ensuring improvement in girls' nutrition status, and enhancing girls' access to improved sanitation facilities.
- **Greater use of mobile technology for monitoring and documentation**: Mobile technology should be harnessed for this as it enables increased transparency, and reduces scope for data manipulation.
- **Government must ensure stricter enforcement of the policy guidelines**, improve the monitoring mechanisms and incentivize state governments to utilize funds effectively.
- **Private sector entities**, such as local non-governmental organisations (NGOs) should be on-boarded as long-term partners for the execution of community outreach activities.

7. SCIENCE AND TECHNOLOGY
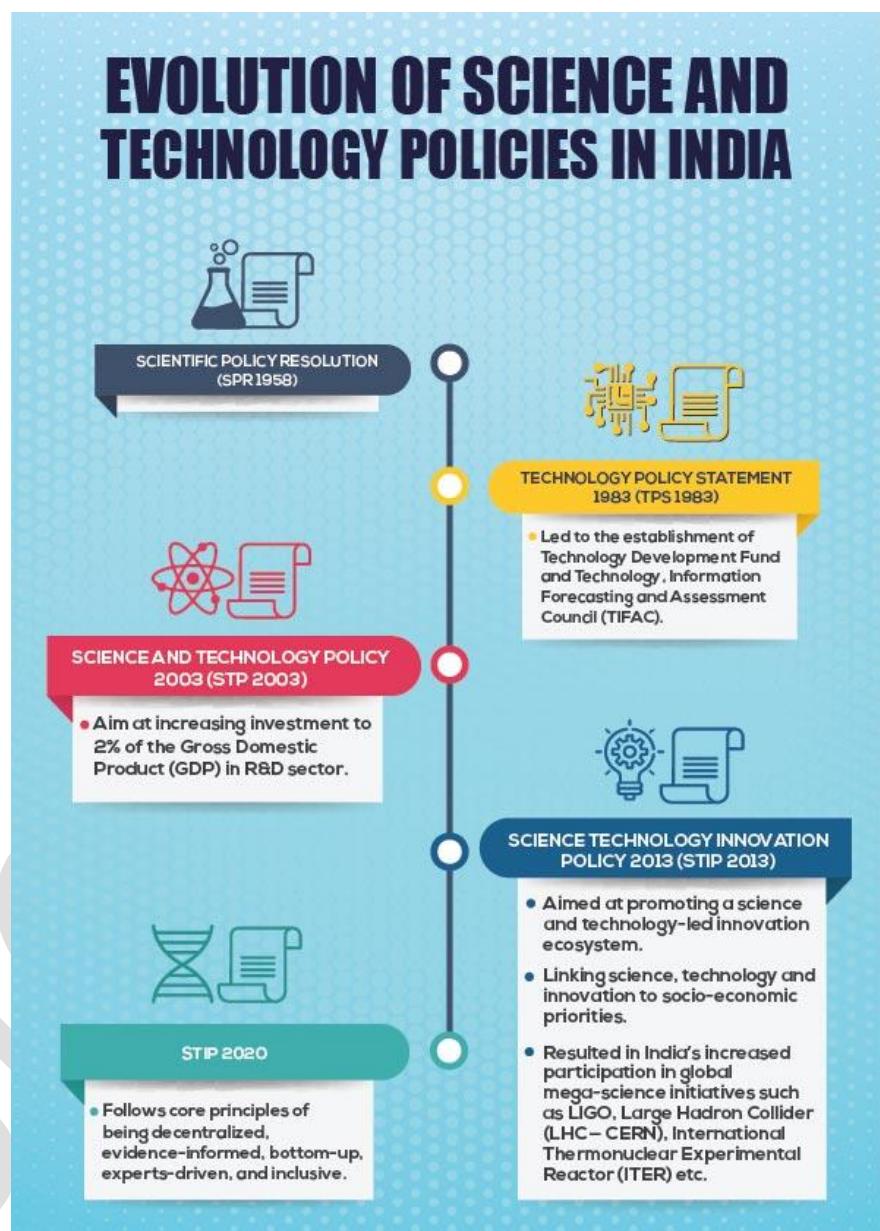
7.1. DRAFT NATIONAL SCIENCE TECHNOLOGY AND INNOVATION POLICY

Why in News?

Recently, the draft of **5th National Science Technology and Innovation Policy (STIP)** was released by the **Department of Science and Technology (DST)**.

Need for a new policy

- **Lack of access to scientific knowledge:** R&D institutions in India spend nearly Rs 1,500 crore per annum for subscribing to journals. But still, only a third of the country's total of 3.5 lakh-odd researchers get access to these journals.
  - o **Researchers in remote areas, poor students who cannot pay for such articles**, or those who are not part of government institutions, do not have access to this scholarly knowledge.
- **Bridging the gender divide:** Over the last six years, while there has been considerable improvement in the participation of women in science education both at the Bachelor's and Master's levels, there is a persistent gap at the doctoral level between male and female graduates due to which overall participation of women in R&D continues to be only about 16%.

EVOLUTION OF SCIENCE AND TECHNOLOGY POLICIES IN INDIA

- **SCIENTIFIC POLICY RESOLUTION (SPR 1958)**

- **TECHNOLOGY POLICY STATEMENT 1983 (TPS 1983)**
  - Led to the establishment of Technology Development Fund and Technology, Information Forecasting and Assessment Council (TIFAC).

- **SCIENCE AND TECHNOLOGY POLICY 2003 (STP 2003)**
  - Aim at increasing investment to 2% of the Gross Domestic Product (GDP) in R&D sector.

- **SCIENCE TECHNOLOGY INNOVATION POLICY 2013 (STIP 2013)**
  - Aimed at promoting a science and technology-led innovation ecosystem.
  - Linking science, technology and innovation to socio-economic priorities.
  - Resulted in India's increased participation in global mega-science initiatives such as LIGO, Large Hadron Collider (LHC – CERN), International Thermonuclear Experimental Reactor (ITER) etc.

- **STIP 2020**
  - Follows core principles of being decentralized, evidence-informed, bottom-up, experts-driven, and inclusive.

- **Learnings from COVID-19 to develop scientific temper in the country:** The pandemic presented an opportunity for R&D institutions, academia, and industry to work with a shared purpose, synergy, collaboration and cooperation. There is the need to adopt such learnings for greater efficiency and synergy in future.
  - o Also**,** Instances of attacks on the credibility of science, and miscommunications and fake news seen during the pandemic exposed the gullibility of the common man, and demonstrated the need to develop a scientific temper, and development of policies informed by scientific evidence.
- **Expansion of STI funding landscape:** India's Gross Domestic Expenditure on R&D (GERD) is just 0.6% of GDP which is quite low compared to other major economies (1.5% to 3%). This can be attributed to inadequate private sector investment (less than 40%) in R&D activities in India; in comparison to other technologically advanced countries (70% of GERD).
- **Greater Thrust on Innovation:** India has improved its rank from 81 in 2015 to 48 in 2020 in the Global Innovation Index. But it is still much lower than expected for India's level of access to equity capital.

- o Indian residents' share in total patents filed in the country stands at 36 per cent (in comparison to the average of 62 per cent in other largest economies).

Key provisions of the draft policy:

This Policy **will replace the Science Technology and Innovation Policy, 2013** and have following major provisions:

- **Open Science Framework:** It will encompass an open centralised database platform **National STI Observatory** to provide access to scientific data, information, knowledge, and resources to everyone in the country (**One Nation, One Subscription**).
  - o A **dedicated portal** to provide access to the outputs of such publicly-funded research will be created through the **Indian Science and Technology Archive of Research (INDSTA).**

Vision of the policy
- **To achieve technological self-reliance** and position India among the top three scientific superpowers in the decade to come.
- **To attract, nurture, strengthen and retain critical human capital** through a 'people centric' science, technology and innovation (STI) ecosystem.
- **To double the number of Full-Time Equivalent (FTE) researchers**, Gross Domestic Expenditure on R&D (GERD) and private sector contribution to the GERD every 5 years.
- **To build individual and institutional excellence in STI** with the aspiration to achieve the highest level of global recognitions and awards in the coming decade.

- **Capacity Development:** Strategies to improve STI education making it inclusive at all levels and more connected with the economy and society will be developed through processes of skill building, training and infrastructure development. For this:
  - o **Higher Education Research Centres (HERC) and Collaborative Research Centres (CRC)** will be established to provide research inputs to policymakers and bring together stakeholders.
  - o **Innovation and Entrepreneurship Centres** will be established starting from the undergraduate level of university education.
  - o **Research in innovation practices** will be made a mandatory component of university/college teachers' professional development programmes.
- **Financing of STI:**
  - o **STI unit** will be set up in each department/ ministry in the central, the state and the local governments, public sector enterprises, private sector companies and startups with a minimum earmarked budget to pursue STI activities.
  - o **Advanced Missions in Innovative Research Ecosystem (ADMIRE)** initiative for creating hybrid funding models to support distributed and localised collaborative mission-oriented projects.
  - o **STI Development Bank** will be set up to facilitate a corpus fund for investing in direct long term investments in select strategic areas.
- **Reorienting research culture: Research and Innovation Excellence Frameworks (RIEF)** will be developed to reorient research culture to recognize social impacts along with academic achievements.
- **Integrating Traditional Knowledge System:** An **institutional architecture** will be established to integrate Traditional Knowledge and grassroots innovation into the overall education, research and innovation system.
  - o Advanced tools based on **Artificial Intelligence (AI) and machine learning** will be used **for curation, preservation and maintenance of heritage knowledge.**
- **Technology Development and Indigenisation:** The policy will promote technology self-reliance and indigenization in alignment with national priorities, like sustainability and social benefit, and resources and to achieve the larger goal of "Atmanirbhar Bharat". Under this:
  - o **Technology Support Framework** will be created **for facilitating International engagements** to gain essential know-how towards creation and development of indigenous technologies.
  - o **Strategic Technology Board (STB)** and **Strategic Technology Development Fund (STDF)** will be constituted for collaboration and funding.
- **Equity and Inclusion:** An **India-centric Equity & Inclusion (E&I) charter** will be developed for tackling all forms of discrimination, exclusions and inequalities in STI leading to the development of an institutional mechanism.
- **Mainstreaming Science Communication and Public Engagement** through creative and cross-disciplinary platforms, research initiatives, and outreach platforms.
  - o **Science Media Centres** will be established at national and regional levels to connect scientists with media persons and science communicators.

- **International STI Engagement (Complementing 'S&T for Diplomacy' with Diplomacy for S&T):**
  o **Engagement with the Diaspora will be intensified** through attracting the best talent back home through fellowships, internships schemes and research opportunities.
  o **International Knowledge Centres** will be established to promote global knowledge and talent exchange.
- **STI Policy and Governance:**
  o **STI Policy Institute** will be established to build and maintain a robust interoperable STI metadata architecture.
  o **Research and Innovation (R&I) governance framework** will be set up to facilitate, stimulate and coordinate R&D activities across the sectors.

7.2. ADDITIVE MANUFACTURING

Why in news?
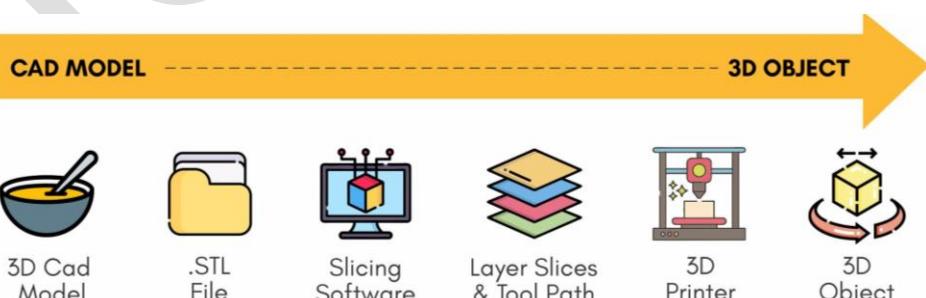
Recently, the Ministry of Electronics and Information Technology (MeitY) prepared a strategy paper titled **"National Strategy on Additive manufacturing (AM)".**

About National Strategy on Additive manufacturing (AM)

- Strategy aims to **promote various verticals of the AM sector,** including machines, materials, software and designs to leverage the untapped business opportunities that will unfold in the near future.
- This will further accelerate the adoption of untapped potential business opportunities in the near future and the **execution of recommendations as laid out in the National Electronics Policy, 2019.**
- **Its objectives include:**
  o Ensure creation of a **sustainable ecosystem for the AM industry** to compete globally.
  o Position India as a global **Innovation and Research hub for Additive Manufacturing.**
  o **Promote creation of Indian IPR.**
- **Strategy envisages:**
  o **Creation of National Additive Manufacturing Centre:** A dedicated agency e constituted to spearhead the National Initiative for positioning India at the forefront of development of AM technologies and address legal & ethical issues arising out of it.
  o **Engineering curriculum suitable for bachelor and master degrees** to be developed through in consultation with Industry and be introduced in ITI's /NIT's/IITs.
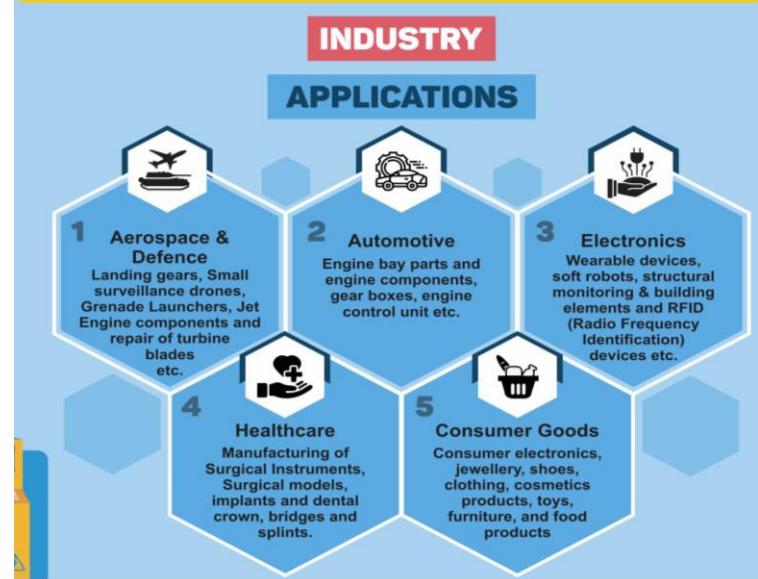
About Additive Manufacturing (AM)/ 3D printing

- Additive manufacturing or 3D printing is defined as the **technology that constructs a three-dimensional object from a digital 3D model or a Computer-aided design (CAD) model** by adding material layer by layer.

CAD MODEL -------- 3D OBJECT

3D Cad Model | .STL File | Slicing Software | Layer Slices & Tool Path | 3D Printer | 3D Object

- The addition of material can happen in multiple ways, namely **power deposition, resin curing, filament fusing.**
  o The deposition and solidification are **controlled by computer to create a three-dimensional object.**
  o These objects can be of almost any shape or geometry.
- Traditional manufacturing methods, by contrast, are **subtractive in nature**.
  o Subtractive manufacturing involves **removing parts of a block of material** in order to create the desired shape.
  o Cutting wood into useful shapes, for instance, is a very simple example of a subtractive process.
- USA's market share on AM is 36%, followed by EU as 26% and China 14% and **India holds a meagre 1.4%** of the AM global market share.
- **Thermoplastics, Metals, Ceramics as well as Biomaterials** can be used in additive manufacturing.

Potential impact of Additive Manufacturing over different sectors

- **Economic impact:** Production AM technologies will enable **fast and cost-effective manufacturing**; thereby traditional manufacturing processes may be reduced to a single step process.
  - o It can help in low volume production of **high value products with complex geometries.**
  - o AM will **empower individuals to create and actively participate** in the global value chain thereby developing new technology-driven industries and jobs.
- **Environmental impact:** AM facilitates development of new materials and technologies which are **more energy and resource efficient to alleviate its carbon footprint and increases its energy security.**
  - o For e.g. it can help in achieving **better fuel efficiency through weight reduction** of parts.

- **Innovation Diffusion:** AM enables greater design flexibility through modification of virtual designs models and new material properties. It allows for limited design constraints without the risk of high expenditure thereby **boosting innovation in the product development process**. For e.g.:
  - o **High resolution, multi-material, large area fabrication** of electronic devices that are free of printed circuit boards (PCBs).
  - o **Patient centric healthcare through personalisation** of drugs for complex patient specific release profiles.
  - o **Production of customized implants and reduction in healthcare** costs due to minimal re-intervention enabled by accurate diagnosis.

Challenges to Adoption of Additive Manufacturing in India

- **Cost of Equipment & Material:** Most of the industrial grade AM machines and raw materials need to be imported, which makes equipment more expensive compared to other manufacturing techniques such as CNC machining and injection moulding.
- **Lack of AM Ecosystem:** Service providers in India are limited and most are not equipped with competitive AM technologies compatible with materials such as plastic, metal, ceramic.

> **Initiatives to promote 'Additive manufacturing' in India**
> - Establishment of **3D printing Manufacturing Lab at National Institute of Electronics & Information Technology, Aurangabad**. The Institute also offers a certificate course in 3D Printing.
> - Under Atal Innovation Mission (AIM), **Atal Tinkering Labs have been set up, with do-it-yourself (DIY) kits on latest technologies like 3D Printers,** Robotics, Internet of Things (IOT), Miniaturized electronics.

- **Monopoly of AM market by foreign Original Equipment Manufacturers (OEM):** Most of the AM Original Equipment Manufacturers (OEM) are foreign companies. This has created a monopolistic approach towards consumables, which are therefore very expensive and thus hamper the adoption of AM technology.
- **Lack of skilled manpower:** The paradigm shift in design and production processes through AM requires a workforce with technical know-how of the technologies. Lack of trained and experienced engineers and designers is a major impediment to the adoption and advancement of AM.
- **Legal and Ethical Issues:** AM may focus on laws related to intellectual property, and possible concerns around trademark and design violations. In addition to these legal issues, Additive Manufacturing raises some critical ethical concerns, especially around bioprinting which in many ways is akin to issues raised against gene-editing.

Ways to tackle challenges in adoption of AM technologies in India

- **Government policies and incentives:** Preferential Market Access Policy should be adopted and incentives to be provided to support local additive manufacturers.

- **International R&D Partnership:** While promoting AM in the country, it would be appropriate to attract foreign leaders to set up their base in India and simultaneously promote Indian ancillary companies for strengthening their long-term value proposition through bilateral and multilateral level Government-to-Government collaboration.
- **Skilling &Upskilling:** Effective measures must be adopted to proactively provide skilling and upskilling programmes on AM to ensure a technically competent, readily available workforce.

7.3. TRANS FATS

Why in News?

After oils, FSSAI has put the cap on trans fats in foods.

Details

- Recently, FSSAI issued a revised regulation according to which "**Food products" using edible oils and fats as an ingredient shall not contain industrial TFAs** more than 2% by mass of total oils/fats present in product, on and from 1st January, 2022.

> **Food Safety and Standards Authority of India (FSSAI)**
> - It has been **established under Food Safety and Standards, 2006 which consolidates various acts & orders** that have hitherto handled food related issues in various Ministries and Departments.
> - FSSAI has been created for laying down science-based standards for articles of food **and to regulate their manufacture, storage, distribution, sale and import to ensure availability of safe and wholesome food for human consumption.**
> - **Ministry of Health & Family Welfare** is the Administrative Ministry for the implementation of FSSAI.

- Earlier, in December, FSSAI had capped the amount of **trans fatty acids (TFA) in 'oils and fats' to 3% for 2021 and 2% by 2022 from the current permissible limit of 5%** through an amendment to the Food Safety and Standards (Prohibition and Restriction on Sales) Regulations.
- Trans fat, or trans-fatty acids, **are unsaturated fatty acids that come from either natural or industrial sources**:
  - **Naturally occurring trans-fat** come from ruminants (cows and sheep).
  - **Industrially produced trans-fat** are formed in an industrial process that adds hydrogen to vegetable oil converting the liquid into a solid, resulting in "partially hydrogenated" oil (PHO).
- Industrially produced trans-fats are **found in hardened vegetable fats such as margarine and ghee** (clarified butter) and are often present in snack foods, baked goods and fried foods.
- Manufacturers often use them as they **have a longer shelf life and are cheaper than other fats**.
- They are more unhealthy than saturated fats as they increase **bad cholesterol, i.e., Low Density Lipoproteins (LDL)** and **lower good cholesterol, i.e., High Density Lipoproteins (HDL).**
- They have harmful health effects even in small amounts – for **each additional 2% of calories from trans-fat** consumed daily, the **risk of coronary heart disease (CHD) increases by 23%.**
- **Approximately 540,000 deaths each year** can be attributed to intake of industrially produced trans fatty acids and in India the figure reaches to 60,000 number.
- **World Health Organization (WHO) recommends that trans-fat intake be limited to less than 1%** of total energy intake i.e., less than 2.2 g/day with a 2,000-calorie diet.

Steps taken against Trans fats

- WHO launched a comprehensive plan **to eliminate industrially-produced artificial trans fats from the global food supply by 2023 called REPLACE**.

REPLACE TRANS FAT
AN ACTION PACKAGE TO ELIMINATE INDUSTRIALLY-PRODUCED TRANS-FATTY ACIDS

R E P L A C E

REVIEW	PROMOTE	LEGISLATE	ASSESS	CREATE	ENFORCE
dietary sources of industrially-produced trans fats and the landscape for required policy change	the replacement of industrially-produced trans fats with healthier fats and oils	or enact regulatory actions to eliminate industrially-produced trans fats	and monitor trans fat content in the food supply and changes in trans fat consumption in the population	awareness of the negative health impact of TFA among policy-makers, producers, suppliers, and the public	compliance with policies and regulations

- FSSAI, Ministry of Health and Family Welfare, is **working for the elimination of industrially produced trans-fat in the 'food supply' in India by the year 2022**, a year ahead of the global target by the WHO for complete elimination of trans fat. To achieve the target, the Food Safety and Standards Authority of India (FSSAI) launched two initiatives:
  - **Eat Right Movement** is built on two broad pillars of 'Eat Healthy' and 'Eat Safe'. It aims to cut down on salt, sugar and oil consumption by 30% in three years by educating customers.
  - **Heart Attack Rewind campaign** to warn citizens about the health hazards of consuming trans fats and offer strategies to avoid them through healthier alternatives.
  - **Trans Fat Free logo:** Food establishments which use trans-fat free fats/oil and do not have industrial trans-fat more than 0.2g/100g of food, can display "Trans-fat free" logo in their outlets and on their food products.

Challenge to eliminate trans fats from the global food

- **Lack of awareness** that TFAs are an important public health challenge;

- **Lack of capacity** of small and medium food producers to replace TFAs;

- **Lack of replacement** fats and technology

- **TFA intake data is limited** or not available for many countries, in particular in Asia, Africa, Eastern Europe, and the Eastern Mediterranean.
  - Heterogeneity of TFA intake data due to **different sampling and assessment methods** also make data comparisons between countries and regions challenging.

> **Countdown to 2023: Global Trans Fats Elimination 2020 report**
> - In September 2020, **WHO released progress report** on trans-fat elimination titled "Countdown to2023: Global Trans Fats Elimination 2020".
> - **According to report:**
>   - **58 countries so far have introduced laws** that will protect 3.2 billion people from the harmful substance by the end of 2021. But more **than 100 countries still need to take actions** to remove these harmful substances from their food supplies.
>   - **Fifteen countries account for approximately two thirds of the worldwide deaths**.
>   - ✓ Of these, **four (Canada, Latvia, Slovenia, United States of America) have implemented WHO-recommended best-practice policies**, either by setting mandatory limits for industrially produced trans fats to 2% of oils and fats in all foods or banning partially hydrogenated oils (PHO).
>   - ✓ **But the remaining 11 countries** (Azerbaijan, Bangladesh, Bhutan, Ecuador, Egypt, **India**, Iran, Mexico, Nepal, Pakistan, Republic of Korea) **still need to take urgent action**.

Way forward

- Regulations targeting TFAs should take into account the concerns of small and medium food producers, for example **through long enough transition periods and technical support**.
  - Knowledge transfer between large and small producers could be an additional solution.
- Promote the development of **alternative supplies of more healthful alternatives of trans fats** such as natural unsaturated oils,
- **Mandatory labelling of TFA and saturated fat content** for all edible oils and food products should be implemented.
- For proper implementation in India, **FSSAI will need to pursue local governments to improve surveillance, inspection of food premises, sampling of food products**, regular training of officers, upgradation of food labs, etc.
- Civil society organisations should play an important **role in informing the public, providing support for draft legislation/regulation and monitoring implementation.**

7.4. INDIA INNOVATION INDEX 2020

Why in News?

Recently, NITI Aayog has released the second edition of the India Innovation Index.

About the Index

- It seeks **to scrutinize the innovation capacities and performance of Indian states**. The first edition of the index was launched in 2019.
- It provides an extensive **framework for the constant evaluation of the innovation ecosystem** of Indian states and UTs.
- The index intends to **accomplish the following three functions:**
  - Rank all states and UTs based on their index score.
  - Identify opportunities and challenges.
  - Assist in modifying governmental policies to foster innovation.
- Index measures **innovation inputs through 'Enablers' and innovation output as 'Performance.**
  - **Enabler parameters (factors that reinforce innovative capacities):** Human Capital, Investment, Knowledge Workers, Business Environment, Safety and Legal Environment.
  - **Performance parameters:** Knowledge Output, Knowledge Diffusion.
- **The states have been bifurcated into three categories:**
  - **Major states:** Top performers are Karnataka, Maharashtra, Tamil Nadu, Telangana.
  - **North-east and hill states:** Top performers are Himachal Pradesh, Uttarakhand, Manipur.
  - **UTs and City States:** Top performers are Delhi, Chandigarh, Daman and Diu.
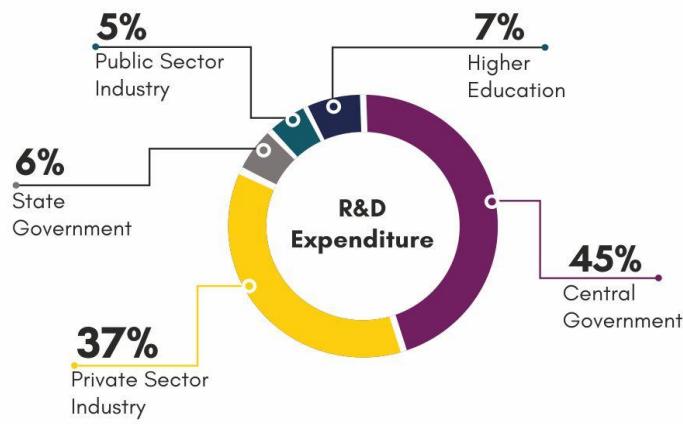
Key Findings in the Index

- India's **innovative capabilities are mostly carried by its Safety and Legal Environment and Human Capital**, while Investment scores the lowest (refer infographic).
- **Some challenges to innovation include** deficiency in knowledge workers, the low expenditure in R&D, higher education, science, technology and environment, and the lack of venture capital investment.
- Innovation scores also show a **positive correlation with the Gross State Domestic Product (GSDP),** meaning higher economic growth leads to more innovation and vice-versa.

> **India and Innovation**
> - **Innovation** is the creation, development and implementation of a new product, process or service, with the aim of improving efficiency, effectiveness or competitive advantage.
> - India ranks **48th in Global Innovation Index (GII) 2020**.
>   - GII is a joint collaborative effort between the WIPO, Cornell University, and INSEAD that annually ranks the innovation performance of more than 130 economies.
> - Additionally, **India ranks the highest amongst central and southern Asian countries** and is a new entrant to the Top 3 innovation economies among the lower-middle-income group nations with Vietnam and Ukraine.
> - **India spends around 0.7% of its GDP on research and development,** which is much lower than the top spenders, such as Israel (4.95%), South Korea, Sweden, and Japan.
> - **India has a much lower share of researchers per million inhabitants (252.7)** compared to Denmark (8065.88), South Korea (7980.39).
> - **Gross Expenditure on R&D (GERD) has consistently risen over the years**, tripling from Rs 39,437.77 crores in 2007-08 to Rs 1,13,825.03 crores in 2017-18.
> - India's break-up of GERD (refer infographic) stands in contrast with other countries, wherein it is the business sector, dominated by private enterprises, that lead the expenditure.
>
> ## National R&D Expenditure by Sector, 2017-18
>
>
>
> - 5% Public Sector Industry
> - 7% Higher Education
> - 6% State Government
> - 45% Central Government
> - 37% Private Sector Industry
>
> R&D Expenditure
>
> Source: Research and Development Statistics at a Glance 2019–20, Department of Science and Technology, Government of India

- In the case of the low-performing states, major deficiency in innovation and performance indicators can be accrued to **low levels of investment, Knowledge Workers, and an inadequate Business Environment**.
- Overall, India needs to **focus on its performance across key pillars such as Knowledge Workers, Business Environment, and Knowledge Output.**

Underlying issues identified
- **At National-level**
  - **Regional imbalance with respect to the presence of research institutions** in most North-Eastern and Central States.
  - **Lack of incubator centers** that hurt the growth of young businesses and innovation ventures.
  - **Limited grassroots innovations** observed across the nation is a major concern. Such innovations have been acknowledged as a cost-effective route toward sustainable development.
- **At State level:** Lack of state specific innovation cell and lack of state-level engagements to showcase best Practices.

> **Where performers are doing better than others?**
> - **Karnataka:** strong number of venture capital deals, registered GIs and ICT exports, high FDI inflow etc.
> - **Himachal Pradesh:** High number of knowledge workers, industry-friendly policies and incentives etc.
> - **Delhi:** Conducive business environment, especially in terms of internet penetration.

Suggestions by the report
- **At National-level**
  - Tax incentives, low-interest loans, and priority procurement for top R&D-intensive domestic firms in targeted areas.
  - **Providing direct R&D grants to companies,** rather than giving to academic institutions, **to commercialise innovative concepts.**
  - **A tier-based incubator ecosystem** involving outcome-oriented sustainable incubator models.
  - Through **successful outreach programs and launching a dedicated scale-up fund,** the value chain of grassroots innovation can be revived.
- **At State level**
  - Special **government-backed entities must be established,** such as innovation cells. E.g., Telangana established its innovation cell in 2017.
  - To **promote peer-to-peer learning**, a platform must be established to allow the sharing of best practices.
  - Focus on **State innovation policies.**

8. CULTURE

8.1. CAVE PAINTINGS

Why in news?
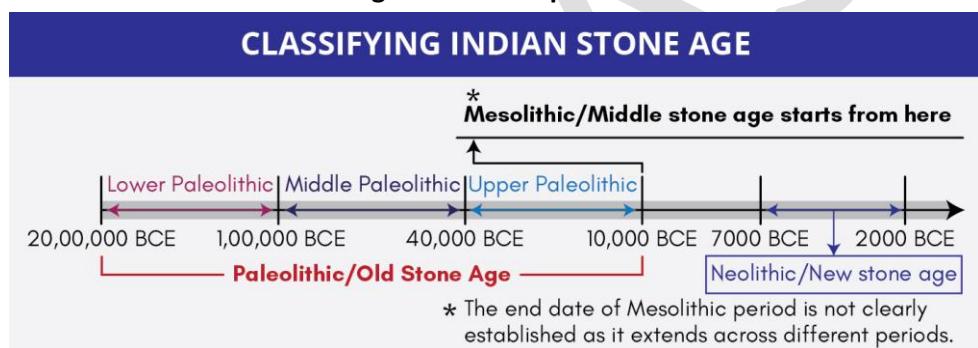
Recently, World's oldest known cave painting (painted at least 45,500 years ago) was found in the limestone cave of Leang Tedongnge, Indonesia.

More about News

- This cave painting **uncovered in South Sulawesi** consists of a life-sized depiction of a warty pig.
- The previously oldest dated rock art 'scene' at least 43,900 years old, was a **depiction of hybrid human-animal beings hunting Sulawesi warty pigs and dwarf bovids.**

Cave paintings in India

- In India the earliest paintings have been reported from the **Upper Paleolithic times.**
    - o These cave paintings are **manifestations of the cognitive development of the hominins.** Most are Mesolithic cave paintings.
    - o There is no concrete information if Lower Paleolithic people ever produced any art objects.
- The first discovery of rock paintings was made in India in **1867–68 by Archibold Carlleyle at Sohagihat in the Mirzapur**, Uttar Pradesh.

CLASSIFYING INDIAN STONE AGE

Mesolithic/Middle stone age starts from here

Lower Paleolithic | Middle Paleolithic | Upper Paleolithic
20,00,000 BCE | 1,00,000 BCE | 40,000 BCE | 10,000 BCE | 7000 BCE | 2000 BCE
Paleolithic/Old Stone Age

Neolithic/New stone age

* The end date of Mesolithic period is not clearly established as it extends across different periods.

- o The caves of **Bhimbetka** were discovered in 1957–58 by eminent archaeologist **V.S. Wakankar**.
- **Distribution of prehistoric cave paintings:** Such Cave paintings sites have been reported throughout India in different geological, geographical and climatic zone s. But the **richest paintings are** reported from the **Vindhya ranges** of Madhya Pradesh and their **Kaimurean extension**s into Uttar Pradesh.
    - o These hill ranges are full of Palaeolithic and Mesolithic remains.
    - o The colours of these paintings have remained intact because of the chemical reaction of the oxide present on the surface of the rocks.
- **Techniques used in paintings:**
    - o **In pre-historic paintings, the rock of mineral** was first ground into a powder. This may then have been mixed with water and also with some thick or sticky substance such as animal fat or gum or resin from trees. Brushes were made of plant fibre.
    - o **In the later historic paintings, mainly the Fresco-secco technique** was used. Here, pigments mixed with an organic binder and/or lime are applied onto a dry plaster (in Fresco-buno, pigments are applied in a wet wall. This technique was adopted in Italy).

> **Salient features of prehistoric cave painting**
> - The paintings here can be divided into three categories **man, animal and geometric**. There are more animal figures than human figures.
>   - o **Humans are represented in stick-like forms.** Wavy lines, rectangle-filled geometric designs, and groups of dots can also be seen.
> - **Depiction of day-to-day life** like hunting, dancing was the **main theme** of these paintings.
> - Various shades of **white, yellow, orange, red ochre, purple, brown, green and black** colours were used.
> - A few are wash paintings but **mostly they are filled with geometric patterns.**
> - **There is some superimposition of paintings.** It might be possible that these caves were painted one above the other for generations.
> - Because of their richness, varied themes, forms, styles and antiquity, **the rock paintings of central India have become the synonym of Indian rock paintings.**

Distinctions and similarities both exist in the cave paintings of various regions. For example: Hand-linked dancing human figures are notable depictions in both Lakhudiyar and Bhimbetka caves.

Salient features of historic paintings

- **Paintings have typological variations** in these caves. Main themes include **religious, mythological, palace scenes.** Floral motifs near the ceiling, geometric designs were also painted for decorations.
- **Movements in the figures are very rhythmic.** Supple limbs, expression on the faces, swaying movement, all speak of the artists' skill in creative imagination in visualising the forms.
- **Vibrant and luminous colours were used.** The principal colours in use were red ochre, vivid red (vermilion), yellow ochre, indigo blue, lapis lazuli, lamp black (Kajjal), chalk white, terraverte and green. **Various skin colours were also used** in the paintings such as brown, yellowish brown, greenish, yellow ochre, etc.
- **Brown thick dark lines are used as contours**. Lines are forceful and full of energy. Attempts are also made to give highlights in the figural compositions.
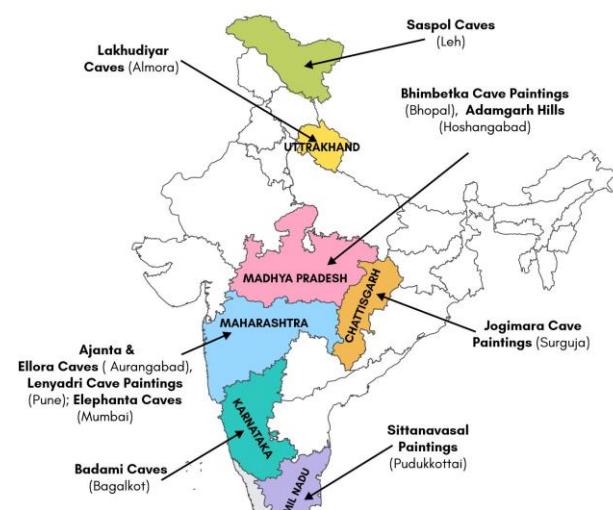
Evolution of the prehistoric cave paintings		
Upper Paleolithic	**Mesolithic Cave paintings**	**Neolithic Cave paintings**
• **Simple iconic animal and human** forms appear for the first time. • Animals were shown in their natural outlines and **humans always in the dynamic action** of hunting or dancing executed in abstract form. • These paintings have also been characterized **by perfect 'S' shaped human** figures depicting activities that look as if they are hunting, dancing and running. • It seems that during this period it was the **upper part of the rocks** in the shelter that **was mostly painted.**	• **Explosion of creativity in the form of numerous motifs, designs.** The figures have been done mostly in gently flowing fine lines reflecting dynamic action. • The hunters are shown wearing **simple clothes and ornaments, elaborate head-dresses** and masks could also be seen occasionally. • Animal forms are naturalistic depictions while **human figures are static and abstract**. • **Male figures are stick like** while the **women are bulky box shaped** with intricate body designs as infilling consisting of spiral or honey-comb. • **Mythical stories** depicting huge defied animals chasing diminutive human beings, medical treatment and burial like activity. • **Dance, pregnant women,** childbirth and a mother with a child are also drawn. • **Example:** Lakhajoar (Fishing scene, family feasting in a hut), Bhimbetka (Magical treatment of an ill person), Chaturbhujnath Nala (dynamic archers).	• The paintings lose their sense of movement, figures are repetitive signs, humans and animals start becoming more and **more schematic and stylized.** • **Size, in general, goes on reducing,** though a few big figures are also there. • Hunting scenes are there, but **hunting as an act of a large group is absent.** From now onwards, the solitary hunter is shown. • **Example:** Chaturbhujnath Nala (Chariots appeared), Kupgallu, Piklihal and Tekkalkota

Other examples of cave paintings

- **Ajanta Caves:** Ajanta is the only surviving example of painting of the first century BCE. The subject matter of these paintings is almost exclusively Buddhist except for decorative patterns on the ceilings and the pillars. The first Buddhist cave monuments at Ajanta date from the 2nd and 1st centuries BCE. During the Gupta period (5th- 6th centuries A.D.), many more richly decorated caves were added to the original group.
- **Bagh Caves:** Located on the far banks of the Baghini river, these Caves contain Buddhist paintings and relics dating back to 5th-7th century. Most significant is Cave No. 4, commonly known as the Rang Mahal (the Palace of Colours).
- **Badami Caves:** Badami was capital of the early Chalukyan dynasty (543 to 598 CE). These cave paintings are dedicated to Lord Shiva and have earliest Brahmanical paintings (belonging to the 6th century A.D.) known so far.

SOME FAMOUS CAVE PAINTINGS IN INDIA

Saspol Caves (Leh)
Lakhudiyar Caves (Almora)
Bhimbetka Cave Paintings (Bhopal), Adamgarh Hills (Hoshangabad)
UTTRAKHAND
MADHYA PRADESH
MAHARASHTRA
CHHATTISGARH
Ajanta & Ellora Caves (Aurangabad), Lenyadri Cave Paintings (Pune); Elephanta Caves (Mumbai)
Jogimara Cave Paintings (Surguja)
KARNATAKA
Sittanavasal Paintings (Pudukkottai)
Badami Caves (Bagalkot)
TAMIL NADU

- **Sittannavasal:** It is a rock-cut Jain temple of the Pandyan era (9th century) near Pudukkottai. These cave paintings are dedicated to the Jain themes and symbolism.
- **Ellora Cave:** These caves show an uninterrupted sequence of monuments dating from A.D. 600 to 1000. They harbour Hindu, Buddhist and Jain temples. Main theme of these paintings is also centered on these 3 religions.
- **Elephanta/Gharapuri Caves:** These Caves were constructed about the mid-5th to 6th centuries AD. They harbour Hindu and Buddhist temples. The remains of the Buddhists Stupas in Elephanta probably belong to the early phase of Buddhism dating 2nd century BC.

8.2. NETAJI SUBHAS CHANDRA BOSE

Why in News

On 23rd January, 2021, India celebrated the 125th birth anniversary of Netaji Subhas Chandra Bose as 'Parakram Divas.'

Political Career

Related information
• **He cleared the Indian Civil Service examination in 1920. However, he resigned** during the probation period in April 1921.
• Along with Chittaranjan Das, Jawaharlal Nehru, Subhash Chandra Bose **served as the President of All India Trade Union Congress (AITUC).**
• He was inspired by Bhagvad Gita and teachings of Swami Vivekananda and Sri Aurobindo Ghosh.

- **His work under political leader Chittaranjan Das in early 1920s:**
  o In 1921, Bose edited the newspaper 'Forward' and later **started his newspaper 'Swaraj'.**
  o He also served as the **Chief Executive Officer of the Calcutta Municipal Corporation,** with Das as mayor of Calcutta.
- **His role as a youth leader in INC in late 1920s:**
  o He had been a leader of the younger, **radical wing of the INC.**
  o He was arrested countless times, and **deported to Burma (Myanmar) in 1925 as he was suspected of connections with secret revolutionary movements.**
  o He authored the book **'The Indian Struggle',** which covered the country's independence movement in the years 1920–1934.
- **His role as the President of INC in 1930s**
  o **He took over as the elected President of Haripura session of INC in 1938 in** Bardoli district of Gujarat.
    ✓ He mentioned the need of a **comprehensive scheme of industrial development under state-ownership and state-control.**
    ✓ **The National Planning Committee was set up** under the Chairmanship of Pt. Jawahar Lal Nehru. It is in this session where his ideological differences with Gandhiji emerged.
  o **In 1939 at Tripuri session, he was again elected as the President defeating** Pattabhi Sitaramayya who had been supported by Gandhiji himself. This was the first time when Gandhiji's authority had been challenged within the INC. Netaji did not want the national movement to look divided and preferred to withdraw.
  o **Then, he formed the All India Forward Bloc**, a faction within the INC aimed at consolidating the political left. However, he was **expelled from the INC** because of his extreme left, anti-imperialist stand**.**
- **His exile from India**
  o Alarmed by Netaji's radical activities the **British Indian Govt put him under house arrest**.
  o Netaji believed that India could not be liberated unless a military campaign was launched from outside India.
  o **He knew also that facilities could be obtained for such a campaign only from Britain's enemies** and not from Britain's allies during the course of World War II.
  o With these basic ideas, in 1942 **he made well his escape from India and proceeded first to Germany and thence to Japan.**
- **His military activities during World War II**
  o After reaching Germany in 1942, he started '**Azad Hind Radio' and established 'Free India Centre'** (a precursor of the Azad Hind Government)**.**
  o He arrived in Singapore in July 1943 and **took charge of the Indian National Army (INA) or Azad Hind Fauj** and expanded it to three divisions. INA was established by Mohan Bose. Rash Behari Bose, a veteran nationalist exiled in Japan came to aide Netaji.

- o **In Singapore, he formed an Indian government-in-exile 'the Azad Hind Government'.** This provisional government also had its own currency, court, civil code, Army (the INA) and national anthem.
- o In 1943, as the Head of the State of the Provisional Government, **he declared war on Britain for the liberation of India**.
- o The INA under the clarion **call of "Chalo Delhi" reached Moirang in Manipur and shook the British confidence.**
    - ✓ **The INA was able to win back Rangoon, Imphal and Andaman and Nicobar Islands**.
    - ✓ Netaji renamed Andaman and Nicobar (A&N) Island as **Shaheed and Swaraj.** In 2018, the Ross Island, Neil Island and Havelock Island of (A&N) Islands were renamed as Netaji Subhas Chandra Bose Dweep, Shaheed Dweep and Swaraj Dweep respectively.
- o The great salutation every Army personnel uses today, **'Jai Hind', was coined by Netaji's aide Abid Hasan.**

How ideologies of Netaji Subhas Chandra Bose differed from the ideology of Gandhiji and Pt. Jawahar Lal Nehru?
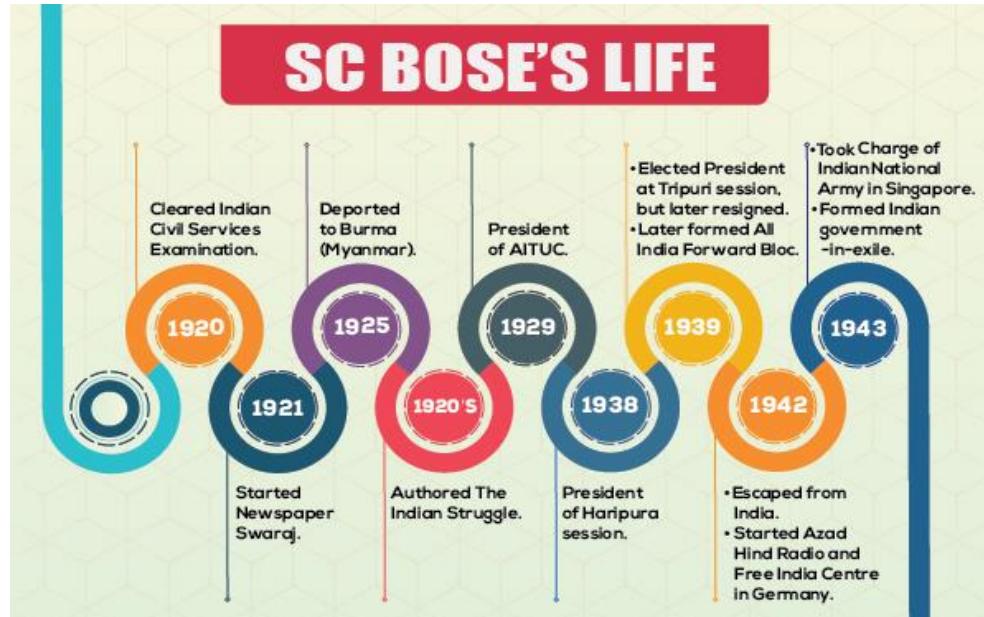
Netaji, despite his departure from congress, **saw his efforts and INA as complementing the mainstream freedom struggle** led by Gandhiji, Nehruji and the Congress. This was because **ideologically, he shared more similar values with both the leaders than their differences**

- • **Similarities in ideologies**
    - o **Their dedication to the national cause:** All had a vision of freeing India not only from British but also from social evils like castes, untouchability, poverty etc. They were loved by the masses and feared by the British Raj. Bhagat Singh wrote an article in 1928 titled *"NAYE NETAON KE ALAG-ALAG VICHAAR"* ('Varied thoughts of new leaders') in which he compared Nehruji and Netaji and hailed them as great patriots and rising stars of the freedom movement.

> **Netaji's ideology on socialism**
> - • **He was a socialist** who dissociated himself from communism.
>   - o Primary **distinction between communists and socialists** is their respective emphasis on internationalism vis a vis nationalism.
>   - o Netaji had ridiculed the internationalism of the communists and had disparaged them for attacking the concept of nationalism.
> - • **He wanted to promote collective affiliation of workers' and peasants' organisations** so that the state could act as the servant of the people.
> - • He wanted to **liberate people from all the forms of bondages.**

   - o **Liberal and believer in women's equality:** Netaji stood his ground against the conservative Japanese Generals and convinced them to let him build an all-women unit of INA, Rani of Jhansi Regiment. This regiment was led by Captain Lakshmi Sahgal. Gandhiji and Nehruji also worked for women empowerment including their work for ensuring quality education to women.
   - o **Shared the vision of unity in Diversity of the country:** All the three leaders respected cultural diversity of India including religious differences. Gandhiji incessantly worked against untouchability and for ensuring communal harmony. 'Jana-Gana-Mana' was chosen by Netaji because of its secular composition. Indian Constitutions is a testimony of Pt. Nehru's vision for India.
- • **Differences in ideologies**
   - o **Samyavad political system of Netaji**: Netaji wanted justice, equality, love, which are the basis of socialism to be combined with the efficiency and the discipline of Fascism. A fusion termed as Samyavad by him. Nehruji and Gandhiji did not endorse it due to their stern opposition to Fascism.
       - ✓ **Fascism is commonly associated with German Nazi and Italian regimes that came to power after World War I.** Fascism promoted the idea of a forcibly monolithic, regimented nation under the control of an autocratic ruler.
   - o **Netaji believed that non-violence could be an ideology but not a creed**: This is where he differed not only from Gandhiji but also from Nehruji. Netaji believed that the national movement should be free from violence but, if need be, people could resort to arms.
   - o **Netaji wanted the country to grow through industrialisation**. Gandhiji was against Industrialisation. Gandhi was in favour of the self-sufficient village economy. Nehruji shared same ideology with Netaji and he his ideals are reflected in the models of economic growth India chose post Independent.
   - o **His political objective was undiluted independence** and was not satisfied with Gandhiji's substance of independence. He preferred uncompromising national struggle as the means for attaining his objectives.

In spite of all the differences in ideologies, they admired and respected each other. After Netaji's death Gandhiji called him "the Prince among the patriots" and one whose "patriotism was second to none." Netaji in a radio broadcast from Rangoon in 1944, **called Mahatma Gandhi "The Father of Our Nation."** When captured officers of INA were being tried for treason by the British in late 1945, **Nehruji was among the four lawyers who defended them in court.**

SC BOSE'S LIFE

1920 Cleared Indian Civil Services Examination.

1921 Started Newspaper Swaraj.

1925 Deported to Burma (Myanmar).

1920'S Authored The Indian Struggle.

1929 President of AITUC.

1938 President of Haripura session.

1939 • Elected President at Tripuri session, but later resigned. • Later formed All India Forward Bloc.

1942 • Escaped from India. • Started Azad Hind Radio and Free India Centre in Germany.

1943 • Took Charge of Indian National Army in Singapore. • Formed Indian government –in–exile.

8.3. PRABUDDHA BHARAT JOURNAL

Why in News?

Recently, Prabuddha Bharata' journal celebrated its 125th anniversary.

About Prabuddha Bharata

- **Prabuddha Bharata** or **Awakened India** is an **english-language monthly journal** of the **Ramakrishna Mission**.
- Prabuddha Bharata **was founded in 1896** by P. Aiyasami, B. R. Rajam Iyer, G. G. Narasimhacharya, and B. V. Kamesvara Iyer, in Madras (now Chennai), at the behest of Swami Vivekananda.
- It is the **"longest-running" monthly English magazine of the country**.
- It carries articles on social sciences and humanities comprising historical, psychological, cultural and social sciences themes.
- Luminaries like **Netaji Subhas Chandra Bose, Bal Gangadhar Tilak, Sister Nivedita, Sri Aurobindo, Sarvepalli Radhakrishnan etc.** wrote in the journal.
- Other publications from Ramakrishna mission:
  o **Udbodhan, Bengali Monthly** started by Swami Vivekananda in January 1899,
  o **Vedanta Kesari** is cultural and spiritual magazines in English. It was started in 1914
- **Sri Ramakrishna Vijayam**, the Tamil monthly magazine started in 1921

About Ramakrishna Mission
- Ramakrishna Mission was **founded near Calcutta (now Kolkata) by Vivekananda in 1897** with a twofold purpose:
  o to spread the teachings of Vedanta as embodied in the life of the Hindu saint Ramakrishna (1836–86) and
  o to improve the social conditions of the Indian people.
- It is a **philanthropic and volunteer organisation.**
- **Mission Motto** is Atmano Mokshartham Jagad Hitaya Cha, **"For one's own salvation and for the welfare of the world".** It was formulated by Swami Vivekananda.
- Organization is based on the three core ideals**: Work as worship, potential divinity of the soul, and harmony of religions**.

8.4. INCLUSION OF INDIGENOUS SPORTS IN KHELO INDIA YOUTH GAMES 2021

Why in News?

Recently, Sports Ministry has approved the inclusion of four Indigenous Games to be a part of Khelo India Youth Games (KIYG) 2021. The games include: Gatka, Kalaripayattu, Thang-Ta and Mallakhamba, along with Yogasana.

More in News

- KIYG is a **part of the revamped national programme for development of sports 'Khelo India'** which was approved by the Union Cabinet in 2017.
- **Khelo India programme has been introduced to revive the sports culture in India** at the grass-root level by building a strong framework for all sports played in our country and establish India as a great sporting nation.

FOUR INDIGENOUS GAMES

KALLARIPAYATTU

- It is the martial art form of Kerala.
- Kalaripayattu has different techniques like meipayattu (physical body exercise), vadipayattu (fight using sticks), valpayattu(fight using swords) and verumkaiprayoga (bare hand exercise).
- Another focus of Kalaripayattu is specialisation in indigenous medicinal practices.
- Kalari treatment (a system of medicine) is a part of the curriculum

- Mallakhamb is a traditional sport of India in which a gymnast performs
- Aerial yoga and wrestling on hanging wooden poles, cane or hanging rope.
- There are various types of mallakhamb like mallakhamb on cane, niradhar (supportless) mallakhamb, pole mallakhamb, hanging mallakhamb and rope mallakhamb.
- It is the state sport of Madhya Pradesh.
  The origin of Mallakhamb can be traced to the 12th century, where it is mentioned in "MANASOLHAS", a classic by Chalukya in 1135 A.D.

MALLAKHAMB

GATKA

- It is a style of fighting with wooden sticks that originated in Punjab in the 15th Century.
- It is stick fighting between two or more practitioners, with wooden sticks called Soti, which is intended to simulate swords.

THANG TA

- It is a Manipuri martial art, also called the Art of the Sword and Spear.
- It is dedicated to fighting skill and worship.
- It integrates various external weapons - the sword, spear, dagger etc. with the internal practice of physical control that involves breathing methods, meditations, and rituals.

9. ETHICS

9.1. LAW AND LIBERTY

Introduction

In the general parlance, liberty and law are seen as opposite forces where law restricts the extent of liberty and liberty continuously pushing the boundaries of the law. But are they always antithetical to each other? When do they operate in harmony and when in opposition? How can their opposition be resolved and what should be the way forward?

What is a law and liberty and how do they interact?

Broadly, law is the **set of rules and regulations which enables effective functioning of society by upholding its collective value system**. For example, a society which values gender equality will translate this idea into a law that prescribes penalization of gender discrimination.

In other words, a law can be understood as a **codification of collective ethics of society**. Liberty, on the other hand, **broadly refers to the idea or state of being free** and being able to act in accordance with one's wishes. For example, an Indian citizen has the liberty to reside in any part of the country.

> **Positive Liberty:** It is the possibility of acting — or the fact of acting — in such a way as to take control of one's life and realize one's fundamental purposes.
>
> **Negative Liberty:** It is the absence of obstacles, barriers or constraints for a particular action.

But the idea of freedom which constitutes the crux of **liberty is in some or the other way part of the societal value system.** The idea of liberty and conception of a law both have their basis in the value of system of the society.

Every **value system remains in continuous flux and so does the idea of liberty in that society.** This is unlike a **law which remains static unless actively amended**. This creates a scenario where there is continuous interaction between a law, extent of societal allowance for liberty and individual liberty. For example, before decriminalization of homosexuality in India, **section 377 of IPC law was at variance with liberty of the individual**. At the same time, studies suggest that for **more than 50 percent of India's population still consider homosexuality as a taboo.**

Does the idea of individual liberty influence the lawmaking process? If yes, then how?

As can be seen from above, both liberty and law have their core in the prevalent ethical framework of the society. This **common core** leads to influence of liberty on law in following ways-

- **Influence through the constitutional pathway:** Our constitution upholds the Liberty as a part of basic structure and as a consequence, it becomes fundamental to law making process. For example, the laws that are blatantly antithetical to individual liberty are termed as unconstitutional and thus get repealed.
- **Civil society vigilance on restriction to liberties:** Any law which seems to unreasonably restrict individual liberty, faces active opposition in the form of protests and/or non-compliance. For example, the law barring widow remarriage in

> **Law, liberty and India's Constitution**
>
> Liberty serves as a key value in India's constitution. This can be **clearly inferred by the text of the preamble** which states that people of India enjoy liberty of thought, expression, belief, faith and worship.
>
> With regard to enforceability of one's liberty, in India **Fundamental Rights of the individual serve as the barometer for the extent of liberty available to the individual**. For example, liberty granted in Article 21 of the Constitution entails that a person can go out of the country at will, but this is subject to the reasonable restrictions documented in the Article.

India faced opposition from several sections and was ultimately amended.
- **Democratic nature of the Government:** The prevalence of democracy creates an indirect pressure on the political representative to align laws with collective will of the people. This ensures that altering the status of societal liberty can entails political costs for the ruling dispensation.

On the other hand, what are the potential impacts a law can have on exercise of liberty?

- **Balancing individual liberty and collective needs:** Exercise of liberty, although key to experience of freedom and personal growth, cannot be absolute in nature. The exercise of liberty does not happen in a vacuum but

in the context of society, where needs of multiple individuals are to be satisfied. Thus, in many cases individual liberty has to be restricted in order to ensure collective good. For example, restricting freedom of movement in border areas restricts movement but is essential to protection of National Security.

- **Acting as a catalyst to liberty:** Law, in many cases, provides the requisite framework for the individual to exercise his/her liberty, especially when the societal conditions are not conducive to exercise of such liberty. For example, the Abolition of Sati law encouraged individual liberty of women despite the overall societal sentiment being against it. This idea operates on the basis of the notion of positive liberty.
  - o In this sense, **law can act an agent of reform** and make societal value system more progressive.
  - o Also, law creates a **punitive mechanism for enforcement of legitimate rights and liberties** in a society.
- **Acting as a hinderance to liberty:** While balancing individual liberty and collective needs of society, institutions tend to interfere and unreasonably restrict the individual freedom thus creating hindrance to exercise of individual liberty.
  - o In this case, the law will be restricting freedom of choice and make societal value system more regressive.

How can a potential contradiction between law and liberty be resolved?

Since there is a perennial debate on several issues from preventive detention to restriction on food choices. The question here becomes on what basis we can decide- "what is a reasonable restriction on liberty" and "what constitutes unnecessary interference."

In this context, Supreme court in its proceedings of the Right to Privacy judgement provided a framework to ensure that the restrictions on liberty are minimum, namely, Doctrine of Proportionality. The doctrine states that-

- **Legitimate state aim:** The doctrine states that any restriction proposed by the state cannot be arbitrary I.e., it should be based on a legitimate state aim.
- **Relationship between the restriction and the aim:** There needs to be a rational nexus between the liberty which has been restricted and aim of the state.
- **Least restrictive method:** The restriction that is imposed needs to be least restrictive method needed for achieving the desired aim.
- **Balance between the restriction of liberty and overall benefits:** There must a balance between the extent to which rights are infringed and the public benefit to be attained from the legislation.

For instance, if a country introduces conscription policy, first it needs to be examined does it have a legitimate aim? Say, the country is at war, which provides it a legitimate aim. Secondly, does the restriction and aim have a relationship? Yes, conscription will increase the strength of the armed forces needed in a war. Thirdly, is conscription the least restrictive method? Here other options available to the country are to be analyzed. Finally, it needs to be examined that does the restriction on individual liberty (through conscription) of all citizens proportionate with objective of the war.

What can be done to avoid such a contradiction in the first place?

- **Making the legislative process more participatory and inclusive:** Making the legislative process more participatory and inclusive increase the overall acceptance for laws on the one hand and on the other, diverse participation will be improve the quality of legislation. This process will ensure that the doctrine of proportionality is followed by the state.
- **Regular updation of laws:** One of the primary reasons for a contradiction between laws and liberty is the obsolete nature of laws. For example, Section 377 of IPC, Section 497 of IPC etc., although antithetical to the prevalent value system, remained in use due absence of methodology for regular updation of laws.
- **Encouraging empathy among citizens:** A law is universal in nature, but the contexts in which the individuals operate are different. Thus, every individual may perceive the differently. In this context, empathy for diverse situations among citizens will help reaching a common ground without generating discontent from significant section of the population.

Conclusion

In the contemporary world liberty is important for individuals but this freedom is subjective, depending upon the socio-economic context of the society. The subjectivity associated with the idea may restrict the notion of liberty. But this restriction needs to pass the test of reasonableness, keeping in mind that in the long-term, efforts should be made minimize the occurrence of such contradictions.

10. GOVERNMENT SCHEMES IN NEWS

10.1. PRADHAN MANTRI KAUSHAL VIKAS YOJANA (PMKVY 3.0)

Why in news?

The third phase of Pradhan Mantri Kaushal Vikas Yojana (PMKVY 3.0) was launched by Ministry of Skill Development and Entrepreneurship (MSDE)

Background

- The **first version PMKVY scheme was launched in 2015** to encourage and promote skill development in the country by providing free short duration skill training and incentivizing this by providing monetary rewards to youth for skill certification. The overall idea was to boost employability of youth corresponding to the industrial demand.
  - o It aimed at training **24 lakh people** with monetary reward of INR 8000 for each successful trainee.
  - o It was successful in training **19.85 lakh** candidates.
- PMKVY 2.0 (2016-20) was **launched by scaling up sectors, geographies and by greater alignment with other missions / programs of Government of India** such as 'Make in India', 'Digital India' and 'Swachh Bharat Mission'.
  - o The scheme has been extended for one year for skilling of migrant workers

Objectives	Key Features

• Create an ecosystem for the **youth to make informed choices on the available skilling avenues.**
• Provide support to youth for **skill training and certification.**
• Promote **sustainable Skill Centres** for greater participation of private sector.
• **Benefit 8 lakh youth** over the scheme period (2020-21).
	• The basic premise for the scheme is **to create skilled and certified workforce, who not only contribute towards the growth of India but also drive the country into becoming the global skills capital.**
	• **Core principles of the scheme**
	  o **Major focus on up-skilling / re-skilling with a focus on future skills** (industry 4.0) courses to increase productivity of existing workforce.
	  o **Provision of add-on bridge courses and language courses** for making scheme compatible internationally, to provide international employment opportunities to the Indian youth.
	  o **Focus on Online / Digital mode of Training for wider coverage**.
	  o **Planning from below**, with District-level plans being the fundamental instruments for implementation
	  o **Skill gap survey and analysis on a continuous basis** to address the industry needs and contemporary market demand.
	  o **Private sector participation in the PMKVY 3.0** to be further encouraged with a greater focus on training in industries.
	  o **Greater cross utilization of available infrastructure** with Universities / Colleges / ITIs /Polytechnics / Schools.
	  o **Preferential target allocation** shall be done for Aspirational, Left-wing Extremism (LWE), North Eastern Regions (NER), Hilly Regions and any other focused districts / regions as identified by the Government of India
	  o **Providing monetary reward to youth** post skill certification
	  o PMKVY 3.0 shall also **aim for phase-wise introduction of vocational courses in school curriculum** in coordination with Ministry of Education (MoE) through technical support under the scheme.
	• **Training Target:** PMKVY 3.0, being a demand-driven scheme, training target may be dynamically fixed as per recommendations of Steering Committee.
	  o A Steering Committee shall be constituted by MSDE, at the apex level, for broad policy direction.
	• **Implementation Structure:** This scheme will have two components:
	  o **Centrally Sponsored Centrally Managed (CSCM)** known as the Central Component to be implemented by the National Skill Development Corporation (NSDC).
	  o **Centrally Sponsored State Managed (CSSM)** known as the State Component to **be implemented by the State Skill Development Missions (SSDMs) / respective Departments of the States / UTs.**

	- **Components of the Scheme:**
	   ○ **Short Term Training (STT):** STT is imparted to **school/college dropouts or unemployed.**
	     ✓ Training is carried out according to the **National Skills Qualification Framework (NSQF).**
	     ✓ Successfully certified candidates shall be provided placement /entrepreneurship / apprenticeship assistance.
	   ○ **Recognition of Prior Learning (RPL):** Individuals with **prior learning experience or skills** are **assessed and certified** under this component
	     ✓ It aims to **align the competencies of the unregulated workforce** of the country to the NSQF.
	   ○ **Special Projects:** This component is meant for projects that require some deviation from the terms and conditions of Short-Term Training under PMKVY depending on special needs in terms of geography, demography and social groups.
	- **Branding:** It aims to ensure greater visibility and accurate communication of scheme.
	- **A candidate may enroll not more than twice for training under PMKVY** in the same sector (the second time to be for a higher NSQF aligned job role only), or, for a fresh training of a different course in the scheme.
	- **Unspent balance of PMKVY2.0,** may be **utilized for PMKVY3.0.**

11. NEWS IN SHORT

11.1. SEVENTH TRADE POLICY REVIEW (TPR) OF INDIA AT THE WTO BEGINS

- TPR involves a comprehensive peer-review of the Member's national trade policies. This **facilitates the smooth functioning of the multilateral trading system** by enhancing the transparency of Members' trade policies.
  - India's last TPR took place in 2015.
- **Highlights of the review**
  - It was noted that **strong economic growth led to an improvement in socio-economic indicators**, such as per-capita income and life expectancy in India.
  - India's trade policy remained largely unchanged. India continues to **rely on trade policy instruments such as the tariff, export taxes**, minimum import prices, import and export restrictions, and licensing.

Trade-facilitation initiatives introduced	**Simplification of procedures and customs clearances** for imports and exports. - Indian Customs Electronic Gateway (ICEGATE). - Single Window Interface for Facilitation of Trade (SWIFT). - Direct Port Delivery and the Direct Port Entry facilities. - increased use of the Risk Management System (RMS)
For domestic production and exports	India provided **a number of incentives, in the form of direct subsidies and price support schemes**, tariff concessions or exemptions, or preferential rates of interest.
Concerns raised	**Frequent use of trade policy measures to encourage domestic production** and curb inflation lead to India's average tariff increased to 14.3% in FY21 from 13% in FY15. **In agriculture there must not be a 'stop and start'** (banning the export when produce is in short supply and liberalizing when in surplus) **policy on agricultural products** because that prevents farmers from taking objective decisions on sowing different crops

11.2. DAVOS AGENDA AND GREAT RESET INITIATIVE

- Recently, Prime Minister addressed the World Economic Forum's (WEF) Davos Agenda.
- Davos Agenda is **mobilization of global leaders to shape principles, policies and partnerships needed in the challenging new context** demonstrated by COVID-19.
- **7 key themes of agenda are:** How to Save the Planet, Fairer Economies, Tech for Good, Society and Future of Work, Better Business, Healthy Futures and Beyond Geopolitics (collaborating globally).
- Davos Agenda **also launched WEF's Great Reset Initiative.**
- **Great Reset Initiative** aims to **jointly and urgently build the foundations** of global economic and social system **for a more fair, sustainable and resilient future.**
- **It has 3 components:**
  - **Steer the market toward fairer outcomes:** Governments should improve coordination (for example, in tax, regulatory, and fiscal policy), upgrade trade arrangements, and create the conditions for a stakeholder economy.
  - **Investments in advance shared goals**, **such as equality and sustainability**: to create a system that is more resilient, equitable, and sustainable in the long run e.g., building "green" urban infrastructure.
  - **Harness innovations of the Fourth Industrial Revolution** to support the public good, especially by addressing health and social challenges.

World Economic Forum
- It is **an international not-for-profit foundation organization** committed to improving the state of the world by engaging business, political, academic and other leaders of society **to shape global, regional and industry agendas.**
- It was established in 1971 **and is headquartered in Geneva, Switzerland.**
- **Publications**: Global Risk Report, Global Gender Gap Report, Global Competitiveness report.

11.3. HENLEY PASSPORT INDEX 2021

- Henley Passport Index is the **ranking of all the world's passports according to the number of destinations their holders can access without a prior visa.**
- Ranking is **based on exclusive data from the International Air Transport Association (IATA)** and ranks 199 passports in total.
  - IATA maintains the world's largest and most accurate database of travel information.
- **Japan ranks first** on the index with passport holders able to access 191 destinations around the world visa-free.

- o **India ranks 85th and Indian** passport holders able to access **58 destinations** around the world visa-free.

11.4. VARIOUS REPORTS RELEASED BY UN BODIES

Report	Key findings/ suggestions
'World Economic Situation Prospects' report released by United Nations Department of Economic and Social Affairs (UN DESA), in partnership with the United Nations Conference on Trade and Development (UNCTAD)	- The pandemic and shutdowns **affected more than four out of five jobs worldwide.** - With the crisis accelerating the pace of digitization and automation, **millions of jobs lost in 2020 will not come back.** **Devastating socio-economic impact of the Covid-19 pandemic will be felt for years** to come unless smart investments in economic, societal and climate resilience ensure a robust and sustainable recovery of the global economy. - Central banks around the world **injecting massive amount of liquidity and keeping long-term interest rates low may create a massive financial bubble**, which may exacerbate financial instability. - Growing concerns for fiscal deficits and debt sustainability **should not push Governments towards austerity** as cut back on social sector spending (health and education etc.) will have far-reaching consequences for many SDGs. **New technologies, accelerating the pace of digitalization and automation, are redefining comparative advantages** in global trade by facilitating scale-independent efficient production and bringing production systems closer to consumers.
'World Economic Outlook' Report update released by International Monetary Fund	**Global economy is projected to grow 5.5% in 2021** and 4.2% in 2022. **India's FY 22 growth, is shown to be 11.5%.** **Global economy is set to expand at a faster rate this year** than expected earlier as vaccination against the coronavirus could strengthen activity later this year, underpinned by further policy support. **Report called for Strong multilateral cooperation, ensuring adequate access to international liquidity for low-income developing economies,** funding for the COVAX facility to accelerate access to vaccines for all countries etc.
Global Investment	**Global FDI collapsed in 2020, falling by 42%** to an estimated $859 billion,
Trend Monitor released by UNCTAD	from $1.5 trillion in 2019. Decline was **more in developed countries**. • **FDI in India rose by 13% in 2020** boosted by digital sector.

11.5. WORLD ECONOMIC FORUM (WEF) RELEASES GLOBAL RISKS REPORT 2021

- Report **highlights disruptive implications of major risks,** including COVID-19, that may reshape our world in 2021 and over the next decade**.** It explores how countries and businesses can act against these risks.
- **Key findings**
  - o **Infectious diseases** followed by climate action failures are the biggest global risk for the coming decade.
  - o **Economic fragility and societal divisions are set to increase.** This is because underlying disparities in healthcare, education, financial stability and technology have led COVID-19 crisis to disproportionately impact certain groups and countries.
  - o **Growing digital divides and technology adoption pose concerns** which are further accelerated by COVID-19.
  - o **Economic fragility and long-term health impacts caused by the COVID-19 pandemic** will continue to have devastating consequences.
- **Response to COVID-19 offers four governance opportunities** to strengthen overall resilience of countries, businesses and international community:
  - o Formulating **analytical frameworks that take a holistic and systems-based view of risk impacts**.
  - o **Investing in high-profile risk champions** to encourage national leadership and international co-operation.
  - o **Improving risk communications** and combating misinformation.
  - o Exploring **new forms of public-private partnership** on risk preparedness.

11.6. FINANCIAL STABILITY REPORT (FSR)

- It is a biannual report released by Reserve Bank of India.
- FSR reflects the **risks to financial stability, and the resilience of the financial system** in the context of contemporaneous issues relating to development and regulation of the financial sector.
- **Key highlights**

Performance parameters	Findings
• **Capital to risk-weighted assets ratio (CRAR):** Also known as Capital Adequacy Ratio (CAR), it is the ratio of a bank's capital in relation to its risk weighted assets and current liabilities. **Basel III norms stipulated CRAR 8%.**	• **CRAR) of Scheduled Commercial Banks (SCBs) improved to 15.8% in September 2020** from 14.7%in March 2020.
• **The gross non-performing asset (GNPA) ratio:** A non performing asset (NPA) is a loan or advance for which the principal **or interest payment remained overdue for a period of 90 days.**	• **GNPA ratio of the SCB declined to 7.5% from 8.4%. The GNPA ratio of all SCBs may increase to 13.5% by September 2021** under the baseline scenario and up to 14.8% under a severe stress scenario.
• **Provision coverage ratio (PCR):** Banks are required to set aside a portion of their profits as a provision against bad loans. This is called PCR. **A high PCR ratio** (ideally above 70%) means most asset quality issues have been taken care of and **the bank is not vulnerable.**	• **PCR improved to 72.4%** from 66.2%.
• **Sovereign debt: Sovereign debt** refers to the financial liability of the **government** of a **sovereign** nation to its foreign and domestic creditors • **crowding out:** opportunity of borrowing (from banks) for private sector is reduced due to dominance of the government,	• **The expansion in the market borrowing programme of the government due to revenue shortfall** has imposed additional pressures on banks. o Also **it is increasing sovereign debt to levels that have intensified concerns relating to sustainability with crowding out**

11.7. TRADE INTENSITY INDEX

- Trade Intensity Index (TII) is defined as the **share of one country's exports going to a partner divided by the share of world exports going to the same partner.**
- TII is used **to determine whether the value of trade between two countries is greater or smaller than would be expected** on the basis of their importance in world trade.

- o An index of more (less) than one indicates a bilateral trade flow that is larger (smaller) than expected, given the partner country's importance in world trade.
- Share of one country's exports to its partner **should be at least equal to the share of world exports to the same partner** for an expected bilateral trade flow.
  - o Otherwise, it means that the country fails to exploit the market in its partner country and there is scope for expansion of its exports trade in the partner country.
- As global trade is poised for a rebound in 2021, **India needs to adopt a clear strategy to improve its TII**.
  - o India's trade intensity **has weakened since the Great Recession of 2008-09,** and Indian exports have fallen in three of the last six years.

11.8. LIGHT HOUSE PROJECTS (LHPS)

- **LHPs under Global Housing Technology Challenge-India (GHTC-India)** will be constructed at six sites across six States.
  - o GHTC-India under **Ministry of Housing and Urban Affairs** intends to get the best globally available innovative construction technologies through a challenge process.
- LHPs are **model housing projects with houses built with shortlisted alternate technology** suitable to the geo-climatic and hazard conditions of the region.
  - o It will **demonstrate and deliver ready to live houses at an expedited pace within twelve months**, as compared to conventional brick and mortar construction.
  - o It will be **more economical, sustainable**, high quality and durability.
- **Features**
  - o Sustainable housing considering **local climate and ecology.**
  - o **14-storey towers will be built** with a total of 1,040 flats are to be built.
  - o Houses built will be completely earthquake resistant as they will be durable and environmentally friendly due to the use of **pre-fabricated materials, Monolithic Concrete Construction, Precast Concrete Construction System etc.**
- **Affordable housing is fundamental to the health and well-being of people** and to the smooth functioning of the economy.
  - o Earlier, govt had also approved development of affordable rental housing complexes (ARHCs) for urban migrants and poor as a sub-scheme under the Pradhan Mantri Awas Yojana (Urban).

11.9. MILITARY EXERCISES

- **Exercise Kavach:** It is a joint Military exercise involving assets of **Indian Army, Indian Navy, Indian Air Force and Indian Coast Guard.**
- **Desert Knight-21:** It is a bilateral Air exercise **between Indian Air Force and French Air and Space Force.**

11.10. AKASH-NG MISSILE

- Recently, **Defence Research and Development Organisation (DRDO)** successfully conducted the maiden test of the New Generation Akash missile (Akash-NG).
- Akash-NG is a **new generation Surface to Air Missile meant for use by Indian Air Force** with an aim of intercepting high manoeuvring low RCS (Radar Cross Section) aerial threats.

11.11. ASMI
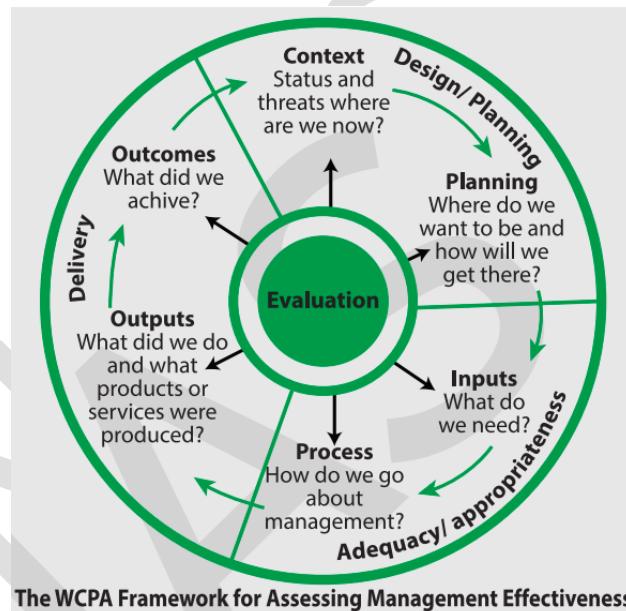
- It is India's **first indigenous 9mm Machine Pistol** that has been jointly developed by DRDO and Indian Army.
  - **3D Printing process has been used** in designing and prototyping of various parts.
- It can be used as **personal weapon for heavy weapon detachments, commanders, tank and aircraft crews,** drivers/dispatch riders, radio/radar operators, Closed Quarter Battle etc.

11.12. MANAGEMENT EFFECTIVENESS EVALUATION (MEE)

- Recently MEE report of 146 National Parks, Wildlife Sanctuaries was released by MoEFCC.
- MEE is **assessment of how well National Park and Wildlife Sanctuaries (NP&WLS) are being managed**—primarily, whether they are protecting their values and achieving the goals and objectives agreed upon.
  - Assessment process of India's NP&WLS was adopted from **IUCN World Commission on Protected Areas (WCPA) framework of MEE (see Infographic).**
- **MEE can**
  - Enable and **support an adaptive approach to management**
  - Assist in **effective resource allocation**
  - Promote **accountability and transparency**
  - Help **involve the community and build constituencies**
  - Promote the **values of NP&WLS.**
- MEE is increasingly being **used by governments and international bodies to understand the strengths and weaknesses of the PA management systems**.

- **Highlights of the report**
  - The **overall mean MEE score is 62.01% which is higher than the global mean of 56%.**
  - Rating-wise, 13% PAs are in 'very good' category, 52% PAs are in 'good' category, 29% PAs in 'fair' category and only 6% PAs have been rated in 'poor' category.
  - Tirthan Wildlife Sanctuary and Great Himalayan National Park, Himachal Pradesh rated with the **highest MEE score**
  - Turtle WLS, UP and khaparwas WLS, Haryana **ranked at the bottom**.

The WCPA Framework for Assessing Management Effectiveness

11.13. CLIMATE ADAPTATION SUMMIT (CAS) 2021

- CAS 2021 **was hosted online by Netherlands** and convened global leaders and local stakeholders.
- **It aims to to accelerate, innovate, and scale up the world's efforts in adapting to the effects of climate change**.
- CAS 2021 is set to **deliver an Adaptation Action Agenda** as a roadmap for a decade of transformation towards a climate-resilient future by 2030.
- Prime Minister, in his addressed to CAS 2021 said that by year 2030, India will target 450 gigawatt of renewable energy capacity, and will also restore 26 million hectares of degraded land.

11.14. GLOBAL CLIMATE RISK INDEX

- It has been released by Germanwatch (an NGO based in Germany).
- Index analyses to what extent **countries and regions have been affected by impacts of weather-related loss events** (storms, floods, heat waves etc.).

- **Key Highlights**
  - **India was the seventh worst-hit country due to extreme weather** events in 2019 (Mozambique is the worst-affected).
    - ✓ India had a high **number of fatalities and the biggest economic loss** in 2019.
    - ✓ **Flooding caused by heavy rain was responsible for 1,800 deaths** and led to the displacement of 1.8 million people.
    - ✓ There were **eight tropical cyclones in India**. Six of them were "very severe.
  - **No country can escape the extremities of weather**, irrespective of its geographical location.
  - **Poorer countries are hit hardest** due to more vulnerability to damaging effects of hazard and lower coping capacity.

11.15. SAATHEE PORTAL LAUNCHED

- SAATHEE (State-wise Actions on Annual Targets and Headways on Energy Efficiency) – A portal for State Designated Agency for state level activities **was launched by Ministry of Power**
- It is a Management Information System (MIS) portal which is **developed by Bureau of Energy Efficiency (BEE) to facilitate real-time monitoring** of the progress of implementation of various energy conservation endeavours at state level.

About BEE
- BEE is a **statutory body under Ministry of Power.**
- It is mandated to assist in developing policies and strategies with a **thrust on self-regulation and market principles** with the primary objective of reducing energy intensity of the Indian economy within the overall framework of the **Energy Conservation Act, 2001.**

11.16. SAKSHAM (SANRAKSHAN KSHAMTA MAHOTSAV)

- It is a is a **campaign organised by Petroleum Conservation Research Association (PCRA) to sensitize the masses about conservation and efficient use of petroleum products** which will lead towards better health and environment.
  - It will convince consumers to **switch to cleaner fuels** and **bring in behavioral change** to use fossil fuel and involving pan-India activities such as **cyclothon, farmer workshops, CNG vehicle** driving contest etc.

About PCRA
- It is a **registered society set up under Ministry of Petroleum & Natural Gas.**
- It is engaged in **promoting energy efficiency in various sectors of economy and environment protection** leading to improvement in quality of life.

- It helps the government in **proposing policies and strategies for petroleum conservation** thus **reducing excessive dependence** of the country on oil requirement.

11.17. ENVIRONMENTAL IMPACT OF CEMENT PRODUCTION

- **Limestone ($CaCO_3$) which is used for cement manufacturing is calcinated at high temperatures** in cement kilns to produce lime (CaO), which **leads to the release of Carbon Dioxide**.
  - The amount of CO_2 emitted by the cement industry is nearly 900kg of CO_2 for every 1000kg of cement produced.
- The exhaust gases from a cement kiln also contains other **greenhouse gases such as** nitrogen oxides (NOx), water, carbon monoxide etc
  - It is estimated that **5-6% of all carbon dioxide greenhouse gases generated by human activities originates from cement production.**
- The emissions from **fuels needed to mine and transport the raw materials** as well as **fuel used for electricity production for operating other process** in cement manufacturing.
- Air and noise emissions during the manufacture of cement.

Measures to reduce environmental impact of cement production

- **Alternative binding materials** to reduce cement production emissions, particularly process emissions.
- **Improving energy efficiency, switching to lower-carbon fuels a**nd advancing process and technology innovations.
- **Optimise the use of cement** would help reduce demand along the entire construction value chain, helping to cut CO_2 emissions from cement production.
- **Deploying innovative technologies including Carbon Capture Utilisation and Storage (CCUS)** can reduce CO_2 emissions particularly the process emissions released during Limestone calcination.
- **Increased use of fly ash can help to reduce CO_2 emissions** through reduced fuel combustion and reduced limestone calcination.

11.18. HIGH AMBITION COALITION (HAC) FOR NATURE AND PEOPLE

- At one planet summit, HAC call onto all States to join it before 15th meeting of the Conference of the Parties to the Convention on Biodiversity (CBD COP 15) to be held in Kunming, China **(2021)**.
  - The coalition is aiming to ensure that **a new global framework to protect the Earth's**

natural systems, plants and animals be adopted at COP15

- The **High Ambition Coalition (HAC) for Nature and People, formed in 2019,** is an **interregional group** of **more than 50 countries** co-chaired by **Costa Rica, France and the United Kingdom**.
- The key goals of HAC are:
  - o Increased spatial targets to protect or effectively conserve at least **30% of the planet (land and sea) by 2030**, i.e., **30x30 approach.**
  - o Effective **management** of **protected and conserved** areas
  - o Increased **public and private financing** to ensure long-term management and local governance,
  - o Clear implementation mechanisms to put **nature on a path to recovery by 2030.**

One Planet Summit

- It is an event which brings together **governments, international organizations, businesses and NGOs** for **preservation** of **biodiversity**.
- It has been co-organized by **France, United Nations and World Bank** since **2017**.
- Summit in 2021 had 4 major themes:
  - ✓ Protection of Terrestrial and Marine ecosystems
  - ✓ Promotion of agro-ecology
  - ✓ Mobilization of funding for biodiversity
  - ✓ Deforestation and human health

11.19. RED PANDA

- Scientists from the Zoological Survey of India (ZSI) have concluded that **India is home to both the subspecies of Red Panda, Himalayan red panda and the Chinese red panda,** and the **Siang river in Arunachal Pradesh** splits the red panda into these two subspecies.
  - o They have countered a Chinese study published in February 2020 which claimed that the CRP is not present in India.
- **About Red Panda**
  - o Red pandas are elusive and rarely-seen m**ammals found in the mountain forests of Nepal, India, Bhutan, China and Myanmar**.
  - o In India, it is found in **Sikkim, western Arunachal Pradesh, Darjeeling district of West Bengal and parts of Meghalaya.**
  - o It is **also the state animal of Sikkim**.
  - o It is **classified as a carnivore but mainly eat bamboo leaves.**
  - o These animals spend most of their lives in trees and even sleep aloft. When foraging, they are most active at night as well as in the gloaming hours of dusk and dawn.
  - o **IUCN status:** Endangered

- o **Wildlife (Protection) Act, 1972:** Schedule I
- o **Threats:** Habitat fragmentation and degradation; Predation by feral dogs; hunting and poaching
- o Red panda has lost 50% of its population in the last 20 years and now only 2500 individuals survive in the wild in India, China, Tibet, Nepal, Myanmar and Bhutan.

11.20. NEW SPECIES DISCOVERED IN 2020

- Recently, hundreds of new species have been discovered across the world adding to the biodiversity**.**
- Around **503 new species** have been discovered in 2020 as identified by London's National History Museum.
- **Few New species found in India**
  - o **Fauna: Muduga Leaping Frog** (endemic to the Western Ghats); **Gunther's Wood Snake** (Tamil Nadu's Theni district); **Vaibhav's Protanilla, Ant species** (Goa's Netravali Wildlife Sanctuary); **South Asian Cnemaspis, Indian Gekkonoid** (Eastern Ghats, India); **Arunachal Pit-Viper Snake** (Arunachal Pradesh); **Schizothorax sikusirumensis, fish species** (discovered in Arunachal Pradesh); **Punitus Sanctus, freshwater fish** (Velankanni, Tamil Nadu)
  - o **Flora: Aloe Trinervis** (desert in northwestern India); **Bioluminiscient Mushroom phyllostachydis** (Meghalaya's Mawlynnong in East Khasi Hills district); **Eriocaulon parvicephalum and Eriocaulon karaavalense** (Western Ghats of India); **Portulaca laljii, Wild Sunrose** (Prakasam district of Andhra Pradesh).

11.21. NATIONAL BASELINE GEOSCIENCE DATA GENERATION PROGRAMMES (2020-2024) LAUNCHED BY GEOLOGICAL SURVEY OF INDIA (GSI)

To expedite exploration activities, GSI has embarked to cover following **National level surveys by 2024.**

- **National Geochemical Mapping (NGCM) is an all-India programme to cover entire surface area of the country by geochemical sampling.**
  - o **Uses:** For managing and developing natural resources; application in environmental, agricultural, human health, other social concerns and to search for hidden mineral deposits.
- **National Geophysical Mapping (NGPM) generates basic and derived maps of Bouguer (Gravity)**

Anomaly and International Geomagnetic Reference Field (IGRF) corrected magnetic total field maps of the country by conducting ground gravity and magnetic surveys.
o It provides stakeholders a **framework to design exploration strategies**.

- **National Aero Geophysical Mapping Program (NAGMP)** to **delineate concealed, deep seated structure/ litho-units capable of hosting mineralization**, delineate extension of the existing mineralized zone and understating of shallow crustal architecture in the context of mineral occurrence.

- GSI has also initiated its **flagship initiative of National Geoscience Data Repository (NGDR)** that **aims at integrating the collected data** by GSI and the similar organizations to build a repository on the digital medium entailing multiple user access.

- **Geological Survey of India** is an **attached office to the Ministry of Mines**.
- It was **set up in 1851** primarily to find coal deposits for Railways. Over the years, it has **attained the status of a geo-scientific organisation** of international repute.
- Its main functions relate to **creation and updation of national geo-scientific information and mineral resource assessment**.
- It is headquartered in **Kolkata.**

11.22. NATIONAL HUMAN RIGHTS COMMISSION (NHRC) RECOMMENDATIONS TO ERADICATE MANUAL SCAVENGING

- **Taking cognizance of false claims of zero manual scavenging made by many States,** NHRC has made following recommendations to the Centre to eradicate manual scavenging.
  o **Expand definition of manual scavenging to cover other types of hazardous cleaning** or enactment of a new law for hazardous cleaning.
  o Penal actions to **prevent discrimination and harassment faced by children of manual scavengers** and women manual scavengers.
  o Linking rehabilitation process to schemes under which they can immediately start earning like MNREGA.
  o **Increase one-time cash assistance** for rehabilitation **from ₹40,000 to ₹1 lakh** and it should be paid directly.
  o **Specify Nationalized Bank for each State** for extending loans to Manual Scavengers and their dependents to take up business Activity.
  o **Facilitate shift to use of technology** and training workers in operating technology.

o **Fixing accountability** on concerned authorities **for incorrectly reporting number of manual scavengers.**

For more details on Manual Scavenging refer November 2020 Current Affairs.

11.23. AGREEMENT FOR FINANCIAL SUPPORT TO STARS PROJECT

- Agreement was signed by **Ministry of Education (MoE)** with **Department of Economic Affairs (DEA) and World Bank.**
- **Strengthening Teaching-Learning and Results for States (STARS) project** would be implemented as a **Centrally Sponsored Scheme**.
  o **It covers 6 States:** Himachal Pradesh, Rajasthan, Maharashtra, Madhya Pradesh, Kerala and Odisha.
- Project cost is **shared between World Bank and participating states.** World Bank support is in form of a **results-based financing instrument called 'Program for Results' (PforR).**
  o Reforms at State level will be ensured through a **set of disbursement-linked indicators and a State Incentive Grant** to meet desired project outcomes.
- Project **has two major components:**
  o **At the national level, it envisages:**
    ✓ **Strengthening MoE's national data systems** to capture data on retention, transition and completion rates of students.
    ✓ Strengthening of **learning assessment systems.**
    ✓ **Establishing a National Assessment Center (PARAKH)** for continuous tracking of learning and data-driven decision making leading to examination reforms.
  o **At the State level, it envisages strengthening**
    ✓ **Early Childhood Education** and Foundational Learning.
    ✓ Classroom instruction and **Vocational education.**
    ✓ **Governance and decentralized management** for Improved Service Delivery.

11.24. LONGITUDINAL AGEING STUDY OF INDIA (LASI) WAVE-1, INDIA REPORT

- LASI is a full–scale national survey of scientific **investigation of the health, economic, and social determinants and consequences of population ageing in India.**

- It was released by Ministry of Health and Family Welfare.
- **Key Findings:**
  - Growing at around 3% annually, **number of elderly people (aged 60 years or above) will rise to 319 million in 2050** from 103 million in the 2011 census.
  - About **one in two elderly suffers from some chronic disease.** 27% elderly have multi-morbidities, around 40% have a disability and 20% have issues related to mental health.
  - People above 45 years in India have an **average per capita income of ₹44,901,** a third of them suffer from hypertension and cardiovascular diseases.
  - 78% of elderly are **neither receiving pension not expected to receive one.**
- **Findings of the report will assist in**
  - Framing national and state level **programmes and policies for elderly population**.
  - Addressing **aims of Decade of Healthy Ageing** (endorsed by World Health Assembly).
    - ✓ It **brings together governments, civil society, international agencies, private sector** etc for ten years of collaborative action **to improve lives of older people,** their families, and communities in which they live.

For more details on Elderly Population in India, refer October 2020 Current Affairs Magazine.

11.25. FAO'S FOOD PRICE INDEX (FPI)

- As per FPI of Food and Agriculture Organization (FAO), **world food prices rose for a seventh consecutive month** in December.
- FPI is a measure of the **monthly change in international prices of a basket of food commodities** that includes cereals, oilseeds, dairy products, meat and sugar.
- **FAO is a specialized agency of the United Nations** that leads international efforts to defeat hunger.
  - **It has more than 180 members (including India),** and is governed by the biennial FAO conference, in which each member country, as well as the European Union, is represented.

11.26. DARK MATTER NOT 'SUPER HEAVY' OR 'SUPER LIGHT'

- Scientists have **narrowed down the range of masses within which particles that could make up dark matter may lie** using Quantum gravity.
  - **Quantum gravity** is a combination of Einstein's concepts of quantum physics and general relativity and it **attempts to explain how**

gravity works on the universe's smallest particles.
- Research shows that the dark matter particles can neither be super light nor super heavy **unless there is a 'force acting on it that is yet unknown'.**
  - The research might help in finding out more about this mysterious force.
- **Dark matter and dark energy constitute 95% of the Universe**.
  - **Roughly 27% is dark matter** which is considered to be **responsible for holding the galaxies together**.
  - **Another68% of the Universe is believed to be made up of dark energy** which is responsible for the accelerated expansion of the Universe**.**
- Dark matter is **completely invisible to light and other forms of electromagnetic radiation**, making it impossible to detect with current instruments.
- However, its **gravitational effects are necessary to explain the motions** of clusters of galaxies and the structure of the entire Universe at the largest scale.

11.27. SATURN'S TILT

- A team of researcher reported that Saturn's axial tilt is **caused by the gravitational pull of Saturn's moons as they migrate away from their host planet.**
  - They also predict that the planet will keep tilting in the future for a few billion years.
- Saturn is the sixth planet from the Sun and the second largest planet in our solar system and is made mostly of hydrogen and helium.
  - Saturn's rings are thought to be pieces of comets, asteroids or shattered moons that broke up before they reached the planet, torn apart by Saturn's powerful gravity.
  - **Saturn** is the planets with most moons. **Titan is the largest moon of Saturn** and the second-largest natural satellite in the Solar System.
    - ✓ Jupiter's moon Ganymede is largest.
- Its **axis is tilted by 26.73 degrees with respect to its orbit around the Sun, which is similar to Earth's 23.5-degree tilt.** This means that, like Earth, Saturn experiences seasons.
  - Astronomers propose that earth's tilt is **due to energetic collisions between the 'planetessimals' which eventually coalesced to form the planets.**
    - ✓ Planetesimal, one of a class of bodies that are theorized to have coalesced to form Earth and the other planets after condensing from concentrations of diffuse matter early in the history of the solar system.

> **Missions to Saturn:**
> - **Pioneer 11, launched by NASA,** was the first spacecraft to study Saturn up close. The mission ended in 1995.
> - **Voyager 1 and 2, launched by NASA,** to conduct close-up studies of Jupiter and Saturn, Saturn's rings, and the larger moons of the two planets.
> - **Cassini probe** to explore Saturn's atmosphere, rings, magnetosphere, and moons**.**
>   - o It has successfully found geysers on Saturn's moon Eneladus, evidence that its moon Titan is Earth-like, and Saturn's rings are active and dynamic.

11.28. FIST PROGRAM

- The **FIST programme was launched in the year 2000 to strengthen science and Technology infrastructure** with adequate funding and associated flexibility.
  - o **Support is given for a period of 5 years** to any PG College or a department / centre / School of any University or academic Institute
  - o It is **considered for augmentation of post-graduate teaching and research facilities in four areas** i.e., Basic Equipment, Networking & Computational Facilities, Research Infrastructure and Maintenance of equipment.
  - o The **Scheme is for Improvement of S&T Infrastructure in the Department as a whole** and not for individual faculty.
- Government is also planning to orient it towards the goal of Atmanirbhar Bharat so as to create R&D infrastructure not only for experimental work but also to **cater to theoretical work, ideas and entrepreneurship**.
  - o This would **help Startups and industries** who get access to equipment and S&T infrastructure in different institutions, universities, and colleges spread all over the country to **carry out experiments and tests they require for their R&D, technology, and product development.**

11.29. AVIAN INFLUENZA (BIRD FLU)

- Central teams have been deployed to visit the affected states of Kerala, Haryana and Himachal Pradesh for monitoring and for epidemiological investigation.
- Bird flu, also called avian influenza, is **a viral disease which is contagious** and can spread from one bird to other birds and animals.
  - o **Migratory birds have been assumed to be largely responsible** for long-distance transmission of the virus into India.
  - o It also spreads through **local movement of residential birds and poultry.**

- It is **caused by Influenza Type A viruses which generally affect poultry birds** such as chickens and turkeys. Aquatic birds are primary natural reservoir for most subtypes of influenza A viruses.
  - o Depending on the origin host, **influenza A viruses can be classified as avian influenza** (H5N1, H9N2 etc.), **swine influenza**(H1N1 and H3N2), or other types of animal influenza viruses.
- Influenza type A viruses are classified into subtypes according to the **combinations of different virus surface proteins, hemagglutinin (HA) and neuraminidase (NA).**
  - o For example, a virus that has an HA 7 protein and NA 9 protein is designated as subtype H7N9.
- Human infections are primarily acquired **through direct contact with infected animals or contaminated environments.**

> **There are four types of influenza viruses: types A, B, C and D:**
> - **Influenza A viruses infect humans and many different animals**. The emergence of a new and very different influenza A virus with the ability infect people and have sustained human to human transmission, can cause an influenza pandemic.
> - **Influenza B viruses circulates among humans** and cause seasonal epidemics. Recent data showed seals also can be infected.
> - **Influenza C viruses can infect both humans and pigs** but infections are generally mild and are rarely reported.
> - **Influenza D viruses primarily affect cattle** and are not known to infect or cause illness in people.

11.30. 20 YEARS OF INDIA'S TRADITIONAL KNOWLEDGE DIGITAL LIBRARY

- **Traditional Knowledge Digital Library (TKDL)** is an **Indian digital knowledge repository of traditional knowledge** (TK), especially about medicinal plants and formulations used in Indian systems of medicine.
  - o TK is knowledge, know-how, skills and **practices that are developed, sustained and passed on from generation to generation within a community,** often forming part of its cultural or spiritual identity.
- **TKDL was initiated in 2001, as a collaboration** between the Council of Scientific and Industrial Research (CSIR), Ministry of S&T, and Department AYUSH, Ministry of Health.
  - o TKDL database contains more than 3.9 lakh formulations/ practices from the **Indian systems of medicine (Ayurveda, Yoga, Siddha, Unani and Sowa Rigpa)**in digitized format in

five languages: English, German, French, Japanese and Spanish.
- It seeks **to prevent misappropriation of the country's traditional medicinal knowledge at International Patent Offices** by preventing the granting of patents for products developed utilizing Indian TK.
  - Also, non-patent database serves to **foster modern research** based on traditional knowledge, by simplifying access to vast knowledge of practices.
- The database is **available to only patent examiners through TKDL Access** (Non-disclosure) Agreement.

11.31. VARIOUS AWARDS ANNOUNCED ON REPUBLIC DAY

Padma Awards	• **Instituted in 1954**, these form part of the highest **civilian honours** of India.
	• Given in **three categories:**
	  ○ Padma Vibhushan (for exceptional and distinguished service),
	  ○ Padma Bhushan (for distinguished service of higher-order) and
	  ○ Padma Shri (for distinguished service).
	• **Award does not amount to a title** and cannot be used as such.
	• Total number of awards in a year (excluding posthumous awards and to NRI/foreigners/OCIs) **should not be more than 120.**

Gallantry Awards	• Post-independence**, first three gallantry awards namely Param Vir Chakra, MahaVir Chakra and Vir Chakra** were instituted by the Government of India (GoI) on 26th January, 1950. • Later, additionally, **Ashoka Chakra, Kirti Chakra and Shaurya Chakra** were instituted. • These gallantry awards are **announced twice in a year -** on Republic Day and on Independence Day. • **Order of precedence -** Param Vir Chakra, the Ashoka Chakra, the Mahavir Chakra, the Kirti Chakra, the Vir Chakra and the Shaurya Chakra. • This year, for the **first time** since the Kargil Conflict in 1999, **gallantry awards for war-like action have been given.** Awards honoured Indian soldiers who lost their lives during the clash with Chinese troops in Galwan valley.

Pradhan Mantri Rashtriya Bal Puraskar	• **Bal Shakti Puraskar**(Earlier called National Child Award for Exceptional Achievement) was instituted in **1996** to give **recognition to children with exceptional abilities and outstanding achievements** in the fields of innovation, scholastic achievements, social service, arts & culture, sports **and Bravery.** • **Bal Kalyan Puraskar**(Earlier called **National Child Welfare Awards**) – instituted in 1979 to give recognition to those who have made **outstanding contributions in the fields of Child Development, Child Protection and Child Welfare**. • This Award is given in two categories - **Individual and Institution.** • **Eligibility**: A Child who is an Indian Citizen and residing in India above the age of 5 years and not exceeding 18 years.

11.32. RISA

- **Risa is a handwoven cloth used as a female upper garment,** and also as headgear by the Tripura's indigenous communities
  - It is being **branded under the India Handloom Brand as a signature identity of the state.**
- Traditional Tripuri female attire comprises three parts — risa, rignai and rikutu.
  - **Rignai is primarily worn as the lower garment.** It can be understood as an indigenous variety of the sari.
  - **Rituku is mainly used as a wrap,** or like a 'chunri' or a 'pallu' of the Indian saree.

11.33. VANADIUM

- For the first time a **promising concentration of vanadium is found**in the Depo and Tamang (Arunachal Pradesh).
- **Vanadium in its pure form is a soft, grey and ductile element** primarily derived from mined iron ore, carbonaceous shale or phyllites and steel slag.
  - **The largest deposits are in China, followed by Russia and South Africa.**
- Vanadium alloys are **durable in extreme temperature and environments, and are corrosion-resistant.** Hence, used in s**teel,** vanadium redox batteries etc.

WEEKLY FOCUS
Holistic coverage of an issue every week

ISSUE	DESCRIPTION	LEARN MORE
Social Media and Society	We all have witnessed the evolution of social media platforms from being a medium of entertainment to becoming an indispensable part of our life. This document explains how social media during its journey of evolution, has impacted the human society in myriad ways. It also discusses the need and ways to regulate this new age platform for it to become more relevant in the new age digital era.	
Climate Change Negotiations	Climate change is one of the most heard of phenomena in the present times that is impacting lives across the globe. COVID pandemic is also being touted as the latest manifestation of this phenomenon. Dealing with the widespread impacts of climate change hence calls for coordinated international efforts. This document describes the tale of emergence of various global climate change negotiations and agreements and discusses the issues plaguing their sincere adoption and effective implementation.	
India and World Trade Organization	In the wake of rising trend of protectionism and fear of deglobalization sweeping across the world, multilateral institutions like WTO are in a mode of crisis. India being one of the significant global trade players, is not aloof of the impacts of this crisis. In this document, apart from learning the role played by WTO in facilitating global trade, we will also look into various facets of India's journey with the organization, present issues and the way ahead.	
Infrastructure Development in the North Eastern Region	Despite its enormous potential, the North Eastern Region of India is categorised as one of the backward regions. One of the major reasons behind this dichotomy is the poor development of infrastructure in the region. This document gives an insight into the underlying reasons for the same, the steps that are being taken by the government to improve the situation and the way forward to harness region's true potential.	
Data-Driven Innovations and Privacy	Data is the new oil and data-driven innovations are the new sources of growth. However, the story is incomplete without talking about the privacy of data generators. This document explains various types of data, their usage and the inter-relationships that exist between innovation and privacy. Further, it also provides an insight into how a middle path can be identified that can protect data privacy while promoting the culture of data-driven innovations.	

7 IN TOP 10 SELECTIONS IN CSE 2019

FROM VARIOUS PROGRAMS OF VISION IAS

2 AIR — JATIN KISHORE

3 AIR — PRATIBHA VERMA

6 AIR — VISHAKHA YADAV

7 AIR — GANESH KUMAR BASKAR

8 AIR — ABHISHEK SARAF

9 AIR — RAVI JAIN

10 AIR — SANJITA MOHAPATRA

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