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1. POLITY AND CONSTITUTION

1.1. SIMULTANEOUS ELECTIONS

Why in News?

Recently, Prime Minister raised the pitch for Simultaneous Elections to the Lok Sabha and State Assemblies.

About Simultaneous Elections (SE)

- It means **structuring the Indian election cycle in a manner that elections to Lok Sabha and State Assemblies are synchronized together** under which voters in a particular constituency vote for both on the same day.
- SE were the **norm until 1967**. But following dissolution of some Legislative Assemblies in 1968 and 1969 and that of Lok Sabha in 1970, elections to State Assemblies and Parliament have been held separately.
- Later, SE idea was **proposed by Election Commission in 1983**. It was also referred by Law Commission and NITI Aayog.
- SE **does not mean that voting across the country for Lok Sabha and State Assemblies happen on a single day**. It can be conducted in a phase-wise manner and voters in a particular constituency vote for both State Assembly and Lok Sabha the same day.

> **Constitutional provisions related to simultaneous Elections**
> - **Article 83** stipulates that Lok Sabha shall have a normal term of 5 years from the date appointed for its first meeting and no longer.
> - **Article 85** states that President of India has the power to dissolve the Lok Sabha on the advice of the Union Cabinet**.**
> - **Article 172** lays down the term for the Legislative Assemblies as five years.
> - **Article 174 is** states that Governor has the power to dissolve the state assembly on the advice of the state Cabinet**.**

Arguments in favor of Simultaneous Elections

- **Policy paralysis:** Frequent elections lead to imposition of Model Code of Conduct (MCC) over prolonged periods of time which often leads to policy paralysis and governance deficit in the form of suspended development programs, welfare schemes, capital projects etc.
- **Huge expenditures:** By various stakeholders like political parties, individual candidates, etc. The urge to spend more (than the set limit) to win elections is blamed as one of the key drivers for corruption and black-money in the country.
- **Engagement of security forces:** Deployment of security forces is normally throughout the elections and frequent elections takes away a portion of such armed police force which could otherwise be better deployed for other internal security purposes.
- **Disrupting public life:** Frequent elections lead to disruption of normal public life and impact the functioning of essential services. If SE are held, this period of disruption would be limited to a certain pre-determined period of time.
- **Impact on social fabric:** Frequent elections perpetuate caste, religion and communal issues across the country as elections are polarizing events which have accentuated casteism, communalism and corruption.
- **Focus on populist measures:** Frequent elections will impact the focus of governance and policy making as it forces the political class to typically think in terms of immediate electoral gains rather than focus on long-term programmes and policies.
- **Impact on voter turnout:** According to law commission report simultaneous polls will boost voter turnout.

Arguments against Simultaneous Elections

- **Operational feasibility** such as how to synchronize cycle for the first time, what will be the procedure in case ruling party/coalition loses majority before 5 years, feasibility for the Election Commission to conduct elections at such a massive scale etc.
- **Constitutional issues:** Holding SE will require certain requirements such as Curtailment and extension of terms of the House of the People/ State Legislative Assemblies, Amendment to the relevant provisions of the Constitution, Amendment to the Representation of People Act, 1951, ratification by the States to these Constitutional amendments.
- **National and state issues are different**, and holding simultaneous elections may affect the judgment of voters and and he/she may vote for the same political party, which in most cases may be larger national parties.

- **Reduce government's accountability to the people** as frequent elections bring the politicians back to the voters and enhance accountability of politicians to the public.
- **It can go against federalism** as when an election in a State is postponed until the synchronized phase, President's rule will have to be imposed in the interim period in that state.
- **Homogenization of the country**, instead of bringing equity, sustaining plurality, and promoting local and regional leadership, as SE may promote national parties.

Conclusion

Analysis of financial implications, effect of MCC and law commission's recommendations suggest that there is a feasibility to restore SE as it existed during the first two decades of India's independence.

However, SE cannot be the panacea. The issues related to frequent elections can be addressed by, re-looking at the duration of restrictions under MCC, curbing poll expenditures by electoral funding reforms, bringing political parties under RTI, etc.

1.2. RIGHT TO RECALL

Why in News?

Recently, Haryana Assembly passed Haryana Panchayati Raj (Second Amendment) Bill, 2020, which provides the right to recall members of Panchayati Raj institutions.

More on News

- Right to Recall is a process whereby the **electorate has the power to remove the elected officials** before the expiry of their term**.** It is an example of **instrument of direct democracy**.
- Bill allows the **recall of village sarpanches and members of the block-level and district-level panchayats** if they fail to perform.
- To recall, **50% members of a ward or gram sabha have to give in writing** that they want to initiate proceedings.
- This will be followed by a secret ballot, in which their recall **will require two-third members voting against them.**

Benefits of Right to Recall

- **Ensure greater accountability** in the political system as the electorate retains control over those legislators who are underperforming or are misusing their office for their selfish gains.
- **Lack of competence and ethics in representatives** call for a mechanism which vests in people the control over such unworthy representatives who have failed to secure the best interests of their electorates.
- **Check corruption as well as the criminalization of politics** by deterring candidates from spending crores of money in campaigning for the elections because they will always have a fear of being recalled.
- **Logic and justice** as it will provide an option to correct wrong decisions without having to wait for the next five years.

Limitations of Recall

- **De-stabilise the government:** It might lead to destabilization as wherever there is discontent, people will start recalling.
- **Election fatigue**- by recalling/rejecting the candidates and having another election may cause election fatigue & lower voter turnout.
- **Political tool**: It could be misused by special interest groups with money power and genuine politicians may become victims of this power.
- **Independence of representatives:** It would inevitably discourage the representatives from using their own judgment and coming up with tough but unpopular stands rather than the populist ones.
- **Viability of the process:** It would require a minimum percentage of the electorate to sign the petition for effectuating a recall, the verification of authenticity of those signatures, verification to see whether those signatures were given with free consent or under coercion etc.

> **Direct Democracy**
> - Direct democracy describes those rules, institutions and processes that **enable the public to vote directly on a proposed constitutional amendment, law, treaty or policy decision.**
> - **Various instruments of direct democracy include:**
>   - Referendums
>   - Citizens' initiatives
>   - Plebicite
>   - Agenda initiatives

- **Increased expenditure:** The conduct of a by-election would further require a lot of resources including financial resources, man-power, time etc.

Way forward

- **Enhancing political awareness:** main focus should be on enhancing the political awareness of masses by various means possible and on ensuring a better turn-out of voters in the elections respectively.
- **Proper scrutiny:** A recall should be carried only after conducting proper judicial scrutiny on certain specific grounds and not on vague or ambiguous grounds.
- **Strong deterrence:** Recalled representative must be debarred from contesting the by-election held thereafter. Otherwise all the money, man-power, time etc. in conducting the recall would go in vain.
- **Strengthening existing mechanisms:** There are already in existence various neglected 'pre-election' measures which aim to ensure accountability such as provisions relating to disqualification and expulsion of members and the existing vigilance bodies to check corruption etc.

1.3. REGULATING OVER-THE-TOP (OTT) PLATFORMS

Why in news?

The Union government has recently brought Over the Top (OTT) platforms, such as Netflix, Amazon Prime and others, under the ambit of the Ministry of Information and Broadcasting (I&B ministry).

More on the news

- The **Films and Audio-Visual programmes made available by online content providers** have been brought under the jurisdiction of I&B ministry through a notification that amends the **Government of India (Allocation of Business) Rules, 1961** using the clause (3) of **Article 77 of the Constitution**.
    - o Article 77 (3) allows the President to make rules for the more convenient transaction of the business of the Government of India, and for the allocation among Ministers of the said business.
- The notification also **brought news and current affairs content on online platforms** under the purview.
- Earlier the digital media platforms were under the jurisdiction of the Ministry of Electronics and Information Technology (MeitY) while other media such as print, television and radio were under the I&B ministry.
    - o The user-generated content, such as what is streamed on YouTube or Facebook, will continue to remain under MeitY.

Background

> **About OTT Platforms**
> - These are online platforms that **curate a range of content and present it on a singular platform**. Examples of these platforms include Netflix, Amazon Prime, Hotstar, AltBalaji amongst others. They are also known as **Online Content Curated Platforms (OCCPs).**
> - The OCC industry is distinguished from others (such as, intermediaries and user generated content (UGC) providers like Youtube, Facebook, Instagram etc.) inter-alia by the following features:
>   - o **A fully curated content catalogue** which is licensed or owned by the individual provider
>   - o **A 'pull' model of consumption** where consumers choose the content they wish to watch and access it on device(s), time or place of their choice; and
>   - o **Technology-enabled solutions** for content filtering and access controls.
>
> **Present regulatory framework:**
> - **Information Technology Act, 2000** has provisions relating to content on websites, and information/ websites / URLs can be blocked under Section 69A of that Act, on matters relating to sovereignty and integrity of India, defence of India, security of the state, friendly relations with foreign states or public order etc.
> - **Indian Penal Code, 1860**- prohibits content against national integration.
> - **Protection of Children from Sexual Offences Act 2012** - prevents child pornography.

- The Centre has been mulling the idea of a regulatory board for OTT platforms since 2019 and has asked the major online-streaming players several times to firm up a self-regulatory model as well.
- In January 2019, the **Internet and Mobile Association of India (IAMAI)** had put out a code called the 'Code of Best Practices for Online Curated Content Providers'.
- In February, 2020, IAMAI released a '**Code for Self-Regulation of Online Curated Content Providers'** which was signed by around 15 several digital platforms by September.
    - o The code had guidelines regarding Classification of Content, Parental and/or Access Control, Age Classification/Maturity Ratings etc. and set up a two-tier **Complaint Redressal mechanism**-

- ✓ Tier-I at the OCCP level- a Digital Content Complaint Forum ("DCCF") created internally by the OTT platform; and
- ✓ Tier-II at the industry level- a body under the IAMAI set up by the signatories known as the Online Curated Content Providers Governing Council.
  - o It **prohibited five types of content** – including those that deliberately and maliciously disrespect the national emblem or national flag, any visual or story line promoting child pornography, any content that maliciously intends to outrage religious sentiments and content that deliberately and maliciously promotes or encourages terrorism.
- However, the **proposed self-regulatory mechanism was rejected by the I&B Ministry** stating that it lacks independent third-party monitoring, does not have a well-defined Code of Ethics, does not clearly enunciate prohibited content, and at the second and third-tier level there is an issue of conflict of interest.
- In October, 2020 a **Supreme Court bench issued notices to the central government, I&B Ministry and IAMAI** on a petition to regulate OTT platforms such as Netflix, Amazon Prime etc through an autonomous body.

Need of regulating OTT platforms

- **Rapid growth in OTT industry**: India is currently the world's fastest growing OTT market, and is all set to emerge as the world's sixth-largest by 2024. The Indian OTT market is set to reach Rs 237.86 billion by FY25, from Rs 42.50 billion in FY19.
- **Lack of oversight**: While the Press Council of India (PCI) looks after the print media, the television news channels come under News Broadcasters Association (NBA) and Central Board of Film Certification (CBFC) monitors films, there is at present no law or autonomous body governing digital content or OTT platforms.
  - o Also, there is no specific law for content regulation on online services.
- **Receipt of several complaints from the public:** Several PILs have been filed in courts across the country underlining the concern and need to regulate online content.
- **Concerns regarding objectionable content**: Without appropriate regulation, online platforms can be potentially used for spreading fake news and hate speech and can publish obscene or violent content. Such content can damage social fabric and has potential to reach and affect children due to increasing accessibility of mobiles and computers.
- **Parity in treatment of content**: The film industry in India has voiced concern that while their industry requires a Central Board of Film Certification (CBFC), digital content on OTT platforms is made available to the public at large without any filter or screening.

Self Regulation of media platforms in India

In Indian television broadcasting, there is the inter-ministerial committee and the content is guided by self-regulating bodies such as the Broadcasting Content Complaints Council and the News Broadcasting Standards Authority.

Benefits of Self Regulation

- **Promotes standards that advance media's credibility with the public**, particularly in a country like ours which still needs to evolve to get an independent press;
- **Develops confidence in the public** that free media is not irresponsible while protecting the rights of journalists/producers to be independent;
- **Inculcates a professional culture** to be judged for mistakes not by those in power but by colleagues.
- **Lessens pressure on the judiciary** if violations of personal rights by the press are corrected with satisfaction by self-regulatory bodies.

Issues in self regulation:

- **Difficult to arrive at a regulatory consensus** that is acceptable to all stakeholders.
- **Toothless in nature:** due to absence of an independent enforcement mechanism.
- **Open to interpretations**: Self regulatory codes can be interpreted differently by different platforms.
- **Self censorship**: A self-regulatory code might not factor in the diversity of content on the internet and can lead to self censorship internally among platforms to avoid scrutiny.

Arguments against Regulation of OTT platforms

- **Fears of a censorship regime**.
- **No need of additional regulations**: existence of statutory provisions, such as IT Act etc. already present.
- **Freedom to consume content**: OCCP is pull content and hence users exercise substantial choice in the content they want to view. Moreover, major platforms classify and mark programmes according to age and provide a brief description of the content before it is played.
- **Growth in Indian film industry**: The rapid growth of OTT industry is benefiting small-scale content producers and these platforms are making regional films available around the country as well as globally. Excessive regulation might put Indian content creators at a disadvantage when they are competing on world stage.
- **Vast amount of content**: The content on OTT platforms is originating from all across the world thus it is technologically not feasible to censor/block the content.

Way Forward

- **Model combining state censorship and self regulation:** A multi-stakeholder approach to self-regulation can be adopted, that safeguards the creative freedom of content creators and artists, and protects the interests of consumers in choosing and accessing the content.
- **Establishing global ratings system:** A standard rating system for content and quotas for indigenous content on OTT platforms can be created.
- **Independent mechanism for complaints redressal:** An autonomous organization can be created to look into citizen complaints in relation to content made available by respective OCCPs.
- **Formulating broad guidelines:** The Government can frame guidelines that cover principles laid out in statutes like The Information Technology Act, 2000, Indian Penal Code, 1860, Indecent Representation of Women (Prohibition) Act, 1986, Protection of Children from Sexual Offences Act, 2012, Copyright Act, 1957 etc., to aid OTT platforms in self regulating its content.

1.4. LEGALISING BETTING IN INDIA

Why in News?

Minister of State for Finance has pitched for legalizing betting in India.

About betting

- Betting is defined as the action of gambling money on the outcome of a race, game, or other unpredictable event.
- **Public Gambling Act, 1867** is the general law governing gambling in India. However, the state legislatures have been entrusted with significant regulatory leeway to form state specific gambling law.
- There are **no specific central laws governing online gambling in India.** Most of the Gambling Legislations have been enacted prior to the advent of virtual or online gambling and hence these primarily refer to gaming/gambling activities at the physical premises.
- Countries like Australia, United Kingdom, South Africa, Sri Lanka and New Zealand have taken a step in this direction, legalizing and regulating betting in sports.

Arguments in favor of legalizing betting

- **Revenue source:** Legalising betting will be helpful in the generating income for the government by reducing the illegal spot-fixing, betting practices etc. in India. According to a KPMG study (in 2010), Indian gambling market is estimated at around $60 Billion, while recent studies peg the value at a higher number.
- **Recommended by Supreme Court mandated committee: Justice Lodha committee** recommended the legalisation of betting in Cricket. It opined that a regulatory framework would enable the government in differentiating betting from match fixing.

> **About Gambling legislations in India**
> - Betting is a term that validates the activity of gambling. Gambling is a generic term, while betting is a structured agreement.
> - **Gambling and betting are State subjects.** However, Gambling' is **not defined** under the Gambling Legislations of states.
> - The Indian law **distinguishes each game to be a "game of skill" and "game of chance".** This differentiates fantasy sports from traditional betting.
> - The gambling under the Gambling Legislations **does not include:**
>   - Betting on a horse race (subject to the legal regulations);
>   - Games of skill (excluded under the Gambling Act and by the court's judgments);
>   - Lotteries (regulated by lottery laws of India).
> - Thus, **Fantasy sports betting is legal** because it is a game of skill. And, in fantasy sports, your opponents are other human players, rather than bookmakers like in traditional betting.
> - **Sikkim and Nagaland expressly permit online gambling.** However, there are also states such as Telangana which follow a policy of zero-tolerance towards gambling, both online and offline.

- **Will augment other sports infrastructure:** The money earned from betting can be used to augment infrastructure for other sports and tourist facilities. Globally sports betting and gambling are utilised to generate funds for good causes and promotion of sports.
- **Check on illegal activities:** This will help in curbing growth of illegal trade and commerce, and corrupt practices such as spot-fixing and match-fixing being employed in sports, particularly cricket. It could ensure detection of fraud and money laundering and would create transparency.

- **Preventing loan-sharking:** De-criminalization of these activities could prevent people from being subjected to loan-sharking, i.e., incurring debts and borrowing loans at exorbitant rates.
- **Better enforcement mechanism:** Regulation would empower agencies to identify and prevent instances of gambling by minors and 'problem-gamblers' as well as save the public from any kind of inconvenience at the hands of the law enforcement authorities.
- **At par treatment:** It has also been argued by many that since horse-racing has always been considered legal (as it is considered game of skill), gambling and betting activities should also be treated alike.

Arguments against

- Such activities **expose and exploit the vulnerable sections of society** and are not consistent and in conformity with the Directive Principles of State Policy.
- It **may breed corruption, match fixing and may give rise to various criminal activities.** Also, some state governments expressed that such activities are unethical and not in the interest of the public at large.
- It has been proven to result in financial losses, **causing an adverse impact on one's economic state, personal life and social life.**
- The existing policy (National Sports Development Code of India, 2011), the current socio-economic atmosphere in the country and the **prevalent social and moral values do not encourage betting and gambling.**

Way forward

- Betting and gambling **transactions should be linked with operator's as well as player's/participant's Aadhaar card/PAN card,** so as to ensure transparency and State supervision.
- The **cap on the maximum amount that can be staked** in a wager could be fixed by law and be strictly implemented.
- **Gambling transactions can be made cashless,** making use of electronic means of payment such as credit cards, debit cards, net-banking, Virtual Currencies (like Cryptocurrency), etc.
- **Stringent law(s) should be put in place to control Foreign Direct Investment** and at the same time, to prevent money laundering, while also implementing necessary tax reforms.
- Websites advertising gambling must compulsorily ensure that there is **no objectionable or pornographic content on display on their portals/platforms.**
- The **Parliament may also enact a model law for regulating gambling** that may be adopted by the States.

1.5. 3 CAPITALS FOR ANDHRA PRADESH

Why in News?

As per the Andhra Pradesh Decentralization and Inclusive Development of All Regions Bill, 2020, Andhra Pradesh State will have Visakhapatnam, Amaravati and Kurnool respectively as the executive, legislative and judicial capitals of the State.

Arguments in favor of 3 capitals

- **Historically recommended:** It was the central theme in recommendations of all major committees set up to suggest a suitable location for the capital of Andhra Pradesh.
- **Distributed development:** Different regions gain from a decentralized arrangement as governmental activities are the fulcrum around which developmental activities spring up and boost local economy. Justice B N Srikrishna Committee, set up to look into the demand for a Telangana state, noted "concentration of development efforts in Hyderabad is the key reason for demand of separate states".

Examples of such arrangement
- **South Africa has a different capital for its judicial, legislative, and executive branches** at the federal level (Pretoria, Cape Town and Bloemfontein).
- In India, several examples exist of **states having high courts in a city different from the capital**. E.g. Uttar Pradesh, Madhya Pradesh, Gujarat and Kerala.
- **Some states also move their legislative assemblies to a different city for part of the year.** These include Maharashtra (Mumbai and Nagpur), Himachal Pradesh (Shimla and Dharmshala) and Karnataka (Bengaluru and Belgaum).

- **Planned Urbanization:** It is better to work against a primate city with high population density and move in favour of mid-sized cities with decent economies.
- **Avoiding financial crunch:** It is expected that the new arrangement will come at a fraction of the earlier cost for Amaravati as it would buy into existing infrastructure of Kurnool and Vishakhapatnam.
- **Concerns over food security:** KCS Committee raised concerns of food security when taking away thousands of acres of fertile land for urbanization by developing Amaravati as capital in single region.

Why it is being criticized?

- **Might hamper coordination:** Governmental arms, especially the bureaucracy and ministers are required to do frequent consultations. Separation and distance of the two might hamper coordination during assembly sessions.
- **Lack of proper infrastructure:** success of distributed development depends on a well-developed infrastructural network linking the growth centers. Andhra Pradesh lacks these linkages now.
- **Environmental impact of densification:** KCS committee warned about the environmental impact of intensification and densification in cities, with a special reference to Visakhapatnam. Also, Visakhapatnam region is prone to cyclones.
- **Not the only way for decentralization:** For decentralized development, the best way possible is strengthening of the local bodies. This not only results in the development of even remote areas but also improve governance.

Conclusion

For the 3 capitals idea to be successful, including technology and frequent use of digital communication to reduce the delay in decision making, improved coordination between legislature and executive shall be done. This can also lead to reduction in overall logistics cost for the state.

Simultaneously, there is a need to strengthen local bodies- by providing more funds, delegating more functions and providing better functionaries- to achieve inclusive and overall decentralized development.

1.6. FOREST RIGHTS ACT

Why in news?

The Jammu and Kashmir administration recently said that it was in the process of implementing the Forest Rights Act, 2006 to grant the rights to forest dwellers in the region.

About Forest Rights Act, 2006 (FRA)

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, or Forest Rights Act, 2006 was enacted to protect the marginal and tribal communities and other forest dwellers and balance environmental conservation with their right to life and livelihood. Key features of the FRA are:

- Following rights have been granted to Scheduled Tribes and Other Traditional Forest Dwellers**:**
  o **Title rights** - i.e. ownership - to land that is being cultivated by tribals or forest dwellers as on 13 December 2005, subject to a maximum of 4 hectares.
  o **Community rights** - to grazing areas, fishing, accessing water bodies in forests, to pastoralist routes, etc. and to **intellectual property and traditional knowledge** related to biodiversity and cultural diversity
  o **Relief and development rights** - to rehabilitation in case of illegal eviction or forced displacement; and to basic amenities, subject to restrictions for forest protection.
  o **Forest management rights** - to protect, regenerate or conserve or manage any community forest resource which the communities have been traditionally protecting and conserving for sustainable use.
  o **Right to collect and sell minor forest produce (MFP):** These include forest products like tendu leaves, honey and other products that have commercial value.
- **Eligibility to get rights under the Act:** is confined to those who "primarily reside in forests" and who depend on forests and forest land for a livelihood. Further, either the claimant must be a member of the Scheduled Tribes scheduled in that area or must have been residing in the forest for 75 years.
- **Authority:** The Act provides that the Gram Sabha, will initially pass a resolution recommending whose rights to which resources should be recognised. This resolution is then screened and approved at the level of the sub-division and subsequently at the district level.

Importance of Forest rights in India

- **Reversing the historical Injustice**: The Act helps in recognising the rights that were denied to forest-dwelling Scheduled Tribes and other traditional forest dwellers since colonial times.
- **Poverty alleviation and inclusive growth:** FRA helps in securing traditional livelihood of forest-dwelling communities by granting them access to the forest products and forest land and facilitating commercial trading in MFPs.
  - For Example, around 50-gram sabhas in the Gondia district of Maharashtra organised a federation that guaranteed competitive prices and bonus for the communities for their product collection and earned Rs 2.5 crore by selling Tendupatta.
- **Conservation of forests:** FRA recognizes the symbiotic relationship of the forest dwelling communities with the forests and allows them to manage and conserve the forest using their traditional wisdom.
  - For example, the forest cover in community forest reserves in Maharashtra increased from 6.81% in 2000 to 9.32% in 2014.
- **Decentralization:** It provides for democratic decentralisation through Gram Sabhas which facilitates communities to discuss, debate, decide, plan, and effectively implement forest management plans leading to their empowerment.
- **Curbing extremism:** Implementation of FRA in Left Wing Extremism affected districts not only leads to the development of forest dwellers but also build a relationship of trust and bond between them and the government, thereby reducing land conflict and other grievances.
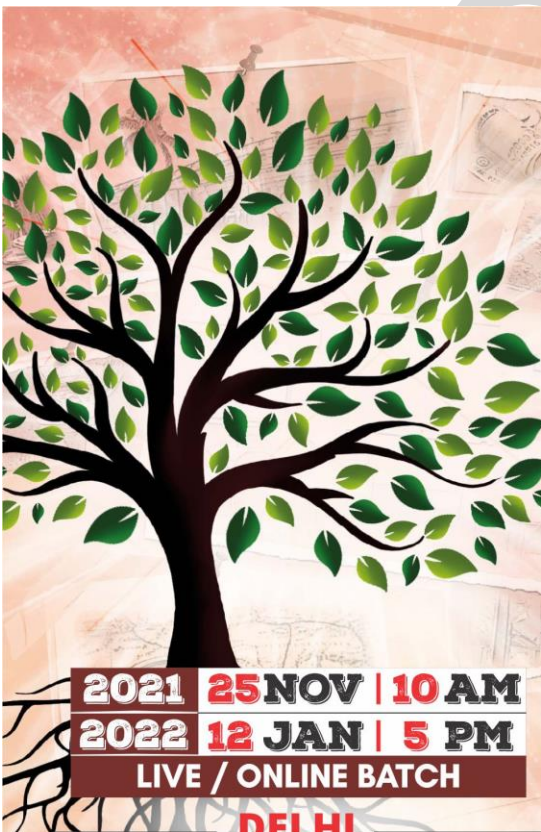
Concerns regarding implementation of FRA

- **Little progress in recognition of rights:** FRA has the potential to secure the forest rights of at least 200 million tribals and other traditional forest dwellers over 40 million ha (50 per cent of India's forest land) covering 177,000 villages. However, only 13 per cent of the 40 million ha has been demarcated under the FRA by the environment ministry.
- **Inadequate efforts to promote co-existence and preservation:** Despite Community Forest Resource (CFR) having being recognized, there have been few efforts from the state forest departments to move towards co-existence and supporting and recognizing CFRs by gram sabhas.
- **Diversion of tribal Lands:** There have been instances where plantations by forest agencies are being done on land used by tribal communities and other traditional forest dwellers that are entitled to these lands under FRA.
  - As per a study, there has already been a diversion of around 0.39 million hectares (ha) of forest land between 2008 and 2019.
- **Relocation in violation of FRA**: Several people have been denied rights or relocated from Protected areas or critical wildlife habitats without prior assessment whether co-existence is possible and exercising forests rights would lead to irreversible damage to the habitat or species.
- **Discrepancies and delays in the process of recognising claims:** A large number of claims have been pending, rejected or the area recognized has been drastically reduced without any proper reasons along with imposition of extra-statutory and extraneous conditions in the title for recognised rights.
  - The situation has been worsened due to misinterpretation of the law by officials, illiteracy among forest dwellers, lack of awareness about their rights and little knowledge about procedure for filing claims.
- **Other issues:** Inadequate financial and administrative support to implement the law; lack of coordination between the tribal, revenue and forest department; poor or non-functioning of district and sub-division level committees; dissatisfactory Rehabilitation and compensation, etc.

Way Forward

- **Organizing large scale awareness campaigns:** Efforts should be made to reach out through radio, television and other media to ensure that people receive the basic communication regarding salient provisions of the Act, interpretation of community right etc.
- **Intensive capacity building approach:** Sub-division and district administration officers, especially revenue, forest and tribal functionaries entrusted with the task of processing forest rights have to be systematically trained not only the procedural requirements under FRA but also the challenges and contexts of forest resource use and access pattern.

- **Participation of civil society:** There is a need to identify NGOs working in the area to provide assistance to tribal communities in filing applications, resolving issues of caste certificates, identification and measurement of land and negotiating with the officials to resolve conflicts.
- **Using technology to strengthen outreach:** Technology needs to be utilised to support implementation and make the process more efficient and effective. For instance, GPS survey maps can be used to resolve competing claims at the local level.
- **Expedite the process of claims:** There is a need for reviewing all rejected and pending claims to individual and community forest rights expeditiously.
- **Ensuring transparency and accountability**: on decision making related to claims procedure. The reasons for rejection or delay in recognition of claims should be conveyed to the claimants.

2. INTERNATIONAL RELATIONS

2.1. REGIONAL COMPREHENSIVE ECONOMIC PARTNERSHIP (RCEP) AND INDIA

Why in News?

Recently, 15 Asia-Pacific nations have signed the Regional Comprehensive Economic Partnership (RCEP), while India chose to opt out of the trade agreement.

About RCEP

- Regional Comprehensive Economic Partnership (RCEP) is a Free Trade Agreement (FTA) that has been signed between 15 countries including the 10 ASEAN members, China, Japan, South Korea, Australia and New Zealand.
- It now forms the **world's largest trade bloc,** covering over 2.2 billion people and accounting for 30 per cent of the world's economy.
- The RCEP was first proposed at the 19th ASEAN meet in 2011 with an aim to create a consolidated market for the ASEAN countries and their trade partners.
- While India was a part of the RCEP's negotiations, it dropped out in November 2019, citing significant outstanding issues that remain unresolved. Although **India has been given the option of joining it later**.

Why did India pull out of RCEP?

- **Trade imbalance with RCEP members:** India's trade deficit with RCEP countries has almost doubled in the last five-six years – from $54 billion in 2013-14 to $105 billion in 2018-19, of which China alone accounts for $53 billion.
- **Geopolitical considerations**: India wanted RCEP to exclude most-favoured nation (MFN) obligations from the investment chapter, as it did not want to hand out, especially to countries with which it has border disputes (China), the benefits it was giving to strategic allies or for geopolitical reasons.
- **Security considerations**: Closer economic ties under RCEP have the potential to make the countries of the region even more vulnerable to China's economic and political coercion. This could impact India's security interests in Southeast Asia.

INDIA'S TRADE BALANCE WITH RCEP MEMBERS

RCEP Member	2018-19	2019-20
ASEAN	-21.85	-23.82
China	-53.58	-48.65
South Korea	-12.05	-10.81
Japan	-7.91	-7.91
New Zealand	-0.25	-0.14
Australia	-9.61	-6.93

All figures in $billion
Source: Ministry of Commerce and Industry

- **Lack of adequate protection for domestic industries**: India's proposals for **strict rules of origin (ROO)** (criteria to determine the source country of a product based on which they get tariff concessions or duties) and **an auto-trigger mechanism to impose tariffs** when imports crossed a certain threshold were not accepted.
  - Losing flexibility to raise tariffs coupled with **lack of strong protection measures** and **threat of circumvention of ROO** through rerouting products from countries with lower tariffs can endanger growth of domestic industries by flooding Indian markets with foreign products that have been subsidized and emerge from countries with unfair production advantages.
- **Lack of Service component**: Most developed RCEP countries where India can export services, have been unwilling to negotiate wide-ranging disciplines in services that can create new market access for trade in services in this region.
- **Impact on local industries**: A large number of sectors including dairy, agriculture, steel, plastics, copper, aluminium, machine tools, paper, automobiles, chemicals and others had expressed serious apprehensions on RCEP citing dominance of cheap foreign goods would dampen its businesses.

- **The impact of earlier FTAs on India's trade balance has been ambiguous**: Several trends in the existing FTAs that does not favour signing another FTA, include-
  - Usually, signing FTAs has required India to significantly cut import duties, since most partner countries already have low import duties. This has only led to **trade diversion** (diversion of trade from non FTA countries to FTA countries) and has rarely increased India's exports.
  - A NITI Aayog report had stated that India's exports to its FTAs partners have not outperformed exports to the rest of the world and have generally led to greater imports than exports, giving rise to **high trade deficits** with FTA partners like South Korea, Japan and ASEAN.
- **Other reasons** include:
  - Lack of credible assurances on market access and non-tariff barriers.
  - Differences over tariff structure with China on goods.
  - India already has bilateral FTAs with ASEAN, Korea and Japan and negotiations are underway with Australia and New Zealand.
  - The e-commerce chapter has some clauses that affect data localization norms in India.

Possible Implications of not joining RCEP

- **Protectionist image**: Withdrawal from RCEP along with other recent measures such call for self-reliance under Atmanirbhar Abhiyan, revised public procurement order giving preference to local content etc. can be perceived as India taking a protectionist stance in terms of trade policy.
- **Impact on India's export sector**: RCEP was envisaged to strengthen Asian supply chains, bring in investments and boost the member countries' competitiveness in global markets. Isolation, loss of potential investments and lack of competition might affect India's performance in terms of exports and growth.
- **Lost opportunity in securing a position in the post COVID world**: RCEP is expected to help member countries emerge from the economic devastation caused by the pandemic through access to regional supply chains.
- **Effect on bilateral ties with RCEP countries**: There are concerns that the decision will hamper India's bilateral trade with RCEP member countries as they would be inclined to bolster trade within the bloc. Also it could affect India's relation with Japan and Australia with regards to their coordinated efforts in the Indo-Pacific.
- **Loss for consumers**: Some products might become more expensive for Indian consumers, especially when global trade, investment and supply chains face unprecedented challenges due to the Covid-19 pandemic.

Way Forward

- **Discussing benefits and costs of signing RCEP**: Further discussions regarding whether or not to sign RCEP in the future must take into account facts about India's trade balance and how its industries, exports and imports are placed vis-a-vis the trading partners.
- **Making India's export sector globally competitive**: Reducing the cost of doing business through infrastructure investment and improving the business environment holds the key for improving India's export prospects.
- **Focusing on negotiating bilateral FTAs with countries where trade complementarities and margin of preference is high** for example- European Union, USA.

2.2. 17TH ASEAN-INDIA SUMMIT

Why in news?

Recently, 17th ASEAN-India Summit was held virtually.

Key Highlights of the Summit

- India announced a contribution of **US$ 1 million to the COVID-19 ASEAN Response Fund**.
- Both India and ASEAN welcomed the adoption of the new **ASEAN-India Plan of Action for 2021-2025**.
  - The new Plan of Action (POA) builds upon the achievements made under the previous POAs for 2010-2015 and 2016-2020, and guides the implementation of ASEAN-India Strategic Partnership.
  - The POA elucidates future strategies and possible engagements across varied fields including- Political Cooperation, Maritime Cooperation, Transnational Crime and Counter-Terrorism, Trade and Investment, Transport, Agriculture and Forestry, Information and Communication Technology (ICT), Tourism, Science, Technology and Innovation, Climate Change etc.
- India reiterated its offer of **US$ 1 billion Line of Credit to support ASEAN connectivity** for greater physical and digital connectivity between ASEAN and India.

- Both sides also started discussions for determining the scope of review of India-ASEAN free trade agreement (FTA) at the earliest with a view to make the pact more user-friendly, simple, and trade facilitative for businesses.

Importance of ASEAN for India

- **ASEAN's centrality in India's foreign policy**: A cohesive, responsive and prosperous **ASEAN is central** to India's Indo-Pacific Vision and India's Act East Policy and contributes to Security and Growth for All in the Region (SAGAR).
- **Maritime security**: The Indian Ocean carries 90% of India's trade and its energy sources. Presence of choke points such as the Malacca strait makes the South East Asian region significant for countering traditional and non-traditional maritime threats like piracy and terrorism.

Association of Southeast Asian Nations (**ASEAN)**
- It is an intergovernmental organization of ten Southeast Asian countries: **Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam**.
- It promotes intergovernmental cooperation and facilitates economic, political, security, military, educational, and sociocultural integration among its members and other countries.

ASEAN Member Countries

- **Investment opportunities for Indian businesses**: Cost of production is lower in Laos, Cambodia, and Myanmar, it means that Indian firms can gain significantly by investing in these countries.

- **Lucrative market for Indian firms**: Around 67 million households in ASEAN states are part of the consuming class with incomes exceeding the level at which they can begin to make significant discretionary purchases, making ASEAN a pivotal consumer market of the future.
- **Countering China**: Cooperation between India and ASEAN is crucial to counter China's power projection in the region. Both have territorial and border issues with China, disputes over the South China Islands and waters for ASEAN and over land boundaries for India.
- **Integration with regional and global supply chains:** Increasing engagement with ASEAN is pivotal to facilitate India's integration with regional and global supply chain movements.
  - Strengthening relations with ASEAN members such as Vietnam which has recently signed a free trade agreement with European Union can prove beneficial for India.
- **Addressing regional and international issues**: India and ASEAN have of common interest and concerns such as promoting a rules-based order

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Concerns
- **Trade Deficit**: The two-way trade between India and ASEAN is tilted towards ASEAN with the trade gap expanding rapidly.
  - India's trade deficit with ASEAN rose from less than US$ 8 billion in 2009-10 to about US$ 22 billion in 2018-19.
- **RCEP:** India walking out of RCEP can become a sticking point between India and ASEAN, since India's domestic market was considered a key element in the RCEP negotiations.
- **India's limited Capacity:** India's capacity to provide development assistance, market access, and security guarantees remains limited.
- **Inadequate infrastructure**: Due to **lack of adequate physical** and **institutional infrastructure** between India and Southeast Asia, trading remains underutilized.
  - Moreover, the presence of non-tariff barriers and restrictive institutional arrangements hinder the movement of goods and services.
- **Chinese Influence**: China is a prominent trade and investment partner of ASEAN. Recently ASEAN became China's largest trading partner. Growing economic ties between China-ASEAN is concerning for India.

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in the region including through upholding adherence to international law, maintaining and promoting peace, stability, safety and security in the South China Sea, ensuring freedom of navigation and overflight, free trade, connectivity, human rights, climate change mitigation and adaptation etc.
- **Failure of South Asian Association for Regional Cooperation (SAARC):** It has made India look outside South Asia towards countries of Southeast Asia for economic and political cooperation.

Way Forward

- Cooperation between India and ASEAN in the Indo Pacific region can be enhanced through **convergence between India's Indo-Pacific Oceans Initiative and the ASEAN Outlook on Indo-Pacific**.
- To explore the opportunity in the post COVID world, ASEAN and India must upgrade the skilling, improve logistics services and strengthen the transportation infrastructure. Also **bringing ASEAN in Supply Chain Resilience Initiative (SCRI)** will strengthen our value chain linkages.
- India should proactively **utilize northeast states** in its efforts towards regional connectivity with ASEAN countries, given their strategic location. Myanmar, for one, shares a land border with India's northeast, thereby providing a bridge between Indian and Southeast Asian markets.
- India-ASEAN relations should be **enhanced through cooperation on common areas of interest** like combating piracy, maritime disaster management and keeping the Sea Lanes of Communication open for trade.
- There is a strong **cultural connect that India has enjoyed with ASEAN Region** through language, culture, dance, mythology, spirituality and religion. This provides an opportunity for India to build an organic relation based on shared cultural heritage.
- India should actively engage with ASEAN to **fast pace review of the FTA** to strengthen rules of origin provisions, work towards removal of non-tariff barriers and provide better market access to Indian businesses.

Overview of India-ASEAN Relations

Background

- India became **a Strategic Partner of ASEAN in 2012**, after progressing from its earlier roles of Sectoral Partner (1992), Dialogue Partner (1996) and Summit Level Partner (2002).
- The India-ASEAN Strategic Partnership acquired a new momentum with the announcement of **"Act-East Policy"** in the 12th Summit in 2014.
- **India's Act East Policy** provides the guiding framework to take forward the ASEAN-India Strategic Partnership to the next level and recognizes connectivity in its broadest sense to **include physical, economic, political and people-to-people connectivity**.
- Currently, there are 30 Dialogue Mechanisms between India and ASEAN, cutting across various sectors.
- Since ASEAN-India Commemorative Summit in 2002, the **ASEAN-India Summits have been held every year**.

Economic and commercial relations

- **India has a Free Trade Agreement with ASEAN** spanning goods, services and investment.
- India-ASEAN trade and investment relations have been growing steadily, with **ASEAN being India's fourth largest trading partner.**
- Between 1993 and 2003, ASEAN-India bilateral trade grew at an annual rate of 11.2 per cent.
- Meanwhile, foreign direct investments (FDI) flow from India to ASEAN increased by 98 per cent from $1.02 billion in 2018 to $2.02 billion in 2019.

Political and Security Cooperation

- Since India became a **Dialogue Partner of ASEAN**, the collaboration has transcended the realm of **functional cooperation to cover political and security dimensions**.
- Dialogue and cooperation frameworks initiated by ASEAN such as the **ASEAN Regional Forum (ARF), the East Asia Summit (EAS)**, **ASEAN Defence Ministers' Meeting plus** etc. contribute to enhancing regional dialogue and accelerating regional integration.
  - The ADMM+ brings together Defence Ministers from the 10 ASEAN nations plus Australia, China, India, Japan, New Zealand, Republic of Korea, Russia, and the United States on a biannual basis.
- At the 25th Anniversary of ASEAN-India Dialogue Relations in 2018, they adopted **Delhi Declaration** which charts out the future direction of ASEAN-India Strategic Partnership.
- India has an **annual Track 1.5 event Delhi Dialogue**, for discussing politico-security and economic issues between ASEAN and India.

Socio-Cultural Cooperation

- Programmes and projects launched by India for capacity development and enhancing people-to-people connectivity, include **exchange programmes** for students, Parliamentarians, media personnel and farmers and **Training Programmes** for ASEAN diplomats.
- In September 2019, External Affairs Minister and Minister of Human Resource Development **launched 1000 integrated PhD Fellowships for ASEAN students at the IITs**.

- ASEAN countries are **emerging as the major tourist destinations for Indians**. Out of 129 million foreign tourist arrivals to ASEAN in 2018, 3.45 million were from India.
- **Indian Diaspora** in the ASEAN region, which constitutes about **20% of India's total diaspora**, plays a seminal role in strengthening India-ASEAN ties.

Connectivity

- In 2013**, India became the third dialogue partner of ASEAN** to initiate an ASEAN Connectivity Coordinating Committee-India Meeting.
- India has made considerable progress in implementing the **India-Myanmar-Thailand Trilateral Highway** and the **Kaladan Multimodal Project**.
  - A possible extension to India-Myanmar-Thailand Trilateral Highway to Cambodia, Lao PDR and Viet Nam is also under consideration.

Science and Technology

- At the 6th ASEAN-India Summit in 2007, India announced the setting up of an **ASEAN-India Science & Technology Development Fund** with a $ 1 million contribution from India to promote joint collaborative R&D research projects in Science & Technology.
- This Fund become operational in 2009-10 and has been enhanced to $5 million from 2016-17.

Environment

- At the **6th ASEAN-India summit** in 2007, India also announced the setting up of an **ASEAN-India Green Fund** with an initial contribution of US$ 5 million from India, to support collaboration activities relating to environment and climate change.
- Some of the areas identified for collaboration under the Fund are climate change, energy efficiency, clean technologies, renewable energy, biodiversity conservation and environmental education.

2.3. BRICS

Why in news?

The 2020 BRICS Summit was held virtually under the chairmanship of Russia, which adopted the motto for the year as '**BRICS Partnership for Global Stability, Shared Security and Innovative Growth**'.

Key Takeaways of the summit

Moscow Declaration was adopted which reflects the five countries' consolidated approach to the further development of the association. Two pillars of this year's summit are the economy and counterterrorism:

- **Strategy for BRICS Economic Partnership 2020-2025 was signed:** It focussed on three priority areas — trade, investment and finance; digital economy; and sustainable development.
- **The BRICS counter-terrorism strategy:** with the objective of contributing to the global efforts to combat terrorism while also strengthening intra-BRICS ties in the area. This includes improving intelligence sharing, cracking down on their sources of finance and preventing the spread of terrorism.
- **Other highlights:**
  - Proposals to set up a **BRICS Integrated Early Warning System** for future outbreaks of infectious diseases and to minimise the risks of such outbreaks turning into pandemics.
  - BRICS countries also **highlighted the urgency of agreeing on an extension of the 2010 Russia-U.S. Treaty** on Measures for the Further Reduction and

About BRICS
- BRICS **started in 2001** as BRIC, an acronym coined by Goldman Sachs for Brazil, Russia, India, and China. South Africa was added in 2010. The notion behind the coinage was that the nations' economies would come to collectively dominate global growth by 2050.
- The BRICS grouping **aims to promote peace, security, development and cooperation** in the world. It also **aims at making a positive impact on the development of humanity** and establishing a **more equitable and fair world.**
- **BRICS Nations account for**

50% of world economic growth

42.58% of world population

26.6% of world land area

23.2% of world GDP in 2018

14.91% of IMF quota shares

13.24% of World Bank voting power
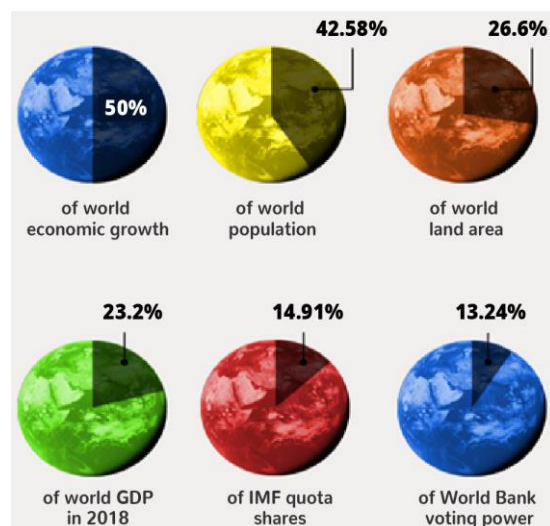
Limitation of Strategic Offensive Arms without delay, which speaks highly of the five countries' shared vision for global strategic stability.

o Countries **reiterated the need for a comprehensive global governance mode**l based on reviewing the UN and its Security Council, IMF and WTO mechanisms and bringing in more representativeness and efficiency into these organizations. Also, **for the first time the group called for reforms of the World Health Organisation (WHO).**

Significance of BRICS for India

- **Safe space to modulate rivalry:** The grouping provides India and China the opportunity to decouple their strategic contest from the other dimensions of the relationship.
  o During the Doklam standoff of 2017 and the recent Ladakh standoff, both China and India remained engaged through BRICS throughout the entirety of the crisis.
- **Providing a transcontinental reach**: With the presence of Brazil and South Africa in the group, it provides is a low-cost way for India to signal its aspirations as a global power.
- **Boosting India's demand for institutional reforms:** BRICS' repeated calls for reform of multilateral institutions, boosts India's own assertions in this direction, acting as a multiplier to the country's own demands for reform.
- **Contribution in creating an inclusive international financial architecture:** India was the main BRICS country behind the establishment of the NDB and has remained the **LARGEST BENEFICIARY of NDB loans** so far.
  o NDB intends to provide non-conditional financing, unlike the WB and IMF and attempts to rectify the North-South divide to make it more inclusive.
- **Trade dependency:** Thirty-four per cent of India's total imports are from the other four BRICS nations.

Challenges faced by the grouping

- **Disparities among the members:** The grouping bring together a mix of democratic and authoritarian regimes, with very different societal structures, resource bases, developmental trajectories, and historical traditions. The current pandemic has exacerbated pre-existing differences amongst the BRICS.
  o From South Africa, along with other African countries, China has attracted criticism for the ill-treatment that has been meted out to African residents there.
- **Suspicions among members about Chinese regional and global ambition** may impact group's functioning in future.
  o This results from China's Belt and Road Initiative; adventurism in the neighbouring seas and the passage of a new security law in Hong Kong.
- **Approach towards institutional reforms:** BRICS may have raised the issue of UNSC reform but this is more declaratory in nature than a serious attempt to overhaul the UNSC. BRICS is interested in selective reform of

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Achievements of BRICS

- **New Development Bank (NDB):** It was created in the 6th BRICS summit in Brazil, on the lines of Asian Development Bank and the World Bank.
  o The Bank has **reserved $10 billion to combat the pandemic**, while its overall portfolio of investment projects now exceeds $20 billion.
  o **62 large projects are being implemented** in the BRICS countries with **increasing number of bank's regional offices.**
  o The bank is currently preparing to accept new members – most likely Uruguay, the United Arab Emirates and the Philippines – thus **expanding its global footprint.**
- **Setting up the Contingent Reserve Arrangement (CRA):** to provide mutual financial support, and as a contribution to the global financial safety net.
- **Medical cooperation**: **Ufa Declaration** was adopted in the 7th summit in 2015 and included an agreement to work together to prevent the spread of infectious diseases. Also, the proposal of setting up a **BRICS Vaccine Research and Development Centre** was mooted and endorsed in the 10th summit in 2018.
- **BRICS Science, Technology and Innovation (STI) Framework Programme** pioneered in 2015 helped scientists and researchers to stay connected and effectively exchange their findings to better facilitate a common response to COVID-19.
- **Expanding trade:** Over the past five years, intra-BRICS exports grew by 45% and the share of intra-BRICS exports in total BRICS international trade increased from 7.7% to 10%.
- **Other areas:**
  o **BRICS Payments Task Force** as a step towards cooperation between central banks and other financial institutions on national payments systems.
  o **BRICS Rapid Information Security Channel** to promote the exchange of information on cyber threats among their central banks.

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the system, as its members have developed vested interests in the existing system. That is why the grouping seeks to reform global financial governance but is divided over UNSC reform.

- **Dependency on other global institutions:** BRICS does not have the 'strategic vision' to deal with 'global matters' on its own. For this, it relies on other international organisations, like throwing its support behind the G20 when the latter came together to deal with the 2008 financial crisis.
- **Changing world order:** The ongoing churn in the world order, further complicated by the pandemic sweeping through the world, has raised concerns about future policy directions of BRICS member states and its eventual impact on the organisation as a whole. If the US-China rivalry intensifies, the already complex dynamics between India and China, India's balancing act with the US, the growing Russia-China linkages, Russia-US tensions — raise the prospects of an 'internal split.'
- **Lack of capital:** BRICS do not have the funds to outcompete the Bretton Wood Institutions, the World Bank and IMF. More investment, more capital is needed in the NDB.
- **Low Intra-country trade:** Despite the opportunities and the potential, intra-BRICS trade and investment flows are very low. Imports and exports among BRICS nations are low. FDI flows to and from the BRICS are mainly to other countries and not to each other. China dominates whatever little flows happen within the BRICS nations.

Way ahead

BRICS has managed to begin a process of institutionalisation as well as increased intra-BRICS cooperation in areas like health, science and technology, finance, trade etc. This has also meant that despite the differing foreign policy positions in several areas, BRICS had remained an important arena for 'discussing the prospects of geopolitical evolution.'

- The future of BRICS will depend on how much the **leaders have agreed to stand collectively** against trade protectionism, increase investments and share a global political agenda.
- The BRICS nations **need to move towards a bottom-up approach** to increasing private sector and citizen involvement. This could involve a single BRICS visa, removing visa requirements for member nations, inducing increased collaboration among researchers and orchestrating private sector collaboration.
- As the COVID-19 pandemic underscored the need for stepping up international cooperation in the healthcare sector, it provides **an opportunity for the group to accelerate the establishment of the BRICS vaccine research and development centre** as agreed in 2018.

Conclusion

The ongoing churn in the global order is especially relevant for BRICS and its future as a multilateral organisation. Building a collective strategy and identifying priority processes to implement it can ensure that BRICS cooperation deepens and becomes self-reinforcing.

2.4. G20

Why in News?

Prime Minister participated in the 15th G20 Summit convened by Saudi Arabia in virtual format.

About G20 (Group of Twenty)

- The G20 is the international forum that brings together the world's major economies. Its members **account for more than 80% of world GDP, 75% of global trade and 60% of the population.**
- The forum has **met every year since 1999** and includes, since 2008, a yearly Summit, with the participation of the respective Heads of State and Government.
- In addition to the Summit, ministerial meetings, Sherpa meetings (in charge of carrying out negotiations and building consensus among Leaders), working groups and special events are organized throughout the year.
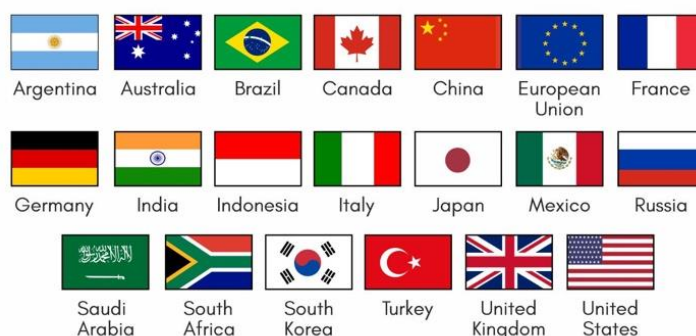
- **The objectives of the G20 are:**
  - **Policy coordination** between its members in order to achieve global economic stability, sustainable growth;
  - To **promote financial regulations** that reduce risks and prevent future financial crises;
  - To **create a new international financial architecture**.
- **G20 has two working tracks:**
  - **Finance Track**: The primary focus is on global economic and financial issues such as monetary, fiscal and exchange rate policies, infrastructure investment, financial regulation, financial inclusion and international taxation.
  - **Sherpa Track**: The focus is on broader issues such as political engagement, anti-corruption, development, trade, gender equality, energy and climate change.
- The G20 **does not have a permanent secretariat:** its agenda and activities are established by the rotating Presidencies, in cooperation with the membership.
  - A "Troika", represented by the country that holds the Presidency, its predecessor and its successor, works to ensure continuity within the G20.
  - The Troika countries are currently Saudi Arabia, Italy and Indonesia.
- **G20 is supported by international organizations,** including the Financial Stability Board, International Labour Organisation, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank and World Trade Organization.

Importance of G20

- **G20 works with developing countries,** particularly low-income countries to support them in implementing their nationally driven policies and priorities which are needed to fulfil internationally agreed development goals. **G20 provides policy coherence, analysis and practical tools to support growth and development.**
- **G20 plays a critical role in creating an enabling environment for inclusive global growth and development.** Its work on ensuring financial stability, promoting growth and avoiding and managing crises is critical in supporting the opportunities.
- **Other issues it addresses include** the advancement of women in the job market, the 2030 Agenda for Sustainable Development, climate change, global health, anti-terrorism and inclusive entrepreneurship, among others.
- **Its membership features both developed and emerging markets** from all continents, making it big enough to be globally representative and the world's most impactful global forum.

> **India and G20**
> - **India has been a founding member of G20** process and has played an active role in proposing new ideas and finding solutions.
> - **Some of the proposals that India made in the previous G20 summits:**
>   - **Terrorism:** International action on terrorism is needed as the roots of terrorism may be in some other country; the conspiracy could be hatched in some third country, and the actual target maybe another country like India.
>   - **Economic offenders:** Dealing with the economic offenders has been emphasized by India as a serious policy challenge for India and other countries in G20. Economic offenders often commit the crime in one country and flee to another to escape the legal process at home.
>   - **Global Taxation:** G20 has already taken cognizance of this fact and has come up with the Base Erosion and Profit Sharing (BEPS) framework.
>   - **New Digital Technologies**: Although the benefits of digital technologies for economic growth and social development are well-known, there are certain issues such as privacy, data security and digital governance which are to be properly understood.

Achievements of G20

- **The prime achievements of the G20 include:**
  - Quick deployment of emergency funding during the 2008 global financial crisis.
  - Reforms for international financial institutions such as reforms to the international tax system, through the G20/OECD Base Erosion and Profit Shifting (BEPS) project and implementation of tax transparency standards.
  - Improving oversight of national financial institutions.
  - Bolstering the quality of financial regulatory bodies in markets whose fiscal and monetary policies have led to crisis.

- Amid ongoing COVID-19 pandemic, **G20 has taken many measures to support economies and supply chains in the region.** G-20 has also lent its support to international organizations like the WHO and IMF.
  - G20 nations committed to **pump more than $5 trillion into the global economy** and contribute to the **WHO-led COVID-19 solidarity response fund.**
- G20 played a **critical role in the ratification of the Trade Facilitation Agreement,** with the WTO estimating it could contribute up to somewhere between 5.4 and 8.7 per cent to global GDP by 2030.
- **Increasing the lending capacity of the International Monetary Fund (IMF)** and collecting richer information on the shadow banking system.
- With only 20 official members, the G20 is **agile enough to make prompt decisions and to adapt to new challenges.** The keys to its success have been the ability of the Group to engage in meaningful debate, frankly and informally, and a commitment to seek consensus.

Challenges faced by G-20

- **G20 lacks an objective framework through which to set goals and measure progress** toward them. Its agenda has been fluid, with each host country adding something new to the mix at every annual gathering.
- **Every country, which assumes presidency, wants to put their stamp on it.** And therefore, every country would like to add some issues from their own perspective, like Japan did, by **including ageing and society 5.0** (technology-based and human-centered society, concept given by Japanese) in the Osaka Summit.
- **The exclusivity of its membership has attracted criticism.** The group represents a massive share of global economy and its decisions can impact non-member countries. Critics also point at disproportionate non-representation of African countries.
- **Not all resolutions passed at the G20 Summit are fully implemented** as only 10% of world countries are included in G20 decision-making, thereby denting the organization's authority.
- **G20 authority is also weakened** since some major members sometimes fail to fulfil their commitments (e.g., the delay of the IMF reform due to resistance from the U.S. Congress).

Way forward

- **There should be continuity of issues taken up** in the previous presidencies along with appreciation of new issues in the subsequent presidencies.
- **G20 must provide the vision to bind all the countries especially the emerging markets** like Indonesia, India, Brazil and Mexico which are new actors in global governance to support coordinated actions on major global issues and promote global public goods.
- **G20 should strengthen its ties with the UN** to give the Organisation and all of its relevant institutions full agency in promoting development.
- Redoubled **efforts are also needed in fields like infrastructure and food security** so as to address the North-South imbalance.
- Amid **COVID-19 pandemic**, **G20 role will be critical to build robust global supply chains** and strengthen international investment for economic recovery.

2.5. SHANGHAI COOPERATION ORGANIZATION (SCO)

Why in News?

Recently, Russian President chaired the 20th Summit of SCO Council of Heads of State.

More about news

- This was **the first SCO Summit held in Virtual Format**.
- India extended full support to observing the 20th anniversary of SCO in 2021 as **the "SCO Year of Culture."**
  - India announced that in 2021, the National Museum of India will hold an **exhibition on the Buddhist heritage of the SCO countries**.
- India **proposed to set up a Special Working Group on Innovation and Startups** and a Sub Group on Traditional Medicine within SCO.

About the SCO

- It is a **permanent intergovernmental political, economic and military organization** founded in Shanghai in 2001.
  - o **Regional development and security issues** (terrorism, ethnic separatism and religious extremism) are its main focus.
- **Russian and Mandarin** are presently used as official and WORKING LANGUAGES IN THE SCO.
- Working of the SCO is underpinned by the "SHANGHAI SPIRIT" which is about mutual trust, mutual benefit, equality, consultation, respect for cultural diversity and pursuit of common development.
- **Working structure**
  - o **The Heads of State Council (HSC):** It is the highest decision-making body in the SCO.
  - o **The Heads of Government Council (HGC)**: It is SCO's second-highest body that deals with the grouping's trade and economic agenda besides approving its annual budget.
  - o **It has two permanent bodies**
    - ✓ **The Secretariat** coordinates the activity of the SCO and provides informational, analytical, legal, organisational and technical support.
    - ✓ **The Regional Anti-Terrorist Structure (RATS)** works for combating regional terrorism, separatism and extremism.
  - o **The SCO Business Council** and **SCO Interbank Consortium** also work for increasing the cooperation among members for expanding economic cooperation and bank services respectively.
- **Global influence**
  - o SCO represents around **42% of the world's population and 20% of the global GDP.**
  - o 4 of its members (India, Russia, China and Pakistan) are **nuclear powers** and 2 (Russia and China) **are permanent members of the UN Security Council** (UNSC).
  - o The SCO is considered a **counterweight to the North Atlantic Treaty Organization (NATO).**
    - ✓ Both the organizations have geopolitical interests in Central Asia and the Gulf.
    - ✓ The SCO holds a degree of influence that is greater (in terms of land-mass) than NATO.

Related News
- India's Vice President chaired **19th meeting of SCO Council of Heads of Government.**
- This is the **first time that summit-level meeting was held under India's chairmanship** since it gained full membership of SCO in 2017.
- **Key highlights**
  - o India called upon SCO member states to enforce internationally-recognised legal statutes to comprehensively **eradicate safe havens, infrastructure and financial networks supporting terrorism.**
  - o **SCO members stressed the need to reform WTO,** including by improving its key functions such as negotiations, monitoring and dispute resolution.
  - o **India refused to support China's Belt and Road project** which was backed by all other members.
  - o Approved action plan for implementation of the **program of multilateral trade and economic cooperation for 2021-2025.**

Relevance of the SCO for India

- **Controlling regional terrorism:** SCO's defence-centric structures and activities of RATS have achieved considerable successes in curbing regional terrorism.
- **Participant in the political dynamics of Afghanistan:** It is likely that after the withdrawal of US and NATO forces from Afghanistan SCO will start playing a more prominent role.
  - o The SCO-Afghanistan Contact Group which was suspended in 2009 has also resumed working since 2017. Thus SCO would provide a platform to India for engaging in the Afghanistan's political dynamics.
- **Political:** At annual summit of the SCO India gets opportunity to renew bilateral ties with regional countries.
  - o The forum also provides India greater visibility in the **affairs of the Eurasian region.**

- o India can also **scuttle influence of Pakistan in Central Asia**.
  - o SCO also makes India an active key stakeholder in **shaping the dynamics of politically fragile, Central Asian Region (CAR)** which is also seen as a fertile ground for terrorism and drug trafficking.
- **Economic:** CAR is rich in iron-ore, coal, oil, gas, gold, lead, zinc, molybdenum, uranium, gold, gas and energy gas etc. India's economic diplomacy in SCO is focused less on Russia, China and Pakistan and more on CARs.
- **Connectivity:** India's pending energy projects like the TAPI (Turkmenistan-Afghanistan-Pakistan-India) pipeline, IPI (Iran-Pakistan-India) pipeline, and CASA (Central Asia-South Asia)-1000 electricity transmission projects all of which are blocked due to Pakistan may get a much needed push through the SCO.

Challenges for India in the SCO

- **Dominance of China:** SCO is a China dominated organisation. Barring India, the Belt and Road Initiative (BRI) has been endorsed by all the members.
  - o BRI is a concern for India as China-Pakistan Economic Corridor (CPEC) grossly violates India's sovereignty. China may try to limit and balance India's influence in the region by supporting Pakistan.
- **Controlling Pakistan Sponsored terrorism:** China has always condoned Pakistan's link with terrorist activities in India. SCO may not prove very effective in controlling Pakistan sponsored terrorism.
- **Trust deficit:** Growing closeness of Russia and China adds to the difficulties that India faces due to China-Pakistan axis in the SCO. Other member countries are also well disposed towards Pakistan. This puts India at the risk of being isolated in the organization.
- **Lack of connectivity with Central Asia and beyond:** A major impediment in connectivity with Central Asia and Eurasia remains the strategic denial of direct land connectivity between India and Afghanistan and beyond by Pakistan.
  - o India's bilateral trade with Central Asia stands at about $2 billion against over $50 billion of China's.

Way ahead for India

- **Maintain an independent voice against China's dominance: On BRI India has** articulated its view that connectivity projects must respect the sovereignty, and territorial integrity.
  - o India-Russia diplomatic relations and India's cultural and historical connect with the CAR could be leveraged for promoting India's interests in the SCO.
- **Revitalise connectivity projects:** The opening of Chabahar port and entry into Ashgabat agreement should be utilized for a stronger presence in Eurasia.
  - o Also, a clear focus on operationalising International North-South Transport Corridor (INSTC) is needed.
  - o This will pave the way for enlarging economic clout in the central Asia which in turn makes India indispensible in the region.
- **Constructively engage Pakistan:** Recently Russia, at the request of the Indian, has decided not to enter into an arms relationship with Pakistan. India should mobilize opinion in the SCO to ensure its connectivity projects to extended neighbors are unblocked by Pakistan.
- **Play a constructive role:** India could play a role in de-radicalisation of youths in Central Asia. It should also leverage its soft power to enhance its spheres of engagements in the field of culture, cuisine, education etc. This will ensure India does not get isolated in the organization.

2.6. ORGANIZATION OF THE PETROLEUM EXPORTING COUNTRIES (OPEC)

Why in news?

The OPEC Secretariat hosted the 4th High-Level Meeting of the OPEC - India Dialogue via videoconference.

More about News

- The **meeting focused on the implications of COVID-19,** discussing the repercussions of the pandemic and its significant impact on **both the world economy and energy markets**, including oil and the post-COVID scenario.
- OPEC reiterated that **India's support for the producer-consumer dialogue** has greatly contributed to the Organization's success in pursuing the sustainability of the oil market.
  - o **Producer-consumer dialogue** is a process of informal, global dialogue on energy at the level of ministers involving at present some 60 key energy countries. It also involves the industry within the Business Forum.

- During the dialogue, **India invited OPEC member countries to invest** in establishing 6.5 MMT of commercial-cum-strategic petroleum storage under a PPP model.
- Meeting also addressed the **issue of Asian Premium and term contracts**.

About OPEC

- OPEC is a **permanent intergovernmental organization of 13 oil-exporting nations**, **originally found by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela** at the Baghdad Conference on September 1960.
- OPEC's **objective is to co-ordinate and unify petroleum policies** among member countries, in order to
  - secure fair and stable prices for petroleum producers;
  - an efficient, economic and regular supply of petroleum to consuming nations;

  a fair return on capital to those investing in the industry.

- The **OPEC Secretariat is the executive organ of OPEC located in Vienna**; it also functions as the Headquarters of the Organization.
- It is **headquartered at Vienna, Austria.**
- While, **OPEC+ consists non-OPEC oil producing countries** Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan and Sudan along with the 13 OPEC member countries.

Asian Premium

- Asian Premium is the **extra charge being collected by OPEC countries from Asian countries when selling oil**, and India has been voicing its dissent against this practice.
- It has its roots in the establishment of **market oriented crude pricing** in 1986.
- There are **3 important benchmarks in global market,** representing the cost of oil produced in respective geographies.
  - **Brent**: Light sweet oil representative of European market
  - **West Texas Intermediate (WTI)**: US market
  - **Dubai/Oman:** Middle East and Asian Market.
- The US and Europe has an advantage because their markets and prices were **based on future trading and reflected every trend in the crude market**. On the other hand, since Asia represented by Dubai/Oman do not have any derivative trading, doesn't have that edge.
- Hence, **price charged from Asian countries remained $1-$2 dollar higher than** that from Europe and the US. This price differential is termed as 'Asian Premium'.

OPEC Countries

- According to current estimates, **79.4% of the world's proven oil reserves are located in OPEC Member Countries**, with the bulk of OPEC oil reserves in the Middle East, amounting to 64.5% of the OPEC total.
- **India is not OPEC member.**
  - **India is world's third-largest oil importer** and 78% of crude oil, 59% of liquefied petroleum gas (LPG), and nearly 38% of its liquefied natural gas (LNG) demand is catered by OPEC.
  - **India's oil demand is forecast to rise** from 4.7 million barrels per day in 2019 to 10.7 million bpd by 2045.

Issues in India OPEC relation

- **Sanctions on Iran:** Various member countries of OPEC along with the US are creating pressure to cut down the imports from Iran, that has raised serious supply concerns for India.
- **Asian Premium:** Saudi Arabia meanwhile charges premium; the extra charge being collected by OPEC countries from Asian countries when selling oil.
- **Depletion of forex:** Major trade with OPEC member states is in US dollar or Euro, which reduces the forex reserve of India.
- **Market instability:** Due to competition and production adjustment there is fluctuation in oil prices that makes hard to maintain stability of rupee and import management.

Conclusion

OPEC should **do away with discriminatory Asian Premium** pricing mechanism to make global level playing pricing mechanism. Also there is need to **use rupee instead of dollar or euro** to buy crude oil to reduce the current account deficit and improving the trade with the OPEC member countries.

2.7. INDIA AND NUCLEAR DISARMAMENT

Why in news?

UN General Assembly adopted two resolutions which were sponsored by India - 'Convention on the Prohibition of the use of Nuclear Weapons' and 'Reducing Nuclear Danger' under the 'Nuclear weapons' cluster. These resolutions manifest India's commitment towards the goal of nuclear disarmament.

More on the resolutions

- The "**Convention on the Prohibition of the use of Nuclear Weapons**", tabled by India since 1982 in the General Assembly requests the Conference on Disarmament in Geneva to commence negotiations on an international convention prohibiting the use or threat of use of nuclear weapons under any circumstances.
- The resolution on "**Reducing Nuclear Danger**", tabled since 1998, draws global attention to the risks of unintentional or accidental use of nuclear weapons and underscores the need for a review of nuclear doctrines. It calls for concrete steps to reduce such risks, including through de-alerting and de-targeting of nuclear weapons.

About Nuclear Disarmament
- Nuclear disarmament is the **act of reducing or eliminating nuclear weapons.** It can also be the end state of a nuclear-weapons-free world (NWFW), in which nuclear weapons are completely eliminated.
- The term **denuclearization** is also used to describe the process leading to complete nuclear disarmament.
- Since the U.S. bombings of Hiroshima and Nagasaki in 1945, the catastrophic effects of nuclear weapons have motivated the world to pursue arms control and disarmament measures to reduce the threat of nuclear weapons use.
- The United Nations sought to eliminate Nuclear weapons in the **first resolution adopted by the UN General Assembly in 1946.**
  - The resolution established a Commission to deal with problems related to the discovery of atomic energy among others and also decided that the Commission should make proposals for "**the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction**."

India's role in global nuclear disarmament

- India has **always been an ardent supporter of multilateral nuclear disarmament and non-proliferation efforts.**
- On numerous occasions, India has taken the opportunity to be a driving force for attaining universal, complete and non-discriminatory disarmament:
  - In 1965, India was **amongst the Non-Aligned Eight in the Eighteen Nation Disarmament Committee (ENDC)** that advocated for de-linking disarmament and non-proliferation
  - India **opposed to signing the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)**, which it views as discriminatory because of its grouping of countries that divided the world into "nuclear haves" and "nuclear have-nots'.
  - India **proposed a comprehensive proposal for "complete and universal nuclear disarmament**" to the UN General Assembly Special Session on Disarmament in 1988, which came to be known as the **Rajiv Gandhi Action Plan.**
  - India **has not signed the Comprehensive Test Ban Treaty (CTBT)** due to the failure of the treaty to include a commitment by the nuclear-weapon States to eliminate nuclear weapons within a time-bound framework.
  - Still it has observed a voluntary **nuclear testing moratorium since May 1998**.
  - Through its **Nuclear doctrine in 2003,** India has asserted its continued commitment to the goal of a nuclear weapon free world through

Conference on Disarmament (CD)
- It was **formed in 1979** as the single multilateral disarmament negotiation forum of the international community, after agreement was reached among Member States during the first special session of the UN General Assembly (UNGA) devoted to disarmament (1978).
- **Since the conclusion of the negotiation of the CTBT in 1996, the CD remains deadlocked** and has not been able to reach consensus on a programme of work and thus to commence substantive deliberations.

  global, verifiable, and non-discriminatory nuclear disarmament.
  - **India has also opposed the recent enforcement of Treaty on Prohibition of Nuclear Weapons (TPNW)** which India believes is not a comprehensive instrument on disarmament as it excludes the verification of nuclear armaments.

- o India maintains that the Geneva-based **Conference on Disarmament (CD) is the single multilateral disarmament negotiation forum.**
- o India is also in support of a non-discriminatory, universal, and verifiable **Fissile Material Cut-Off Treaty (FMCT)** that is being negotiated in CD.
  - ✓ **FMCT is a proposed international agreement** that would prohibit the production of the two main components of nuclear weapons: highly-enriched uranium (HEU) and plutonium.

Challenges for India's vision of Nuclear Disarmament

- **Ongoing Modernization of Nuclear weapons**: Although the inventories of nuclear warheads continue to decline overtime, all the nuclear states are either developing or deploying new weapon systems or have announced their intention to do so.
  - o For example-US is making a **Miniaturised nuke** which will ensure shrinkage of power and enable tactical applications.
  - o China and Russia are developing **hypersonic glide vehicles,** and Russia is probably developing a **nuclear-armed, nuclear powered underwater vehicle.**
- **Lack of consensus among major nuclear powers**
  - o The USA withdrew from the **Intermediate-Range Nuclear Forces (INF) Treaty, 1987** and Russia formally suspended its obligations under it.
  - o Uncertainty over continuation of **Further Reduction and Limitation of Strategic Offensive Arms (New START) treaty** between Russia and US beyond February 2021.
  - o Discussions on denuclearization between **the North Korea and the USA lost traction during 2019** and by the end of 2019 the **Iran nuclear deal (2015 Joint Comprehensive Plan of Action) was largely non-functional**.
- **Global perception for India:** Even as India's dominant assumption of its nuclear weapons has been determined by the effectiveness as a deterrence mechanism, the international community, from time to time, finds discrepancies in India's ideology and its ability to actively promote nuclear disarmament (even if it is not actively increasing it either).
- **India's regional security dilemma:** Consideration of regional developments (such as Pakistan's development of tactical nuclear weapons and its close relationship with China) in India's defence policies is although detrimental to India's quest for a Nuclear Weapon Free World (NWFW) but cannot be downplayed in the context of regional stability.

Conclusion

The non-proliferation and global disarmament discussions require a monumental shift towards more dialogue. The lack of concrete responses from the nuclear powers has perpetuated a gridlock situation. This provides **India with an opportunity to articulate the pertinence of non-proliferation and disarmament dialogue,** which can also strengthen the credibility of India as a responsible stakeholder in the regional and global nuclear context.

Key Treaties for Nuclear Disarmament, Arms Control and Non-Proliferation
- **Partial Test Ban Treaty (PTBT), 1963**: It prohibits testing of nuclear weapons in the atmosphere, in outer space, under water, or in any area within a state's territory that would cause radioactive fallout outside the state's territory.
- **Treaty on the Non-Proliferation of Nuclear Weapons (NPT), 1970:** It is the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon States.
  - o Its objective is to prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy and to further the goal of achieving nuclear disarmament.
- **Comprehensive Nuclear-Test-Ban Treaty (CTBT):** It is an international treaty that bans all nuclear explosions in all environments. It opened for signature in 1996, but has not yet entered into force.
- **Treaty on the Prohibition of Nuclear Weapons (TPNW)**: It is a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination.
  - o It includes a comprehensive set of prohibitions on participating in any nuclear weapon activities which include undertakings to develop, test, produce, acquire, possess, stockpile, use or threaten to use nuclear weapons.
  - o It entered into force recently in October 2020.
- Other agreements/groups which seek to prevent the proliferation of fissile material, nuclear weapons and their delivery vehicles are: **Nuclear Suppliers Group**, the **Missile Technology Control Regime**, the **Hague Code of Conduct against Ballistic Missile Proliferation**, and the **Wassenaar Arrangement**.

2.8. INDIA'S CIVIL NUCLEAR CO-OPERATIONS

Why in news?

India and the US have extended the memorandum of understanding for cooperation on nuclear energy by another decade.

Background of India's civil nuclear cooperation with other countries

- India's civil nuclear accords **aim to develop mutually beneficial economic, scientific and technical cooperation for the peaceful uses of nuclear energy.**
- There are **14 countries with which India has forged such agreements:** Argentina, Australia, Canada, Czech Republic, France, Japan, Kazakhstan, Mongolia, Namibia, Russia, South Korea, United Kingdom, US and Vietnam.
- The most critical factor that has facilitated these agreements is India's exceptionally clean track record in the area of nuclear non-proliferation.
  - India has observed a self-moratorium on conducting nuclear tests after the second round of Pokhran in 1998 and has abided by the principles of the NPT far better than even some of its signatories.

India's Nuclear Cooperation with different countries

- **India-US:**
  - The U.S.–India Civil Nuclear Agreement or Indo-US nuclear deal or the **123 Agreement** was signed between US and India in 2008.
  - **Under the agreement,** India agreed to separate its civilian and military nuclear activities and to open up the civilian part to inspection by the International Atomic Energy Agency (IAEA).
  - In return, the US offered to resume full nuclear trade i.e selling of reactors, Transfer of Technology, Uranium sale with India.
  - The two countries have also committed to promote cooperation on initiatives aimed at giving an impetus to nuclear safety and security, research and development in nuclear science and technology under various schools of **Global Centre for Nuclear Energy Partnership (GCNEP).**
  - The **issue of civil liability** became a primary challenge in the India-US 123 agreement as it went against the internationally established norms of recourse in nuclear civil liability conventions which puts the sole onus on the operators. However, in 2015, a compromise was reached between the two parties and India agreed to set up an insurance pool to protect companies constructing reactors in the country.
  - Despite this, however, **not much has been accomplished in terms of nuclear energy as part of this deal.** India has not bought a single reactor from the US over the decade since the deal was signed.
- **India-France:**
  - **France was the first country to sign a civilian nuclear agreement with India in 2008 after the complete waiver provided by the NSG.** According to the agreement, France would construct six European Pressurised Reactors (EPR nuclear reactors) of 1,650 MW each and implement the 9,900 MW Jaitapur Nuclear Power Project (JNPP) in an expedited manner.
  - The deal also **created the opportunity for India to be a part of the ITER (International Thermonuclear Experimental Reactor** – an international nuclear fusion research and engineering megaproject), with the aid of both France and the US.
  - Continued nuclear cooperation between India and France has **broadened and deepened the scope of strategic cooperation between the two sides**, making it one of the most comprehensive strategic partnerships that India has with any country.
- **India-Russia:**
  - In **1988,** a deal was signed with the Soviet Union for the construction of a nuclear power station made up of two "pressurized light water reactors, of 1000 MWe each." Throughout the 1990s, **Russia remained a key supplier of nuclear fuel to India**, during a time of limited progress in India's engagement with the global nuclear architecture. In **2008, the two countries signed an agreement for the construction of four additional units at Kudankulam** and on developing new sites.
  - In recognition of this longstanding relationship, the **India-Russia strategic partnership was elevated to the level of a 'special and privileged strategic partnership' in 2010.** The partnership has diversified even within the nuclear cooperation to not just in the energy sector, but in other areas such as nuclear medicine and processed food.
- **India-Japan:**
  - The **India-Japan Agreement for Cooperation in the Peaceful Uses of Nuclear Energy** was signed in November 2016 and entered into force in July 2017.

- o Under '**Nullification clause**', Japan can suspend cooperation with India if India breaches its no-testing pledge to the NSG.
  - o It was a **breakthrough for India as it became the first non-NPT signatory to enter into a civil nuclear cooperation pact with Japan** and thus in effect recognising the de facto status of India as a nuclear weapons power.
- **Other important countries**:
  - o **India and Mongolia** signed a crucial civil nuclear agreement in 2009 for supply of Uranium to India, making it the fifth nation in the world to seal a civil nuclear pact with India.
  - o **India and Canada** signed a civil nuclear cooperation agreement in 2010 which when all steps are taken, will provide access for Canada's nuclear industry to India's expanding nuclear market and also fuel for India's reactors. Canada is one of the world's largest exporters of uranium.
  - o In 2014, **India and Australia signed** a civil nuclear agreement which allows the export of uranium to India. Australia is the third largest producer of uranium in the world. The agreement allows supply of uranium for peaceful generation of power for civil use in India.
  - o **India-Kazakhstan** signed agreement on supply of nuclear fuel.
  - o **India-South Korea** signed an agreement to help built the nuclear reactors in India.

Significance of these agreements for India

- **To supplement its growing energy demands**. Nuclear power holds significant potential to be an important and cleaner option in India's energy basket and it also provides India with a leverage within the international nuclear energy framework.
- **Developing technological capabilities:** India has largest reserve of Thorium in the world (near 963000 tonnes), but lack technological capacity to exploit it. India's agreement with different countries will boost the mutual cooperation & acquisition of cutting edge technology at the competitive rate.
- **Crucial in according credibility to its status as a responsible nuclear power**

Global Centre for Nuclear Energy Partnership (GCNEP)

- **It** is **World's first nuclear energy partnership centre** at Kheri Jasaur village in Jhajjar district of Haryana.
- This center **facilitates deliberation and discussions of international experts on various issues** including innovation in nuclear reactors and the nuclear fuel cycle, development of proliferation-resistant reactors, security technologies and the effects of radiation exposure.
- **5 schools under it** are:
  - o School of Advanced Nuclear Energy System Studies (SANESS)
  - o School of Nuclear Security Studies (SNSS)
  - o School on Radiological Safety Studies (SRSS)
  - o School of Nuclear Material Characterization Studies (SNMCS)
  - o School for Studies on Applications of Radioisotopes and Radiation Technologies (SARRT)

- **Asserting its leadership position in the changing global order**: India's rise in the geopolitical sphere is encouraged partly by its deeper involvement in the nuclear energy sector and has facilitated its presence in the global civil nuclear framework.

Challenges for India

- **India's status as a non-signatory to the NPT**: remains a barrier that restrict its ability to realise the full potential of civil nuclear cooperation with the global community.
- **Issue of civil liability:** India enacted The Civil Liability for Nuclear Damage Act in 2010 following the 1984 Bhopal Gas tragedy which created mechanisms for victim compensation, provisions on recourse liability on suppliers and potentially unlimited liability under other laws. The issue of liabilities continues to be a challenge for India in its further engagements with other countries for civil nuclear trade.
- **Protests in the domestic front:** These protests have been a result of multiple concerns, such as diversion of water to the plants, environmental degradation, land acquisition, as well as issues of rehabilitation that lead to delays in the projects, which increases the cost of project implementation.
  - o For instance, in 1990, soon after the Kudankulam project in the state of Tamil Nadu was announced, a protest was held by nearby residents, opposing the diversion of water for the reactors from the Pechiparai dam in the Kanyakumari district.

Way forward

The growing concerns around nuclear safety and security have pushed developed countries away from their long dependence on nuclear energy. For developing countries like India, however, the choice between one source of energy over another is not as easy, given growing energy requirements and persistent development challenges. Therefore, **priority should be accorded to the continued development of safe mechanisms for the use of nuclear energy.**

- India must undertake a **proactive role in establishing and improving global mechanisms** through bilateral engagements and multilateral conversations so that states that are engaged in the civil nuclear industry are guided by strict guidelines and regulations.
- India should also undertake **public outreach efforts** that would assuage concerns not only in the domestic context, but also of those of the nuclear supplier countries.
  - At a domestic level, public participation should be incorporated at the planning stage, through initial studies relating to impact on environment, water balance and waste management systems; as well as issues of rehabilitation and resettlement.
- **The application of international liability frameworks** can remove the concerns of many supplier parties who may otherwise have been disincentivised by the Indian domestic liability law.

2.9. INDIA'S DEVELOPMENT EFFORTS IN AFGHANISTAN

Why in News?

Recently, India announced 100 projects worth $80 mn in Afghanistan.

India's developmental projects in Afghanistan

- India has **pledged more than US$2 billion in Afghanistan and invested in diverse areas** including healthcare, education, infrastructure, social welfare, and in the training of politicians, diplomats, and police (see infographic).
  - India is **fifth largest donor to Afghanistan and the largest regional donor.**
- India is implementing **high-visibility large-scale projects** in relatively stable areas and **low-visibility small development projects** (SDP) in relatively remote and insecure areas in order to increase its sectoral spread and geographic reach.
- Over the years, India has shifted focus from a **narrow security-centric approach**, **to regional confidence building,** development, governance, and trade and investment, aiming to use Afghanistan's resource potential to build its economic viability, sustainability, and independence.

Importance of these projects

- **Soft power approach:** Avoiding a security-centered role, India adopted a soft power approach, re-establishing cultural and historical links between the two countries.
- **Demand driven strategy:** Most Indian projects have been provided based on the needs and requests of the Afghan government. This strategy has generated a **significant amount of goodwill for India**.
- **Connectivity to Central Asia:** India has worked towards reviving the role of Afghanistan as a 'link' connecting South Asia and Central Asia. Some of the large-scale infrastructure projects in Afghanistan are geared towards achieving those objectives.
  - It will help India to fulfil its own energy needs and trade interests in Central Asia in the long-term.
- **Improving Afghanistan's connectivity:** Most of India's high-visibility and infrastructure development initiatives have veered around regional connectivity, trade, and transit. For landlocked Afghanistan, regional connectivity and access to the sea remains crucial.
- **Improving service delivery:** India's SDPs are designed to help provide basic service delivery and at the same time maximize Afghan participation and ownership, at both the government and community levels.

5 PILLARS
THAT DRIVE INDIA'S DEVELOPMENT PARTNERSHIP WITH
AFGHANISTAN

HUMANITARIAN ASSISTANCE
- Supply of 1.1 million MT of wheat to Afghanistan
- The Indira Gandhi Institute of Child Health (IGICH) - a 400-bed hospital that caters to the well-being of children from all across the country

INFRASTRUCTURE
- 218 km road from Zaranj to Delaram to help move goods & services to Iran border
- 220 kV DC transmission line from Pul-e-Khumri to Kabul and a220/110/20kV sub-station at Chimtala
- India-Afghanistan Friendship Dam (Salma Dam)
- New Afghan Parliament

ECONOMIC DEVELOPMENT
- Private investments into Afghanistan, such as through the India Afghanistan Trade and Investment Show in 2017
- 116 new 'High Impact Community Developement Projects' in 31 provinces of Afghanistan

CONNECTIVITY
- Chabahar Port development
- Direct Air Freight Corridor between India & Afghanistan established in 2017

CAPACITY BUILDING
- More than 3,500 Afghans undergoing various training programmes in India
- 1,000 scholarships per annum to Afghan nationals under Indian Council for cultural Relations (ICCR)
- 500 Indian Technical and Economic Cooperation (ITEC) slots to Afghanistan annually to strengthen its administration and governance

- **India has invested in training and capacity building,** working with legislators, parliamentary staff, and diplomats to develop the political sector.

Challenges in India's efforts

- **Security concerns:** Withdrawal of NATO-led Security Assistance Force personnel from Afghanistan has raised concerns about an unstable Afghanistan yet again turning into a springboard for destabilization and terrorism.
- **Pakistan's behind-the-scenes support for the Taliban** in destabilizing India's development efforts is aimed at neutralizing India's regional power expansion.
- **Lack of follow up support:** Increasing gap between short-term projects, which heighten people's expectations but with limited follow-up action or integrated plan in terms of job creation or building an industrial base is fueling despair and discontent among the local population.
- **Delay in project completion:** Issues of financing and capacity lead to delays in large-scale infrastructure projects like in the case of the Salma Dam and the new Parliament building. Also, issues of quality control remain.
- **Lack of Monitoring:** Monitoring of these projects remains a challenge and in insecure and inaccessible districts, matters can be much worse.
- **Sustainability challenge:** In the face of a deteriorating security situation and insurgent influence or control of territory, the sustainability of these projects is doubtful. E.g. In insurgent controlled areas, the construction of a clinic or school without health workers or teachers could easily turn into a ghost project (Projects reflected only on plans but are not implemented in reality).
- **Mismatch with needs of people:** Sometimes aid delivered is not always in harmony with the needs of the community. For example, the primary need of the residents of a village might be source of drinking water, they were instead provided with a school.

Way forward

India **needs to shift its focus from asset creation to programme delivery.** Some recommendations for immediate, medium-term (one to five years), and long-term (five to 10 years) policy interventions:

- In the immediate and medium-term, **there is a need to establish small and medium-sized enterprises** to help revive the Afghan indigenous economic base.
- Projects that address the **needs of poor people in rural and remote areas should be targeted towards income generation schemes,** rather than focused only on health and education.
- Greater **intervention in the agriculture sector is needed** to help vulnerable communities. There is a need for assistance in agricultural modernisation, satellite imagery, vocational training centers, and technical assistance.
- **Accountability mechanisms,** as well as monitoring of the aid disbursed needs to be built into the aid delivery programme.
- **Broad based approach involving players with overlapping interests in Afghanistan in development of projects.** E.g., India and China launched a program to train Afghan diplomats and China's ambassador.

Some development projects by India in neighbouring countries

- **Bhutan:** India is Bhutan's **largest development partner** and the Bhutan is highest recipient of India's overseas aid. Bhutan received from India a total of $ 4.7 billion in grants between 2000 and 2017. Some projects include, Mangdechhu Hydroelectric Project, Trade route from West Bengal to Ahlay, Pasakha in Bhutan.
- **Bangladesh:** Key projects include rail links between Akhaura-Agartala, and Khulna-Mongla, Maitree Thermal Power Project a 50:50 joint venture inked by Bangladesh Power Development Board and NTPC India, India-Bangladesh Friendship Pipeline connecting Siliguri in West Bengal and Parbatipur in Bangladesh.
- **Maldives:** India is assisting in USD 500 million **Greater Male Connectivity project,** the largest civilian infrastructure project in Maldives, reclamation project for the Addu island. Also, India assists through **High Impact Community Development Projects** in the areas of livelihood and income generation, health, education, gender and child empowerment, etc.
- **Myanmar: Kaladan** Multi-Modal Transit Transport Project, India- Myanmar-Thailand Trilateral Highway Project, **Integrated Check Posts (ICPs) on India-Myanmar border etc.**
- **Nepal:** India has been supporting construction of various Highways, Roads, Bridges, Airports, etc. as part of its multi-sectoral and multi-dimensional **India-Nepal Economic Cooperation Programme** e.g., Terai Roads project (10 roads), housing reconstruction project (50,000 houses) etc., Motihari-Amalekhgunj petroleum pipeline, Pancheshwar multipurpose project, motorable bridges over Mahakali River etc.

- **Sri Lanka:** Development projects in Jaffna like funding for Jaffna international airport, cultural centre at Jaffna; **The Indian Housing Project**, with an initial commitment to build 50,000 houses for the war affected; development of a container terminal at **Colombo Port in collaboration with Japan.**

2.10. INDIA- NEPAL TIES

Why in News?

Recently, Foreign Secretary visited Nepal to improve bilateral ties between two countries.

Background of India Nepal relations

- **India-Nepal Treaty of Peace and Friendship of 1950** forms the bedrock of the special relations that exist between India and Nepal.
- **Nepalese citizens avail facilities and opportunities on par with Indian citizens** in accordance with the provisions of the Treaty.
- Nearly **8 million Nepalese citizens** live and work in India.

Recent shifts in relations

- **Boundary disputes:** Despite India's objection, Nepal issued a new political map that included disputed areas including the Limpiyadhura, Lipulekh and Kalapani (Parts of Uttarakhand).
- **Changing nature of traditional business ties:** For many small and medium Nepali businesses, it is now easier to trade with China as rules have made it harder to do business with India.
  - Despite open borders, complex regulatory requirements (complex documentation, difficulty in cash movement etc.) have complicated import-export between the two countries.

> **India- Nepal cooperation in various fields**
> - **Defence cooperation:** India has been assisting the Nepal Army in its modernization, providing assistance during disasters etc. Also, currently, about 32,000 **Nepalese Gorkhas are serving in the Indian Army.**
> - **Water resource Cooperation:** A three-tier bilateral mechanism was established in 2008 to discuss issues relating to cooperation in water resources, flood management, inundation and hydropower between the two countries.
> - **Energy Cooperation:** India and Nepal have a Power Exchange Agreement since 1971 for meeting the power requirements in the border areas of the two countries, taking advantage of each other's transmission infrastructure.
> - **Economic Cooperation:** India is the largest trading partner of Nepal. Total bilateral trade in 2018-19 reached US$ 8.27 bn.
> - **Education:** India provides around 3000 scholarships/seats annually to Nepalese nationals for various courses at the Ph.D/Masters, Bachelors and plus–two levels in India and in Nepal.
> - **Culture:** Cultural links between Nepal and India have many facets, ranging from religion, language, cuisine, movies etc. Nepal, with its unique geography, history and cultural heritage, still is an integral part of the broader cultural history and tradition of Indian sub-continent.

- **Ideological basis-** The communist parties in Nepal have favored China and consistently protested against India. This time around the Nepali Congress also favored them.
- **China factor:** China opening port facilities to Nepal and providing access to Trans Himalayan Railway reduces Nepal's dependency on India. Also, Nepal has joined China's Belt and Road Initiative.
- **India's alleged role in Nepal's internal politics:** India's implicit support for the 2015 blockade on the landlocked country, anti-Indian sentiments have been running high.

Measures needed to strengthen relations

- **Amendments to the Peace and Friendship Treaty of 1950:** Nepal wants amend certain clauses in the 1950 Treaty like the one which requires it to seek India's permission to import arms from third countries. The **Eminent Persons' Group set up jointly by the two countries to review their bilateral relations** also recommended revision of the treaty.
- **Addressing Infrastructure need of Nepal:** Nepal has been calling for expeditious implementation of mega Indian projects like Pancheshwar multi-purpose project and asked for investment in sectors like hydropower, agriculture, tourism, infrastructure and IT.
- **Strengthening Economic cooperation:** It holds immense significance and potential for both the countries. There is a need to craft a new approach that allows ordinary Nepalis to access opportunities India's economic growth offers.

- **Nepal needs to assuage India's concerns about Chinese activities** in Nepal. India needs to minimize interference by acknowledging Nepal's strategic, political and economic compulsions. Also, Nepal should also keep an eye on illegal activities like human trafficking, black money dealings and terrorist intrusions which constitute a major security concern for the Indian establishment.
- **Revival of South Asian Association for Regional Cooperation (SAARC)**: Though India has been engaging through, Bay of Bengal Initiative for Multi-sectoral Technical Economic Cooperation (BIMSTEC), the Bangladesh Bhutan India Nepal Initiative (BBIN) etc. the institutional and multisectoral cooperation under SAARC rooted in South Asian identity cannot be replaced.

Conclusion

Centuries of social, cultural, political, strategic, and economic ties can only remain strong if they can remain relevant to changing times. The governments of India and Nepal must **reset the narrative and modernize their policies** so that the ties between people thrives again. India should put all major bilateral issues on the table for renegotiation — including the 1950 treaty, national treatment to Nepali citizens in India, trade and transit arrangements, the open border and visa-free travel.

3. ECONOMY

3.1. CHANGES IN BANK LICENSING FRAMEWORK

Why in news?

Recently, the Reserve Bank of India's (RBI's) Internal Working Group (IWG) has suggested revised the licensing norms for the Banking Industry.

What is a Banking License?

According to the **Banking Regulation Act, 1949**, no company in India shall **carry on banking business, unless it holds a license issued in that behalf by the Reserve Bank of India** and any such license may be issued subject to such conditions as the Reserve Bank may think fit to impose.

The licensing arrangement **facilitates the regulation of the sector** by ensuring that the banking activity is seamless and adheres to financial probity and adequate protection is provided to the depositors by the Bank.

What are the suggested changes by the IWG?

- **Large corporate and industrial houses** may be allowed as promoters of banks.
  - The cap on promoters' stake, in the long run, might be raised from the current level of **15 per cent to 26 per cent of the paid-up voting equity share capital of the bank**.
  - It suggested **increasing the initial paid-up capital or net worth required** to set up a new universal bank to ₹1,000 crore; for SFBs to ₹300 crore and for urban cooperative bank transiting to SFBs, it is ₹300 crore in five years.
  - The report offers industrial houses two options — either make a **straightforward application for a license**, or those that already have lending operations can **convert their existing businesses to a bank.**
- **Well-run large non-banking finance companies (NBFCs),** with an asset size of Rs 50,000 crore and above, including those which are owned by a corporate house, may be considered for conversion into banks, subject to completion of 10 years of operations.
- Other changes suggested by the report:
  - **Small Finance Banks and Payment Banks:** The panel also suggested that payments banks can convert into small finance banks after three years of operations, potentially benefiting Paytm, Jio and Airtel payments banks.
  - **Capping of banks' investment in any new or existing entity to 20%.** However, they may be permitted to make total investments in a financial or non-financial services company, which is not a subsidiary or joint venture or associate up to 20% of the bank's paid-up share capital and reserves.

The report also stated that whenever a new licensing guideline is issued, if new rules are more relaxed, the benefit should be given to existing banks, immediately. If new rules are tougher, legacy banks should also confirm to new tighter regulations, but transition path may be finalized in consultation with affected banks.

3.1.1. BANKING LICENSE TO LARGE CORPORATE HOUSES

Introduction

Since the nationalization of 14 large private banks in 1969, the RBI has not given licenses to large corporate and industrial houses for setting up banks. At present, there are 12 old and nine new private banks (established in the post-1991 period) with the majority of ownership held by individuals and financial entities. This is set to change if large corporate and industrial houses are allowed to act as promoters of banks.

This step comes a decade after the global financial crisis, after which **most developed nations turned cautious on this idea.** For instance, in the recent past, **RBI has not been very liberal with banking licenses**. The last two licenses were given seven years ago to IDFC First Bank and Bandhan Bank with a specific objective of achieving financial inclusion. Before these, RBI gave two licenses to Kotak Mahindra Bank and YES Bank.

Potential benefits from implementation of the suggestion

- **Aid in capitalization:** The recommendations could usher in a fresh wave of consolidation in the sector as several lenders are struggling to meet minimum capital norms because of a surge in bad loans. Larger play by private sector in the lending space could help in capitalization of the sector as state's capacity is limited.

- A direct corollary of capitalization by the private sector would be decreased pressure on the fiscal balance sheet with regard to recapitalization of PSBs.
- **Re-entry of India Inc in the Banking Sector:** Many of the biggest industrial groups had aspired for this ever since private players were allowed into banking after 1993. This may help enlarge the Banking industry in India which is nascent when compared at the global stage.
- **Greater Competition:** The entry of corporate players would engender greater competition in the Indian banking sector by increasing the supply of financial products available for customers.
- **Diversifying banking option for depositors:** Recommendations promote more open access to the country's deposit base, while charting a future course for asset specialists too. Business models that stand on a single solid leg (asset or liability) will see future in partnership or merger.

Potential challenges arising from its implementation

- **The problem of connected lending:** Connected lending when promoters of private banks, corporate and industrial houses channel large sums of low-cost depositors' money into their own group companies.
  - **During 1947-58, connected lending practices were rampant in India**. These practices created a scenario where bank failures ballooned, for instance, 361 banks of varying sizes failed in India.
  - Also, over the years, the **potential risks associated with connected lending have increased** manifold because of the quantum leap in size and complexities in corporate India.
- **Circular Banking:** Under circular banking, a corporate-owned bank A would finance the projects of corporate-owned bank B, B would finance the projects of corporate-owned bank C, and C would finance the projects of A, completing the cycle. This creates a backdoor for bypassing the regulations against connected lending.
- **Large stakes:** India follows a bank-based financial system with banking assets accounting for 75% of the total assets held by the financial system. Entry of large corporates into the banking sector could endanger the sector because of governance and financial stability concerns. Endangering the banking sector in turn could lead to a collapse of the overall financial framework.
  - Further, **corporate ownership of banks would further concentrate economic power** in the hands of a few corporate and industrial houses. Increased economic concentration would have adverse effects on the domestic economy and politics leading to issues like Crony Capitalism.
- **Excessive competition could be counter-productive:** There is a growing recognition in academic and policy circles that increased competition in the banking industry may be good for efficiency and innovation but bad for financial stability. The 2008 global financial crisis is a case in point. **Maintaining a fine balance between efficiency levels of competition and financial stability remains a key challenge for bank regulators.**
- **Corporate Governance Issues:** The IWG has admitted that- "the prevailing corporate governance culture in corporate houses is not up to the international standard and it will be difficult to ring fence the non-financial activities of the promoters with that of the bank."
  - In India, incidents of **frauds and defaults are increasing at an alarming rate** across the spectrum. For instance, the Satyam Computer Services scandal reflects the loopholes prevalent in Corporate Governance framework.

Way forward

The IWG recommends that large corporate/industrial houses may be permitted to promote banks only after necessary amendments to the Banking Regulations Act, 1949 to deal with connected lending and exposures between the banks and other financial and non-financial groups.

Alongside this amendment, efforts should be made to ensure that the financial stability of the banking sector is not disturbed and internal reforms within the organizations are nudged, thus moving them towards more honest and robust corporate governance.

3.1.2. BANKING LICENSE FOR NBFCS

Introduction

If RBI allows the large industrial houses to convert their NBFCs to full-scale banks, they straightaway will be bigger than many mid-sized banks thus inducing big changes in the banking landscape. This step becomes even more significant in the light of large-scale consolidation of the Public Sector Banks (PSBs).

Potential benefits from implementation of the suggestion

- **The asset liability mismatch issue highlighted by the IL&FS crises:** The current change in thinking in the RBI and the government is also because of the risk large NBFCs pose to the financial system. The debacle of IL&FS and Dewan Housing Finance Corporation Limited (DHFL) has shown that asset liability mismatches could create a problem for the entire financial services sector.
- **Access to deposits:** The access to public deposits which the NBFCs will enjoy after converting to a bank would help the sector riddled with liquidity crunch. This may help resolve the liquidity problems faced by the financial sector as a whole.
- **Opportunity of better oversight:** Major NBFCs with regard to their size of operation deserve to get bank license in the private sector. They are already regulated and supervised by the RBI. Turning them into banks will give RBI the opportunity for greater oversight.

Potential challenges arising from its implementation

- **Associated costs in becoming a bank:** Maintenance of cash reserve ratio, statutory liquidity ratio and cap on promoter shareholding are some of the rules that may make it expensive for NBFCs to become a bank.
- **Possible reluctance of NBFCs:** Indian business houses may not be entirely comfortable with the potential increase in oversight on their group company activities that the banking regulator may have. Increased regulation would mean less freedom and flexibility in conducting business.
- **Poor performance of NBFCs:** In the recent past, the financial performance of NBFCs has not been up to the mark which will make investors skeptical. In this regard, the investor confidence and the potential success of this step is to a large extent dependent on the performance of NBFCs in the next few quarters.

Way forward

Conversion of larger non-banking financial companies (NBFCs) to bank can help through reduced dependence on wholesale liabilities, better regulatory supervision, timely regulatory intervention in case of a failure and asset diversification in loner run. But this needs to be accompanied by incentives for the NBFC sector and simultaneously governance reforms in the sector to improve investor confidence.

3.2. GST TUSSLE

Why in news?

Recently, a tussle had ensued between the Centre and States as there was an estimated shortfall of Rs. 30,000 crores in the GST Compensation Cess.

What is GST Compensation Cess and the tussle over it?

GST was implemented through the GST (101st Amendment Act), 2016 as a long pending indirect tax reform. It is a single tax that replaces multiple other indirect taxes. The Centre lost out on its power to levy taxes such as excise duty, while the States could no longer levy entry tax, VAT etc. To allay the fears of States regarding loss of revenue, following mechanism was made:

- GST (Compensation to States) Act, 2017 was enacted:
  - o Under the Act, the percentage of **annual revenue growth of a State has been projected to be 14%**. If the annual revenue growth of a State is less than 14%, the State is entitled to receive compensation under the statute.
  - o The **compensation payable to a State** shall be provisionally calculated and **released at the end of every two months period.**
- The generation of revenue under the Act would happen through a GST Compensation Cess:
  - o The cess comprises the **cess levied on sin and luxury goods for five years.**
  - o The entire cess collected during the year is required to be **credited to a non-lapsable Fund (the GST Compensation Cess Fund).**
  - o The collected compensation cess flows into the CFI and is then **transferred to the Public Account of India,** where the GST compensation cess fund has been created.

The issue arose when payments due for August-September 2019 were delayed. Since then, all subsequent payouts have seen cascading delays. The problem has aggravated and further compounded due to following reasons:

- **Persistent Economic Slowdown:** The slowdown has impacted the demand and consumption levels and has thus dented the overall GST collections (both Centre and States).
- **Effect of the Pandemic:** The pandemic has given an economic shock to the Indian Economy which has dented the tax collection expectations (including the collections from GST Compensation Cess) of both Centre and States.
- **Estimation of 14% revenue growth unrealistic:** The high rate of 14%, which has compounded since 2015-16, has been seen as delinked from economic realities. In the initial meetings of the GST Council, a revenue growth rate of 10.6% (the average all-India growth rate in the three years preceding 2015-16) was proposed but 14% revenue growth was accepted "in the spirit of compromise".

As a result of these issues, the stalemate reached at a point where States were looking at the GST shortfall of Rs. 30,000 crore and the Centre being in no position to provide for it.

What is State's stance on the issue?

Since the GST Compensation acts as a **harbinger of State's trust on Centre**, non-compliance on this agreement has the potential to erode the trust between the Centre-State relationship. In this context, several States have expressed following issues:

- **Centre not honoring its moral and legal obligation:** Finance Ministers of both Kerala and Punjab have argued that the Central Government has a legal, and a moral obligation to compensate the State Governments for the revenue shortfall. A deadlock so early in the implementation of GST has made States skeptical about the future of Fiscal Federalism.
- **Ineffectiveness of the GST Council:** Any dispute regarding GST is to be handled by the GST Council but in the recently concluded 39th GST Council meeting, no steps were taken to create such a dispute resolution mechanism. With a 1/3rd voting power, the Centre has a virtual veto over the decision making in the council (since 3/4th majority is needed to pass a decision). This has made the States question the functioning structure of the Council itself.
- **Resort to legal proceedings:** In the absence of an alternate remedy, the only option left for states like Kerala and Punjab is to approach the Supreme Court under Article 131 of the Constitution. Such a judicial remedy to establish fiscal federalism of the states would erode even the limited institutional capital present between Centre and States.

What is Centre's stance on the issue?

The stand of the Centre on these issues is not based solely on the response to the States but in the background of **low economic growth and negative tax buoyancy rates** (percentage change in tax revenue to percentage change in GDP) which is in addition to almost 25% reduction in collection of Corporate taxes. In this background, the Centre has taken following stands:

- The Centre has refused to compensate the States immediately but has **provided the States with two options** (to make good either the shortfall in compensation arising from GST implementation or the overall shortfall).
  - o **Option 1**: It offered states to borrow the shortfall arising out of GST implementation, to be borrowed through issue of debt under a special window coordinated by the Ministry of Finance. The option is to ensure steady flow of resources similar to the flow under GST compensation on a bi-monthly basis.
  - o **Option 2**: It has offered the states to borrow the entire compensation shortfall (including the COVID-impact portion) through issue of market debt. The states will not be required to repay the principal from any other source. However, the interest shall be paid by the states from their own resources.
- The Centre has alongside contended that the revenue shortfall is on account of the COVID-19 pandemic, which is an '**Act of God'**, stating that it has **no legal obligation to compensate the States** in this scenario**.**
- It has also argued that the inflows to the **GST Compensation Fund are to be made from the GST Compensation Cess** and if that is inadequate, the Centre is not obligated to supplement it by diverting flows from other sources.

The Resolution

The stalemate was finally broken with **all 28 States and 3 UTs with legislatures going with the Option 1** provided by the Centre. Under this option, the Centre has operationalized a special borrowing window of 1.1 lakh crore of which 30,000 crore has been already borrowed by Centre on behalf of the States.

The primary advantage states have here is that the interest on the borrowing under the special window will be paid from the cess as and when it arises until the end of the transition period. After the transition period, principal and interest will also be paid from proceeds of the cess, by extending the cess beyond the transition period for such period as may be required. The states will not be required to service the debt or to repay it from any other source. Moreover, states will also be given permission to borrow the final instalment of 0.5 per cent of GDP (to be availed under Atmanirbhar Bharat Abhiyan) even without meeting the pre-conditions.

As this being the debt of the State, it will not reflect in the fiscal balance sheet of the Centre thus creating a **win-win in the short term for both sides.**

What are the concerns that remain?

Although the immediate issue has been resolved but the helplessness experienced by the States and Centre's response on the issue has highlighted several potential concerns for the future:

- **Apprehensions regarding changing Dynamics of Fiscal Federalism:** The estimated Rs 30,000 **crore shortfall has come at a time when waning fiscal federalism is a burning issue**. For instance, Centre's latest decision to suspend the Members of Parliament Local Area Development (MPLAD) Scheme and divert that money to the Consolidated Fund of India is being cited as a step towards the centralization of country's financial resources.
- **Persistence of crises in the absence of revenue augmentation:** The central issue in the GST tussle is the shortage of fiscal resources available collectively to both Centre and States. If the revenues do not get augmented, either one or both will have to face the brunt.
- **Expression of doubt by States on Centre fiscal credibility:** Many of the states have expressed doubt over transparency in handling of GST Compensation Cess. For instance, the CAG had reported that the Union government in the very first two years of the GST implementation wrongly retained Rs 47,272 crore of GST compensation cess that was meant to be used specifically to compensate states for loss of revenue.

Way forward

- **Rebuilding institutional capital to soothe the Centre-State relationship:** Efforts could be made **rejuvenate and rekindle the Inter-State Council** as the body not only has constitutional backing but its mandate and nature of participation is ideally suited for a larger federal role.
  - Alongside the Inter-State Council, efforts could be made to **increase political capital through institutions like Chief Minister's Conference.**
- **Widening the ambit of GST for revenue augmentation:** The current coverage of GST excludes electricity, petrol, diesel and real estate, as also agriculture. Widening the ambit of GST could provide a larger base for taxation in the long run.
- **Structural reforms:** The augmentation of revenue in the long-term will require structural reforms like reviewing of GST on continuous basis and increasing tax compliance.
- **Increasing transparency in Fiscal management:** Increasing transparency in areas like working of GST Council, adhering to the procedure established by the GST Compensation Act, and decreasing over-reliance on cesses and surcharges could repose the lost faith of States in Centre's Fiscal Management.

3.3. INFLATION TARGETING

Why in news?

In March 2021, the Inflation Targeting regime in India will complete 5 years. This has brought to the fore the need for a performance review of the current framework.

What is inflation targeting (IT)?

A central bank commits to keeping inflation below a certain threshold and use tools like interest rates and other liquidity adjustment measures to achieve this objective while maintaining growth. For example, if inflation is high, RBI can increase the Repo rate which decreases the available liquidity in the market and consequently the Inflation.

In the recent past, several countries have been opting for inflation targeting as a monetary policy objective due to following reasons:

- **Strong correlation with market demand:** Various studies have shown that price levels have a direct correlation with market demand. As a result, inflation targeting has the potential to tweak demand for ensuring both financial stability and continuous growth.
- **Predictable and easy to understand for private sector and residents:** Under IT, monetary policy is designed towards an unambiguous goal of achieving price stability upon which the private sector can anchor its expectations about future inflation. Also, inflation as a nominal anchor is simple and easily communicated by the public at large.
- **Targeting mechanisms generally increase transparency:** The targeting regime is generally accompanied by regular communication of Monetary Policy standing through regular publication of policy statements and policy reports. This transparency enables the government and the public to assess information about whether the central bank has achieved its objectives.
- **Impact on other economic parameters:** Some countries have seen other benefits like declining exchange rate volatility and improved financial credibility of government post implementation of an IT regime.

How the inflation targeting framework operates in India?

The IT framework in India was initiated through the Inflation targeting agreement of 2015 which further culminated into the amendment of the RBI Act in 2016. The Act provided for the following framework:

- It tasked the monetary policy with the goal of **achieving price stability** while **keeping in mind the objective of growth.**
- To fulfill this objective, a **Monetary Policy Committee (MPC)** was created by amendment of the Reserve Bank of India Act, 1934.
  - o **MPC consists of six members- three internal and three external**: The internal members comprise of the Governor of the RBI as the Chairperson, the Deputy Governor incharge of monetary policy and one officer of the RBI to be nominated by the Central Board of the RBI. The three external members are to be appointed by the Central Government. The external members should have knowledge and experience in the field of economics, or banking or finance or monetary policy.
  - o The **MPC** has been entrusted with the **task of fixing the policy rate** required to achieve the inflation target.

> **Why CPI was chosen as measure of Inflation?**
> CPI measures the inflation levels at the level of the consumer expenditure. By virtue of its construction, it has following advantages:
> - CPI **represents consumer baskets better** than the other measures like WPI.
> - CPI provides **information on price movements in services sector** also.
> - CPI **includes Food Inflation** which is a critical part of price stability objective in emerging markets like India.

- The Act adopted year-on-year changes in the headline **Consumer price Index (CPI)** as the measure of inflation target. The **target was fixed at 4% with an upper and lower tolerance band of 2%.**
  - o This target is to be **reviewed every five years.** (Note that the law requires a review of the inflation target and not the framework as a whole)
- The Act has mandated following working methodology for the MPC:
  - o The policy rate (different from the Inflation Target) is determined by **majority voting among the members of the MPC**. In case of equality of votes, the Governor will have a casting vote.
  - o It requires that **MPC must meet at least four times in a year.**
  - o The **resolution** adopted by the Monetary Policy Committee **must be published after the meeting of the MPC.**
  - o RBI **must publish minutes of the MPC meeting** after every meeting.
  - o **RBI must publish a report on monetary policy twice a year.** The report should outline the sources of inflation and short-medium term forecasts of inflation.
  - o In the **event of failure to achieve the inflation target**, the Act lays down that the RBI will inform the Central Government-
    - ✓ The **reasons for failure** to achieve the inflation target.
    - ✓ The **remedial actions it proposed** to take.
    - ✓ **An estimate of the time within which the inflation target shall be achieved** after the implementation of the remedial actions.

Performance of Inflation targeting in India

- **Control over inflation:** Inflation reduced from a high of more than 10% before 2014 to a more comfortable value after IT. For instance, the average inflation rate between October 2016 and March 2020 was below 4%.
- **Stability in Inflation expectations:** The inflation forecasts of financial professionals and the responses to inflation forecasts of households declined with the shift to IT, although household expectations of inflation continue to consistently exceed actual outcomes. As a result, increases in actual inflation now do less to excite inflation expectations, indicative of improved anti-inflation credibility.
- **Behavior of ancillary variables:** The IT regime has had a stabilizing effect on ancillary variables like exchange rates, equity markets etc. For example, the money market conditions have been broadly orderly and in tandem with the changes in repo rate.
- **Increased expression of diversity at policy level:** The working of MPC has saw expression of independent viewpoints from both external and internal members. This indicates towards improved robustness of the Monetary Policy Framework which indirectly ensures a delicate balance between price stability and economic growth.

What are the challenges that still remain?

- **Narrow objective:** Some experts argue that RBI has objectives to take care of other parameters like economic growth, stable exchange rate and financial stability, and cannot restrict itself to the single objective of inflation.
  - For instance, some market stakeholders believe that the RBI does not cut rates easily or as much as they would like to see. This is **interpreted as the RBI not giving growth as much importance as inflation.**
- **Pre-requisites of effective inflation targeting:** IT demands a number of pre-conditions for its successful implementation in the long-term such as independence of central banks, well developed financial markets, flexible exchange rate, etc. Most emerging economies, including India may not be able to fulfil it in the near future.
  - The consequence of not fulfilling these preconditions could be that the transmission mechanism of the IT system in the country may not be very strong. For example, sometimes change in Repo Rate by RBI is not effectively transmitted to change in inflation levels.
- **Issue of accuracy and limited availability of data:** An inflation-targeting regime requires vast amount of data in the form of assessment of inflation in the medium term, forecasts on economic growth and other indicators of financial stability like estimates of foreign investment etc. There is a limited buffet of indicators that the RBI can use. Also, several institutions including the RBI have questioned the accuracy of the data given large discrepancies and considerable time-lag in data collection.
- **Designed for demand driven inflation systems:** It is argued that the IT system is mainly designed for countries where the inflation is due to demand factors, whereas in India, it is the supply side factors which are causing inflation.

COVID-19 and Inflation targeting

The outbreak of such pandemic and its effect on the economy creates a precarious situation where the economy **faces a negative supply shock as well as a negative demand shock,** as firms halt investment projects and households increase their precautionary saving and see their incomes fall.

This creates ambiguity for the IT regime because **raising the policy rates can further dampen the demand and economic growth.** Also, **cutting the policy rates could spur inflation and decrease the confidence of market participants** in the IT regime consequently triggering non-responsiveness on MPC decisions.

Being on the safe side, the standard course of action for an inflation-targeting central bank would be to **cut rates – or at least to refrain from raising them** – if the negative supply shock is temporary. If the shock is temporary, there will be higher prices and inflation now but lower prices and less inflation, or even deflation, in the future. The central bank should therefore be able to "look through" today's inflation and adopt a relatively long horizon when formulating its inflation forecast.

What can be done to overcome these challenges and further strengthen the IT regime?

- **Coordination between Monetary Policy and Fiscal Policy:** Many central banks (e.g., UK) worldwide have the concept of a non-voting representative from the Treasury who attends meetings, expresses the views of the Ministry of Finance, and participates in the discussions. A government non-voting member is a way to coordinate and yet not interfere. This could ensure the much-needed balance between inflation control and economic growth.

- **Improving data collection and analysis framework:** Reforming the data collection methodologies and framework on lines of draft National Statistical Commission Bill, 2019 can be envisaged.
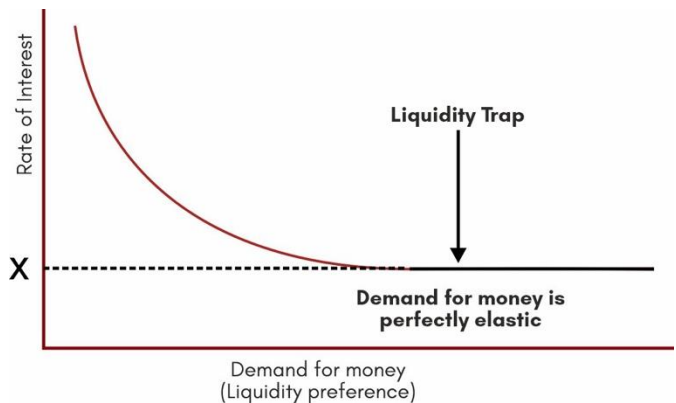
3.4. LIQUIDITY TRAP

Why in news?

Recently, the IMF economist Gita Gopinath stated that the global economy may be heading towards a liquidity trap.

What is a liquidity trap?

A liquidity trap is a contradictory economic situation in which interest rates are very low and savings rates are high, rendering monetary policy ineffective. It leads to a scenario where any additional money supply that is generated in the economy get channeled towards savings rather than investment thus rendering the economy to remain at same liquidity level.

Is the global economy stuck in a liquidity trap?

The economic situation created by the pandemic has led to following developments which indicate towards a liquidity trap:

- **Very low interest rates:** 60 per cent of the global economy -- including 97 per cent of advanced economies -- central banks have pushed policy interest rates below 1 percent. In one-fifth of the world, they are negative. As a result, **central banks have little room to further cut interest rates** if another shock strikes.
- **Global demand still sluggish:** Despite the extremely low interest rates, the global demand is still sluggish due to the impact of the COVID-19 pandemic.
- **Threat of a potential currency war:** Due to decrease in interest rates, money supply around the world would increase which can potentially trigger a currency war due sliding exchange rates in the trading arena.
- **Effects reaching the developing world:** Generally, the developing countries are unlikely to develop this problem due to high average interest rates. But recently, developing countries like Peru and Chile have almost brought the borrowing costs to zero due to their crashing economies, thus signaling a liquidity trap.

Should India worry?

The second-order effects of lockdown in India could later see demand slump again to drag India's economy down. In this context, we **risk slipping into a liquidity trap if inflation fails to fall below 6%** within a quarter or so, as projected by the RBI. (As the policy rates have been brought close to 4%) This calls for a circumspect approach on part of India with regard to its fiscal as well as monetary policy.

What could be done as remedial measures?

- **Global synchronized fiscal push:** Fiscal authorities can actively support demand through cash transfers to support consumption and large-scale investment in medical facilities, digital infrastructure and environment protection.
- **Coordination and collective easing of the monetary policy:** Increased global coordination can potentially deter a global deflationary path which may lead to prolonged recession. This would be akin to the Quantitative Easing (QE) measures which were initiated by US.
- **Revisiting global economic arrangements:** Reevaluating the global arrangements like trade agreements and global supply changes could help better invest the calibrate the available liquidity.

3.5. MSP AND PROCUREMENT

Why in news?

The recently passed Agri.-reform Bills have created apprehensions among farmers that these legislations will ultimately lead to the dismantling of the MSP regime.

Procurement regime in India

The procurement mechanism in India functions as an assured market for farmers and plays a role to guide the cropping patterns and incentivize production. To enable procurement Government has instituted a floor price for agricultural produce, namely Minimum Support Price (MSP).

MSP serves as a Procurement Price and is used as a market price benchmark. Government notifies MSPs annually for 23 commodities inclusive of 14 kharif, 7 rabi and 2 calendar year season crops. In addition to these 23 crops, Government also notifies Fair and Remunerative Prices (FRP) for sugarcane and jute. The Government notifies MSPs based on the recommendations of an independent body, called **Commission for Agricultural Costs and Prices (CACP)**.

A2 vs. C2 debate

The CACP determines the MSP based on the expenses incurred by the farmer. It is determined in following manner:

- **Expenses incurred (A2)** is estimated by considering cost of production, changes in input price, trends in market prices, demand and supply situation, inter-crop price parity, effect on general price level, effect on cost of living, international market price situation, etc.
- The final MSP is determined as a **function of expenses incurred (A2) and the imputed value of family labour (FL).**

There have been demands for considering a different costing method (C2). Adopting C2 will entail following changes:

- It would include the **rent paid for any leased-in land**, the **imputed rent** for the owned land, the **interest on owned fixed capital**, and **imputed value of wages to family labour**, in addition to the Cost A2.
- It is also argued that **50 per cent of Cost C2 should be added as the profit component**, for determining the MSP.

With the aforesaid framework for MSP, the existing procurement mechanisms by the government are implemented under:

- **Price Support Scheme (PSS):** Applicable in case of MSP notified crops.
- **Market Intervention Scheme (MIS):** To support commodities, for which MSPs are not notified - fruits/vegetables/other horticultural products.
- **Price Stabilization Fund (PSF):** A scheme to protect consumers from rising prices.
- **Food Corporation of India operations for Central Pool:** Wheat and Paddy is procured to meet buffer norms and for meeting targets of the public distribution system.

Reform initiated through PM-AASHA

An umbrella scheme has been initiated to further ensure remunerative prices to the farmers for their produce, namely Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA). Following are the key components of the Scheme:

- **Price Support Scheme (PSS)**: In Price Support Scheme PSS, physical procurement of pulses, oilseeds and Copra will be done by Central Nodal Agencies with proactive role of State governments.
- **Price Deficiency Payment Scheme (PDPS)**: Under PDPS, direct payment of the difference between the MSP and the selling/modal price will be made to pre-registered farmers selling his produce in the notified market yard through a transparent auction process. All payment will be done directly into registered bank account of the farmer. This scheme does not involve any physical procurement of crops.
- **Pilot of Private Procurement & Stockist Scheme (PPPS):** In addition to PDPS, it has been decided that for oilseeds, states have the option to roll out Private Procurement Stockist Scheme (PPSS) on pilot basis in selected district/APMC(s) of district involving the participation of private stockist.

What are the prevalent issues with the procurement framework in India?

- **Limited reach of procurement:** Status of procurement linked to MSP has not been secular either in terms of crops covered or geographic spread. For example, in case of wheat, of the average of 33 per cent of marketed surplus procured, 90 percent procurement is accounted only from Punjab, Haryana and Madhya Pradesh.
- **Largely benefited wheat and paddy farmers:** The procurement of other MSP notified commodities has not been very encouraging. For instance, procurement of oilseeds remained at abysmally low 0.66 percent of the total production.
- **Poor operation of the Price Support Scheme** as can be seen with total procurement of pulses being at only 10 percent of the marketed surplus.

- **Procurement of perishables under MIS is still negligible.**
- **Delayed action:** Market participants have argued that delayed intervention on part of the government in distress situation **benefits the intermediaries more than the farmers**.
- **Shift in production and consumption patterns:** The price and procurement-based interventions have contributed towards higher supply and a supply driven shift towards rice-wheat consumption and cropping. The unseen consequence of this calorie-dominant food security approach has been nutritional deficiency.

What can be done to overcome these issues and strengthen the procurement system in India?

Following recommendations have been suggested by the Report of the Committee on Doubling Farmer's Income (chaired by Ashok Dalwai):

- **Adopting a more robust system of procurement**: It recommended, that in addition to strengthening the existing procurement schemes, more such tools be developed and deployed to **enhance the support and its reach across the country & across crops**, besides **improving speed of response and effectiveness of procurement**, in cases where prices may drop below MSP.
- **Timely market interventions:** Market interventions are also triggered by price linked eventualities. The extent and time of any market intervention should aim also at normalizing the fluctuations in market prices and more importantly the downslide of prices due to temporal post-harvest gluts.
- **Increasing diversification in procurement interventions** There is need to revisit the strategy on demand and supply, including PDS system, for balancing the nutritional security of the population. Such interventions should therefore have differentiated outcomes and appropriate sunset clauses.

3.6. PRODUCTION LINKED INCENTIVE (PLI) SCHEME

Why in news?

Recently, the Government had announced addition of 10 sectors to the Production Linked Incentive (PLI) Scheme.

What is Production Linked Incentive (PLI)?

Production Linked Incentive refers to a rebate given to producers. This rebate is calculated as a certain percentage of sales of the producer (sales referred in it can be total sales or incremental sales). For example, PLI scheme for Electronics Sector offered a rebate of 4-6% on the incremental sales of the producer.

Government announcement and PLI Scheme in India

Before this announcement, the Centre had rolled out the PLI scheme already for **Mobile Manufacturing and Specified Electronic Components, Critical Key Starting materials/Drug Intermediaries and Active Pharmaceutical Ingredients** and **Manufacturing of Medical Devices.**

With this announcement, the Government has expanded this scheme to 10 more sectors with incentives worth 2 lakh crore over a 5-year period. The additional sectors are:

- Advance Chemistry Cell (ACC) Battery
- Electronic/Technology Products
- Automobiles & Auto Components
- Pharmaceuticals drugs
- Telecom & Networking Products
- Textile Products: MMF segment and technical textiles
- Food Products
- High Efficiency Solar PV Modules
- White Goods (ACs & LED)
- Specialty Steel

The final proposals of PLI for individual sectors will be appraised by the **Expenditure Finance Committee (EFC)** and approved by the Cabinet. Savings, if any, from one PLI scheme of an approved sector can be utilized to fund that of another approved sector. Any new sector for PLI will require fresh approval of the Cabinet. With regard to nature of the scheme, following can be cited as key features of the PLI Scheme-

- The **scheme is outcome-based**, which means that incentives will be disbursed only after production has taken place.
- The calculation of incentives is **based on incremental production** at a high rate of growth.
- The scheme **focuses on size and scale** by selecting those players who can deliver on volumes.
- The **selection of sectors** covering cutting-edge technology, sectors for integration with global value chains, job-creating sectors and sectors closely linked to the rural economy**, is highly calibrated**.
- Also, the design of the earlier PLI scheme for electronics is such that it is **compatible with World Trade Organization commitments** as the quantum of support is not directly linked to exports or value-addition.

What are the potential benefits that may incur from the Scheme?

- **Increasing strategic autonomy:** Efforts have been made to become self-sufficient (or 'Atmanirbhar') in sectors which are of strategic importance. For instance-
  - **Telecom equipment** forms a critical and strategic element of building a secured telecom infrastructure and India aspires to become a major original equipment manufacturer of telecom and networking products.
- **Utilizing the Comparative advantage:** In some sectors the domestic industry has comparative advantage over other countries, focusing on these sectors could generate higher returns. For instance-
  - **The Indian pharmaceutical industry** is the third largest in the world by volume and 14th largest in terms of value. It contributes 3.5% of the total drugs and medicines exported globally. India possesses the complete ecosystem for development and manufacturing of pharmaceuticals and a robust ecosystem of allied industries.
- **Increased ability to tap the high global and domestic demand:** This will help **satisfy the growing domestic demand** in the respective sectors and also **give a fillip to exports.**
  - India is expected to have a USD 1 trillion **digital economy** by 2025. Additionally, the Government's push for data localization, Internet of Things market in India, projects such as Smart City and Digital India are expected to increase the demand for **electronic products.**
- **Developing the nascent but high-potential sectors:** These sectors may not be significant but in the present socio-economic context, present high potential.
  - The growth of the **processed food industry** leads to better price for farmers and reduces high levels of wastage. Specific product lines having high growth potential and capabilities to generate medium- to large-scale employment can be tapped.
- This step has been touted as a 'game-changer' for the manufacturing sector as it is expected to **attract foreign players, generate employment** in the country (with focus on labour intensive sectors like Textile), **increase exports** and consequently integrate the economy with the global supply chain.
- From the perspective of industry, the scheme indicates an **attitudinal shift from 'discouragement' to 'encouragement'** for large industries and simultaneously provides the much-needed fiscal space required during the Pandemic.

What are the potential issues with the scheme?

- **Gradual withdrawal of scheme critical to long-term development:** The incentives should be well-crafted and temporary so that the industries receiving support can mature and become economically viable without protection. Keeping them in place for too long may slow down, rather than accelerate growth in these sectors.
- **Designing sector specific incentives:** The implementation of PLI scheme in the Electronics sector and Pharmaceutical sector has highlighted that every sector has to have different eligibility thresholds. Given the large range of activities covered in the 10 sectors, effectively determining the thresholds for each could become a difficult task.
- **May interfere natural economic processes:** In the long run, an economy can become competitive only when sectors can die and be born. Resources get reallocated to sectors that see higher productivity growth. External interference may hinder optimized allocation of resources.
- **The sectors that don't get an incentive are at a relative disadvantage:** The limited resources of the economy in the form of Capital and human resources will be nudged towards incentivized sectors thus indirectly disincentivizing other sectors.

What can be done to ameliorate these issues and further improve the scheme?

- **Pre-defined Sunset clause on scheme:** It will not only be beneficial for the sector in the long-term, it will also encourage the individual players to see it as a one-time opportunity for capacity building.
- **Improve technological competence:** The breathing room created by these incentives could be used by the industry players to increase their technological competence and transition towards becoming globally competitive.
- **Improve business environment:** It can be done by improving transparency and predictability in the policy framework. For example, simplification of taxation regime or easing the land acquisition process etc. This becomes even more important for industries which are outside the purview PLI Scheme.
- **Managing the real exchange rate better to strengthen the export regime:** The real exchange rate (adjusted for inflation) in India has appreciated 19% in the last decade on account of both Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI). This appreciation negatively effects the overall exports. Thus, ensuring minimal real exchange rate appreciation is critical to boosting exports in the long run.
- **Reinvigorating the National Infrastructure Pipeline (NIP):** Several industry experts have highlighted that large scale production can only be achieved if the supply side bottleneck of infrastructure is satisfied. The plan proposed by the NIP can provide a way forward.

3.7. SOLAR MANUFACTURING IN INDIA

Why in news?

Recently, India has received proposals for setting up **10 GW of solar equipment manufacturing capacity.**

Present capacity of solar manufacturing

- India's **renewable energy generation capacity is the fourth largest in the world** (currently 136 GW which is 36% of total capacity). It is growing at the fastest speed among all major countries.
  - By 2022, share of renewable capacity **will increase to 220 GW.**
  - Demand for locally-produced panels will **also grow to 36 GW over three years.**
- The current capacity of solar cell manufacturing in India is about 2,500 MW. In case of solar modules as well, 7,000 MW of capacity is being added in addition to existing capacity.
- The nation has around **9 GW of annual solar module manufacturing capacity and around 3 GW of annual solar cell production** capacity.
  - **A solar cell is the basic building block** of a solar module.
- India needs to increase its solar manufacturing capacity and overcome challenges faced in increasing this capacity.

> **Potential of Solar Manufacturing in India**
> - **Employment generation:** It has a potential to create 50,000 direct jobs and at least 125,000 indirect jobs in the next 5 years.
> - **Expanding overseas market:** India has taken a lead in the International Solar Alliance (ISA), which will help in the transfer of solar technologies across members.
>   - India also sees this as an opportunity for the domestic solar industry to find inroads in some of the smaller and untapped markets like Africa and South America.

> **Main technologies utilised for harnessing solar energy**
> - **Solar Photovoltaics (PV):** It is based on the photovoltaic effect, by which a photon (the basic unit of light) impacting a surface made of a special material generates the release of an electron.
> - **Concentrating Solar Power (CSP):** It uses sunlight to heat a fluid (depending on the particular application, it can be water or other fluid)

Why there is need to develop solar manufacturing capacity?

- **Harvest potential and Self-reliant:** India need to fully use its solar power potential, this is not possible unless making India self-sufficient in the manufacture of solar cells and modules, batteries and ancillary equipment.
- **To curb import dependency:** Currently, 80% of solar cells and modules used in India are imported from China and comprise $2.16 billion of imports in 2018-19. Hence, domestic solar power manufacturing capacity needs to be improved to save tremendous foreign exchange.
- **Meet domestic demand:** India's solar manufacturing capacity is insufficient, under-utilised and unviable, as out of 2.5 GW demand in 2020 only 15% was met through domestic manufacturing.
- **To achieve target:** India's current solar power installed capacity is 35.73 GW. Hence, domestic manufacturing is needed to achieve set target of 175 GW of renewable energy by 2022, which includes 100 GW from solar

power generation and increase share of non-fossil-based power capacity to about 40 percent by 2030, under Intended Nationally Determined Contribution target.

Challenges faced by solar manufacturing in India

- **Investment crunch:** Firstly, to achieve the 100 GW target, India needs to invest $65 billion in the next four years, but major part investment is raised within the country and there is less investment from foreign direct investment (FDI).
- **Technology and R&D:** India in comparison to China does not bring latest (next generation) technology at a competitive price, which hampers development of solar manufacturing in India.
- **Uncompetitive cost:** Indian solar cells are, on average, 20-30% more expensive than cells manufactured in China. Hence, manufacturer tend to choose affordable equipments through import from China.
- **Quality control issues:** Some companies have voiced their concerns about the quality of Indian made cells and reported some manufacturers falsely label their 380 Wp (capacity of a solar in watt peak) cells as 400 Wp because there are no government entities to ensure the quality of these cells.
- **Policy issues:** Only those models and manufacturers that are included in the approved list of models and manufacturers (ALMM) for solar PV cells and modules will be eligible to participate in projects under government programs.

> **Steps taken in solar manufacturing sector in India**
> - **Performance linked incentive (PLI)** to solar panel manufacturers is to give a boost to the domestic companies.
> - **National Solar Mission:** It is an initiative under National Action Plan on Climate Change (NAPCC) to promote solar power in India and to establish India as a global leader in solar energy by creating the policy conditions for its deployment across the country.
> - **Tariff and non-tariff barriers**: To promote domestic manufacturing and check Chinese solar cells, modules and inverter imports India has imposed tariff and non-tariff barriers. Which make imported cells and modules even more expensive and encourage domestic manufacturing.
> - **Atma Nirbhar Bharat Abhiyaan and Vocal for local:** It aims to make the country independent and self-reliant against the tough competition in the global supply chain for this package of 20 lakh crore was announced to promote manufacturing in India, consequently will boost solar power manufacturing in India.
> - **Make in India:** Initiatives like Make in India, the introduction of SEZs, increasing export incentives, launching phased manufacturing programme (PMP) and Modified Special Incentive Package Scheme have helped India grow into a lucrative market for investment and progress.
> - **Solar PV Manufacturing Scheme:** To create end to end solar PV manufacturing capacity in India by way of building up manufacturing capacity of solar PV modules, under this viability gap funding (VGF) and Performance linked incentive (PLI) will be provided for domestic and global players to build large-scale solar PV capacity in India.
> - **Domestic content requirement (DCR):** It mandates use of both solar photovoltaics calls and modules manufactured domestically.
> - **Foreign direct investment:** FDI up to 100% is permitted in the renewable energy sector (includes solar energy) under the automatic route, and no prior government approval is required in India.

- **Challenge at the World Trade Organisation (WTO):** US has challenged India's solar energy policy before the World Trade Organisation (WTO), on the line of domestic sourcing of solar panels, which was upheld by WTO.

Way forward

- **Developing an Ecosystem:** Indian government must focus on creating manufacturing clusters throughout the country similar to solar parks, with the availability of the entire supply chain, research and development (R&D) centres, equipment manufacturing, universities, and laboratories.
- **Comprehensive solar manufacturing policy:** It is needed which clearly mention about robust supply networks, lower cost supply agreements, subsidies on cost of power, financing and capex, incentives for R&D etc.
- **Costs competitiveness:** Solar manufacturing has to deal with significant costs related to setting up assembly lines, land acquisition, labour needs, taxes, power costs and other working capital requirements. Hence, government need to incentivize companies to boost or set up new solar component manufacturing capacity.
- **Manufacturing excellence**: India should deal with manufacturing excellence to build and continuously innovate the cutting-edge manufacturing mindset as opposed to build and forget approach.
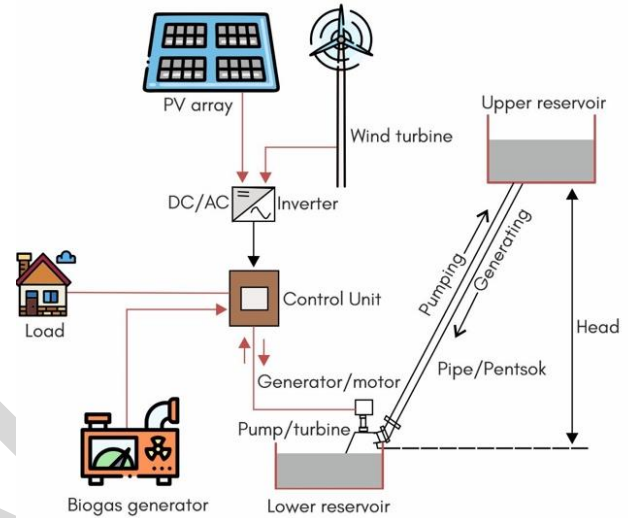
3.8. HYBRID RENEWABLE ENERGY

Why in news?

Ministry of New and Renewable Energy (MNRE) recently proposed the scheme for "**Development of Wind Parks/ Wind-Solar Hybrid Park**".

About the proposed scheme

- Sites have been identified across seven states, **Tamil Nadu, Andhra Pradesh, Karnataka, Telangana, Gujarat, Rajasthan and Madhya Pradesh.**
- The capacity of each park proposed is **around 500 MW and more** but shall not be less than 50 MW.
- **Centre will provide financial assistance** for development of parks.
  - **State Government** will select park developer and facilitate the park developer in acquisition/ leasehold of the identified site, in obtaining all statutory clearances.
- Wind Energy Park will provide a plug and play solution (availability **of land, transmission, necessary infrastructure and necessary approvals) to the investors** for installing wind/ wind-solar power projects.
  - **Jaisalmer Wind Park, Rajasthan with installed capacity of 1,064 MW** is largest wind park in India.
- Also, MNRE issued **tariff-based competitive bidding guidelines** for power procurement from grid-connected solar-wind hybrid projects (hybrid renewable energy).
- Recently, government also cleared land allotment for a **mega renewable energy hybrid park in Kutch region with capacity 41,500-megawatts** (solar and wind).

HYBRID RENEWABLE ENERGY SYSTEM

What is hybrid renewable energy?

- Hybrid renewable energy usually **comprises of two or more renewable energy sources combined in such a way to provide an efficient system** with appropriate energy conversion technology connected together to feed power to local load or grid.
- Renewable Energy Hybrids are the **solution to a reliable, affordable and dispatchable integration of renewable energies**, from the combination and integration of renewable energy generation sources with one another, such as wind and solar.
- There are different types of hybrid renewable energy systems **like Biomass-wind-fuel cell, Photovoltaic-wind, Hydro-wind and Photovoltaic-Biomass** etc.

Benefits of hybrid renewable energy parks

- **Enhanced and flatter power output:** Hybrid parks make power generation profile flatter over time compared to a pure wind or solar installation to eliminate rapid voltage and power fluctuations in the electrical grid, make power dispatch more schedulable.
- **Optimised the use of the network:** Number of instruments connectable is limited and hence maximise the use of the existing network/instruments.
- **Continuous power supply**: The hybrid solar systems provide power continuously, due to integration of multiple renewable sources like solar, wind, hydro etc.
- **Efficient use of land:** Due to common use of land for different energy resources in hybrid energy parks improves land use efficiency.
- **Lower consumer price of power:** Lower investment, running and transmission cost in hybrid renewable energy parks will reduce the cost of power.
- **Reduced losses**: They are beneficial in terms of reduced line and transformer losses, reduced environmental impacts, increased system reliability, improved power quality and increased overall efficiency.

Concerns with hybrid renewable energy parks

- **High installation cost**: Initial investment for the installation of a hybrid renewable energy systems is high as compared to installation of pure wind or solar systems.
- **Grid security and stability:** These systems can be connected to a utility grid and often frequency mismatch arises between both systems leads to instability of the overall system.
- **Environmental impact:** There are concern about the impact of renewable energy parks on ecology and wildlife in the region.
- **Resource location:** Hybrid renewable energy plants require large areas of space, hence availability and acquisition of such large scale of land delaying the installation of parks.
- **Weather condition:** As energy generation from park is dependent on associated local weather and if favourable weather is not available then operating capacity of park becomes inefficient and unfeasible.

Way forward

- **Financial support:** Funds are required for R&D, conducting training and workshops, which helps to evaluate progress in technology, and the presentation of renewable energy technologies across the country.
- **Resolving intermittency issue:** The intermittency of wind and solar can be balanced by adding a fast ramping source of power; for example, an open cycle gas turbine.
- **Technical advancement:** It is equally important to have proper R&D for such systems so that they can be used effectively.

Related information

National wind-solar hybrid policy

- The main objective of the Policy is to **provide a framework for promotion of large grid connected wind-solar PV hybrid system** for optimal and efficient utilization of transmission infrastructure and land and achieving better grid stability.
- Policy aims **to encourage new technologies, methods and wayouts involving combined operation** of wind and solar PV plants.
- **Implementation strategy**
  - **Configurations and use of technology**
    - ✓ **Wind-Solar Hybrid- AC integration:** In this configuration the AC output of the both the wind and solar systems is integrated either at LT side or at HT side.
    - ✓ **Wind-Solar Hybrid- DC integration:** In this DC output of the both the wind and solar PV plant is connected to a common DC bus and a common invertor suitable for combined output AC capacity is used to convert this DC power in to AC power.
  - **New Wind-Solar Hybrid Plants and** hybridisation of existing wind/solar PV plants.
  - **Battery Storage:** Battery storage may be added to the hybrid project to reduce the variability of output power and higher energy output as well as to ensure availability of firm power for a particular period.
- **Regulatory requirements:** The Central Electricity Authority and CERC shall formulate necessary standards and regulations for wind-solar hybrid systems.
- **Standard and quality**: For wind turbines, solar modules and balance of systems, the technical guidelines issued by the Ministry from time to time for grid connected systems will be followed.
- **Incentives:** The Government will encourage development wind-solar hybrid systems through different schemes and programmes. All fiscal and financial incentives available to wind and solar power projects will also be made available to hybrid projects.
- **Research and development:** Government will support the technology development projects in the field of wind-solar hybrid systems. Besides, support will be provided for development of standards for hybrid systems.

3.9. MODEL TENANCY ACT, 2019

Why in News?

Ministry of Housing and Urban Affairs has released the draft **Model Tenancy, 2019.**

Need of the Model Tenancy Law

- **Lack of a sound rental policy** as despite acute housing shortage, there are over 1.10 Crore homes lying vacant in the country's urban areas.

- o Further, according to the National Census, **vacant houses comprised around 12% of the total share** of the urban housing stock.
- **Land is a state subject -** Since land comes under state list, States have their own laws with long drawn legal provisions which result in lengthy litigation to resolve disputes.
- **Owner side concerns:**
  - o **Low rental yield** is accrued from residential properties – averaging not more than 3% in major cities.
  - o Existing rent control laws that put a **ceiling on rent** are restrictive in nature.
- **Tenant side concerns**:
  - o The affordability to own a house is a challenge especially for low-income households.
    - ✓ **Non-availability of affordable accommodation** was the key reason behind migrant leaving towns amidst COVID-19 pandemic.
  - o Exorbitant increase in year-on-year rent and interference by landlord too have caused disputes.
- This has made **rental housing financially unattractive resulting into informal sub-standard rental market** lacking basic amenities.

About Draft Model Tenancy Act, 2019

- It envisages to **balance the interest and rights of both the owner and tenant** and to create an accountable and transparent ecosystem for renting the premises in disciplined and efficient manner.
- The Model Act provides for its applicability for the whole of the State i.e. **urban as well as rural areas** in the State.
- **Features**
  - o **Establish Rent courts and Tribunals**
    - ✓ **Rent Authority may direct for compensation** on the person responsible for cutting off or withholding the essential supply.
    - ✓ To ensure **speedy redressal of disputes**, it also proposes to establish **Rent Court and Rent Tribunal** that have to dispose off the cases within 60 days.
    - ✓ Act provides for **fast-track quasi-judicial mechanism** for adjudication of disputes. Officer of the rank of **deputy collector or higher** will act as **rent authority** to adjudicate any issue arising out of a rental disagreement
  - o **Rent:** All premises (residential or commercial) shall be rented only after a **written agreement on mutually agreed terms**.
    - ✓ **Landlord cannot arbitrarily increase the rent** in variance with what has been agreed to in the agreement and Property owner has to give **3 month notice before increasing rent.**
  - o **Security Deposits:** It proposes to **cap the security deposit to maximum of two month's rent** in case of residential properties and Security deposit to be refunded by the landlord at the time of taking over vacant possession of the premises.
  - o **Repair and Maintenance:** If the landowner refuses to carry out the required repairs, the tenant can get the work done and deduct the same from periodic rent.
    - ✓ A **landowner cannot enter the rented premises without 24-hour prior notice** to carry out repairs or replacement.
  - o **Agreement**
    - ✓ A **digital platform** will be set up in **local vernacular language** of the State for submitting tenancy agreement and other documents.
    - ✓ The **tenant cannot sublet a part of or the whole property** or carry out any structural change without execution of supplementary agreement between landlord and tenant.
    - ✓ Landowner **cannot cut power and water supply in case of a dispute with the tenant**.
    - ✓ Act acknowledges **property manager** (the one who manages property on behalf of the landlord) **as a legal entity**. It further provides for duties of property manager and consequences of violation of duties.

How will the Model Tenancy Law be Beneficial?

- It will encourage **private participation in rental housing** for addressing the huge housing shortage across the country.

- It provides **relief for both tenants and landlords** and helps take some load off India's **overburdened litigation process**.
- It will enable creation of adequate **rental housing stock** for various income segments of society including migrants, formal and informal sector workers, professionals, students etc.

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Issues that may arise:
- The Act formalizes the existing arrangements; thereby the **rents might also increase.**
- The **Act is not binding on the states**, as it is a model act. Thus, like in the case with RERA, the fear is that states may choose not to follow guidelines, diluting the essence of the Model Act.

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- It will increase access to quality rented accommodation and enables gradual **formalization of rental housing market**.
- It complements the government's vision of **'Housing for All' by 2022**.
- It will bring **transparency and accountability** in the existing system of house renting.

Conclusion

With an estimation of 50% (presently, 31.6%) of the Indian population be living in Urban areas by 2050, this act provides a much-needed breakthrough to create affordable housing for all and relieve the massive pressure and demand on the housing sector.

4. SECURITY

4.1. INDIA'S ANNUAL RESOLUTION ON COUNTER-TERRORISM

Why in news?

India's annual resolution on the issue of counter-terrorism "**Measures to prevent terrorists from acquiring weapons of mass destruction**" was adopted at United Nations.

More about News

- India is **victim of state-sponsored cross-border terrorism**, has been at the forefront in highlighting the serious threat to international peace and security emanating from acquisition of weapons of mass destruction by terrorist groups.
- For this India tabled an annual resolution for '**Measures to prevent terrorists from acquiring weapons of mass destruction'.**
  - It **co-sponsored by over 75 countries and adopted by consensus** in the First Committee of the UN General Assembly.
  - Through the resolution **India has urged greater international co-operation** to prevent terrorists from acquiring weapons of mass destruction and their delivery systems.
- Also, First Committee of UN General Assembly **adopted two resolutions which were sponsored by India:** Convention on the Prohibition of the use of Nuclear Weapons' and Reducing Nuclear Danger' - under the Nuclear weapons' cluster.
- **UN resolution 1540** also obliges all states to refrain from supporting by any means non-State actors from developing, acquiring, manufacturing, possessing, transporting, transferring or using nuclear, chemical or biological weapons and their means of delivery in terror affected countries.
- According to **the Institute for Economics and Peace's Global Terrorism Index, 2020** ranks India as 8th in the world on a list of countries most affected by terrorism in 2019.
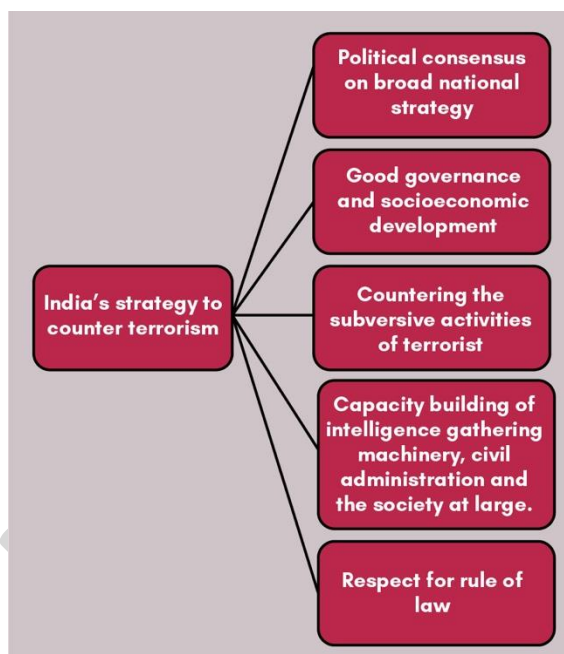
India & Counter terrorism measures at international level

- India has prioritised the **adoption of an intergovernmental framework to combat terrorism.**

> **About Weapons of Mass Destruction (WMD)**
> - WMD are **atomic explosive weapons, radioactive material weapons, lethal chemical and biological weapons, and any weapons developed** in the future which might have characteristics comparable in destructive effect to those of the atomic bomb or other weapons mentioned above.
> - WMDs constitute a **class of weaponry with the potential to:**
>   - Produce in a single moment an enormous destructive effect capable to kill millions of civilians, jeopardize the natural environment;
>   - Cause death or serious injury of people through toxic or poisonous chemicals;
>   - Disseminate disease-causing organisms or toxins to harm or kill humans, animals or plants;
> - A number of multilateral treaties exist to outlaw several classes of WMDs. These treaties include:
>   - **Biological Weapons Convention (BWC) and the Chemical Weapons Convention (CWC)**
>   - **Multilateral treaties** targeting the proliferation, testing and achieving progress on the disarmament of nuclear weapons include the
>   - ✓ Treaty on the Non-Proliferation of Nuclear Weapons (NPT),
>   - ✓ the Treaty on the Prohibition of Nuclear Weapons (TPNW),
>   - ✓ the Treaty Banning Nuclear Weapon Tests In The Atmosphere,
>   - ✓ In Outer Space And Under Water, also known as the Partial Test Ban Treaty (PTBT),
>   - ✓ Comprehensive Nuclear-Test-Ban Treaty, which was signed in 1996 but has yet to enter into force.
>   - Several treaties also exist to prevent the proliferation of missiles and related technologies, which can be used as a vehicle to deliver WMD payloads like **the Hague Code of Conduct (HCOC) and the Missile Technology Control Regime (MTCR).**

- **Counter-Terrorism Committee (CTC)**: It was established by UN Security Council resolution 1373 (2001), to implement measures intended to enhance their legal and institutional ability to counter terrorist activities at home, in their regions and around the world.
- **Global Counter-Terrorism Forum (GCTF):** In 2011 US created the GCTF, an action-oriented platform outside the UN framework to foster effective multilateral cooperation in counter-terrorism.

- **Counter-Terrorism Implementation Task Force (CTITF):** It was established in 2005 and endorsed by the General Assembly through the United Nations Global Counter-Terrorism Strategy in 2006. It aims to enhance coordination and coherence of counter-terrorism efforts of the United Nations system.
- **UN Global Counter-Terrorism Strategy**: It is a unique global instrument to enhance national, regional and international efforts to counter terrorism, through its adoption in 2006.
- **Shanghai Convention on Combating Terrorism, Separatism and Extremism:** Adopted by SCO for maintenance of international peace and security and promotion of friendly relations and cooperation among States. India is member state of SCO.
- **BRICS counter-terrorism strategy:** It is to complement and strengthen the existing bilateral and multilateral ties among the BRICS countries, and to make a meaningful contribution to the global efforts of preventing and combating the threat of terrorism. India is member state of BRICS.
- **Comprehensive Convention on International Terrorism (CCIT):** India had proposed it in UNGA far back in 1996 and wishes to highlight the importance and need for early finalization draft CCIT.
- **Financial Action Task Force (FATF):** It is an international organisation that works towards establishing global standards for combating money laundering and terrorist financing.

India's strategy to counter terrorism
- Political consensus on broad national strategy
- Good governance and socioeconomic development
- Countering the subversive activities of terrorist
- Capacity building of intelligence gathering machinery, civil administration and the society at large.
- Respect for rule of law

Counter terrorism measures in India at National Level
- **National Investigation Agency (NIA):** It is created to probe terror attacks in the country, following the 26/11 terrorist attacks on Mumbai in 2008.
- **National Intelligence Grid (NATGRID):** It is to interconnect security agencies of the Indian Government to gather and share intelligence data among them.
- **National Security Guard (NSG):** It is a paramilitary force that is primarily responsible for counterterrorism and anti-hijacking operations.
- **Unlawful Activities (Prevention) Act, (UAPA) 1967:** Act provides for the more effective prevention of certain unlawful activities and for dealing with terrorist activities of individuals and associations.
- **Against financing of terrorism:** Prevention of Money-Laundering (Amendment) Act, 2005, Indian Financial Intelligence Unit (FIU-IND) established to investigate cases of terror financing.

4.2. BIO-TERRORISM

Why in news?

Parliamentary panel has **highlighted the need for the government to have laws to counter bio-terrorism** in its report 'The Outbreak of Pandemic COVID-19 and its Management'.

More about news

- Earlier, Department of Health and Family Welfare, submitted a **seven-point action plan** that is needed to ensure security against biological weapons.
  - Action plan includes **strengthening disease surveillance, training, capacity building, strengthening research and surveillance activities** related to development of diagnostics, vaccines and drugs etc.
- After deliberations with Parliamentary panel on action plan, it came to conclusion to formulate **effective laws to counter bio-terrorism**.
  - Moreover, **adverse effects of COVID-19 pandemic** have taught the lesson on the importance of controlling biological agents.

About bio-terrorism

- **Bioterrorism is a planned and deliberate use of pathogenic strains of microorganisms** such as bacteria, viruses, or their toxins to spread life-threatening diseases on a mass scale in order to devastate the population of an area.

- **Bioterrorism agents are classified as categories A, B, and C**.
  - o **Category A:** High-priority agents that pose a risk to national security because they can be easily disseminated or transmitted from person to person, result in high mortality rates. Eg. Anthrax by Bacillus anthracis, botulism by Clostridium botulinum toxin, plague by Yersinia pestis etc.
  - o **Category B:** The second highest priority agents include brucellosis (Brucella species), glanders (Burkholderia mallei), melioidosis (Burkholderia pseudomallei), psittacosis (Chlamydia psittaci) etc.
  - o **Category C:** This include emerging pathogens that could be engineered for mass dissemination in the future. Eg. Emerging infectious diseases such as Nipah virus and Hanta virus etc.
- These agents are **delivered by Scud missiles, motor vehicles with spray, hand pump sprayers, book or letter, guns, remote control, robots** etc.
- It is often difficult to monitor the origin of such diseases/attacks.

Need for Bio terrorism law in India

- **India's high vulnerability**: High population density, Inadequate medical facilities, subtropical climatic conditions, poor hygiene and inadequate sanitation facilities make India extremely susceptible for such attacks.
- **Control its impact on society**: Bioterrorism causes damage, fear, and anxiety among people and affects the society and government of a country. These biologic weapons can cause large-scale mortality and morbidity in large population and create civil disruption in the shortest possible time.
- **Increase in attacks due to advancement in technology:** In this era of biotechnology and nanotechnology has created an easy accessibility to more sophisticated biologic agents apart from the conventional bacteria, viruses and toxins.

Mechanism to counter bio-terrorism

- **Deterrence by law:** Structured legislation is essential element of national preparedness against bioterrorism and for being punished for the such act perpetrated.
  - o For this need to introduce Public Health Bill on the line of **Public Health (Prevention, Control and Management of epidemics, bio-terrorism and disasters) Bill-2017**, which defined terms epidemic, isolation, quarantine and social distancing, but lapsed.
  - o Bill also **needs to repeal of Epidemic Diseases Act of 1897,** which is not specific to biological threat and does not define terms.
- **Prevention**: This is to be done through examining the risk of bioterror attacks, case studies, prevention of attacks, preparation and training of law enforcement personnel, and the related legal and political framework to reduce opportunity and enhanced intelligence.
- **Surveillance and assessment**: This can be done by recognizing patterns of non-specific syndromes and assessing them, that could indicate the early manifestations of a biological warfare attack.

Existing measures to counter bio-terrorism in India

- **Epidemic Diseases Act of 1897:** Act to provide for the better prevention of the spread of Dangerous Epidemic Diseases by providing special powers to authorities.
- **National Disaster Management Authority (NDMA):** NDMA has proposed a model instrument where participation of both government and private sectors is a pre-requisite to manage the menace of biological disaster. Half of the existing force is specifically trained to deal with chemical, biological, radiological, and nuclear (CBRN) threats.
- **Integrated Disease Surveillance Project (IDSP):** It was initiated in assistance with World bank, to strengthen/maintain decentralized laboratory-based IT enabled disease surveillance system for epidemic-prone diseases to monitor disease trends and to detect and respond to outbreaks in early rising phase through trained Rapid Response Team.
- **International Health Regulations:** Revised International Health Regulations came into force in India in June 2007, that helps to ensure that outbreaks and other public health emergencies of international concern are detected and investigated more rapidly.

Initiatives at international level

- **Biological Weapons Convention:** It is first multilateral disarmament treaty banning the development, production and stockpiling of Bacteriological (Biological) and Toxin Weapons.
- **INTERPOL Bioterrorism Prevention Unit:** It aims to enable law enforcement agencies to prevent, prepare and respond to the deliberate use of bacteria, viruses or biological toxins that threaten or cause harm to humans, animals or agriculture.
- **Cartagena Protocol on Biosafety:** It is an international agreement which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology.

- **Laboratory investigation:** Primary healthcare providers, laboratory staff, are the first responders and will most likely identify the initial cases.
  - o Hence **in conjunction with infection control and administrative personnel should develop both laboratory- and institution-wide response plans** for diagnosis and characterization of the biological organism.
- **Medical management**: It should include preventive, promotive, and curative services like Chemoprevention to prevent the spread of the disease, through identifying the category of population to be given chemoprophylaxis, availability of the requisite quantity of drugs or vaccine; and outline of the mechanism of administration with health infrastructure.
- **General public sensitization**: This can be done by law enforcing agencies, through training and education, warning network at hospitals and public health agencies etc.

5. ENVIRONMENT

5.1. ENVIRONMENTAL IMPACT OF AGRICULTURAL SUBSIDIES

Why in news?

Recent incidents of burning paddy stubble in Punjab, Haryana and Western Uttar Pradesh have raised concerns about Agriculture's contribution to pollution and role played by regime of agricultural subsidies in it.

Types of Agricultural Subsidies in India

Different kinds of agricultural subsidies provided to farmers in India are as follows:

- **Input Subsidies:** These are subsidies granted through distribution of inputs at prices that are less than the standard market price for these inputs. Several varieties of subsidies in this category are-
  - **Fertilizer Subsidy:** Urea and Phosphatic and Potassic (P&K) fertilizers are made available to farmers at subsidized prices through fertilizer manufacturers/importers.
  - **Irrigation Subsidy:** Subsidies to the farmers which the government bears on account of providing proper irrigation facilities through provision of **subsidized private irrigation equipment** such as pump sets or **public goods** (such as canals, dams etc.).
  - **Power Subsidy:** The government charges low rates for the electricity supplied to the farmers, which is primarily used by the farmers for irrigation purposes.
  - **Seed Subsidies:** High yielding seeds can be provided by the government at low prices.
  - **Credit Subsidy:** It includes interest subvention schemes for farmer loans and other costs such as write-offs bad loans.
- **Price Subsidy:** It includes mechanisms such as Minimum support prices (MSPs) at which the government procures food-grains from farmers at a higher price than its market price.
- **Infrastructural Subsidy:** Government allowing use of public goods such as roads, storage facilities, power, information about the market, transportation to the ports, etc. at lower prices to farmers.
- **Export Subsidies:** Subsides provided to encourage exports of specific agricultural products.

What are the environmental impacts of Agricultural subsidies in India?

- **Impacts of fertilizer use and production**: Subsidization of chemical fertilizers, specifically urea based and P&K fertilizers, have led to the following-
  - **Boom in fertilizer industry:** India's Fertilizer industry is classified under the **"red category"** of polluting sectors by Central Pollution Control Board of India. Wastewater generated at urea plants contains nitrogen, and cyanides in varying concentrations, which can lead to groundwater and surface water pollution, if not treated properly.
    - ✓ Also, naphtha-based fertilizer plants or those with fuel oil or coal-based captive power plants are associated with high carbon emissions and air pollution.
  - **Overuse of fertilizer:** This leads not only to problems such as stagnating or even declining soil productivity, widespread deficiency of secondary and micronutrients, and soil alkalinity and salinity, but also to the following:
    - ✓ **Atmospheric nitrogen:** Nitrogen use efficiency in India is very low, at below 35 per cent in lowland rice and under 50 per cent in upland crops. The rest of the nitrogen is lost to the environment which can become nitrous oxide, a **potent greenhouse gas (GHGs)** contributing to climate change, or nitrogen oxide, which contributes to **Photochemical smog** and **ground-level ozone**.
    - ✓ **Nutrient Runoff**: Excess nitrogen and phosphorus can be washed from farm fields and into waterways and can also leach through the soil into groundwater over time. High levels of nitrogen and phosphorus can cause **eutrophication of water bodies**, which can lead to hypoxia ("dead zones"), causing fish kills and a decrease in aquatic life. Excess nutrients can also cause harmful algal blooms (HABs) in freshwater systems, which not only disrupt wildlife but can also produce toxins harmful to humans.
- **Depletion of groundwater**: India subsidizes the cost of energy and equipments required to pump water for agriculture, through various schemes. This encourages producers to produce water intensive crops and over-exploit groundwater resources.

- o The groundwater level in India has declined by 61 per cent between 2007 and 2017 and of the extracted water 89 per cent is used for irrigation,
- **Intensification and Extensification of Agricultural Production**: Agricultural subsidies by increasing farmers' revenues provide **incentives to increase output** through **intensive practices** such as monocropping, rigorous use of inputs, such as fertilizers and pesticides and through **expansion of agricultural activity**. Environmental impacts associated with extensification of agricultural production include encroachment on fragile ecosystems and deforestation, while intensification can cause water pollution, land degradation, and biodiversity loss.
- **Wastage of resources**: Excess stocks of foodgrains procured by Food Corporation of India (FCI) when disposed off can lead to high methane emissions and wastage of precious resources like water that went into their production.
- **Extensive paddy cultivation**: Open-ended procurement of paddy, high MSPs and subsidized power water, have led to substantial growth in paddy cultivation across the country. Continuous or intense forms of intermittent flooding in rice farms can lead to **high methane and nitrous oxide emissions**, both GHGs.
  - o Also, **disposal of paddy stubble through burning** is responsible for release of air pollutants such as suspended particulate matter (PM), Carbon monoxide, Carbon dioxide etc.

Way Forward

- **Sustainable policies**: Policy frameworks for subsidies related to agricultural activity need take into account **local environmental conditions** and socioeconomic contexts and focus on **sustainable use of resources**.
- **Rationalization of fertilizer subsidies**: Instead of massive subsidisation of urea to the tune of almost 75 per cent of its cost, it would be better to give farmers input subsidy in cash on per hectare basis, or something on the lines of the nutrient based subsidy programme.
- **Fertilizer sector in India needs appropriate investments in technologies** for pollution control, such as NO_x control in stack, ammonia emissions curtailment, and advanced water treatment.
- **Promoting crop diversification:** and other practices such as multi cropping can help reduce impacts of intensive agricultural practices and encourage cultivation of climate suitable and less water intensive crops.
- **Shifting from input subsidies to investment subsidies**: For instance, investments can be made for the conversion of paddy areas to orchards with drip irrigation, vegetable, pulses and oilseeds, that consume much less water, much less power and fertilisers and don't create stubble to burn.
- **Rationalizing power subsidies**: Public investments in electricity subsidies can be diverted to innovation and infrastructural development in micro irrigation techniques and helping farmers become capable in using such techniques.
- **Adopting Nutrient Management Techniques:** Farmers need to be trained to improve nutrient management practices by applying nutrients (fertilizer and manure) in the right amount, at the right time of year and with the right methods.
- **Regulation of groundwater extraction:** There is an urgent need to limit groundwater extraction, which can be done by placing upper limits on extraction, promoting water harvesting techniques and ensuring last mile connection of farmlands to water sources such as canals and rivers.

5.2. HYDROGEN BASED ENERGY

Why in news?

Indian firms such as NTPC Ltd, Indian Oil Corporation, Acme Solar and Greenko are looking at hydrogen as a new business opportunity for extracting energy.

About Hydrogen as fuel

- Hydrogen (H_2) is an **alternative fuel** that can be produced from diverse domestic resources.
  - o It is abundant in our environment and it's stored **in water (H_2O), hydrocarbons (such as methane, CH_4), and other organic matter.**
  - o Hydrogen is an **energy carrier that can be used to store, move, and deliver energy** produced from other sources.
  - o Hydrogen with its **abundance, high energy density, better combustion characteristics**, non- polluting nature etc. has vast advantages over the conventional fuels.
- Hydrogen economy will be a **cornerstone of the future energy system** which can substitute the conventional fuels.

- **Types of hydrogen depending upon process of extraction**
  - **Green hydrogen:** It is derived by electrolysis of water, separating the hydrogen atom within it from oxygen using renewable energy (such as wind, solar or hydro) that eliminates emissions during process.
  - **Grey hydrogen:** Hydrogen derived using fossil fuels is called as grey hydrogen.
  - **Blue hydrogen:** It is derived from natural gas through the process of steam methane reforming (SMR). SMR mixes natural gas with very hot steam, in the presence of a catalyst, where a chemical reaction creates hydrogen and carbon monoxide.
- The current **global demand of hydrogen is 70 million tons per year**, most of which is being produced from fossil fuels — 76% from natural gas and around 23% from coal, with the remaining from electrolysis of water.
  - In India, **hydrogen is being commercially produced in the fertilizer industry, petroleum refining and chemical industries** and also as a by-product in chlor-alkali industries.
  - Cleaner methods of hydrogen production chiefly constitute **electrolysis, via chemical or photoelectrochemical routes.**

Hydrogen energy ecosystem

Production	Storage	Transportation	Use
• Steam Methane Reforming (SMR) • Partial oxidation(POx) • Coal gasification • Biomass gasification and pyrolysis • Electrolysis and photolysis • Thermo chemical processes	• Compressed gas in underground caverns • Compresses gas tanks • Cryo-compressed tanks • Liquefied form • Solid state form	• Pipelines for compressed H_2 • Compressed gas tube trailers • Liquefied H_2 truck • HCNG blended • High energy density carriers	• Fuel Cell vehicle • H_2 hybrid vehicles • Power generation • Chemical Industries • Fertilizer Industry • Refineries

Application of hydrogen:

- **Fuel cell:** Hydrogen fuel cell systems are used for generating electricity, in vehicular applications (Fuel cell cars, buses, etc.) and portable devices (Laptops, phones, etc.)
  - A **fuel cell is a device that generates electricity by a chemical reaction.** An electrolyte (membrane) carries electrically charged particles from one electrode to the other (anode and cathode), as well uses catalysts to speed up the reactions and produce electricity at the electrodes.
  - **Only water vapour and heat** are emissions from fuel cell.
- **Direct fuel in internal combustion (IC) engine vehicles:** Hydrogen is used as an energy carrier directly in IC engines and turbines in place of fossil fuels or as blended mixture with fossil fuels.
  - **Eg. H-CNG,** the is hydrogen enriched compressed natural gas upto 30%, with better power output, 4% more fuel economy and 70% more reduction in carbon monoxide emissions than CNG.
- **Chemical industries, Fertilizer industries, refineries:** Hydrogen is used as a raw material in the fertilizer, chemical and petroleum refining industries as it is a fundamental building block for the manufacture of ammonia.

FUEL CELL STACK
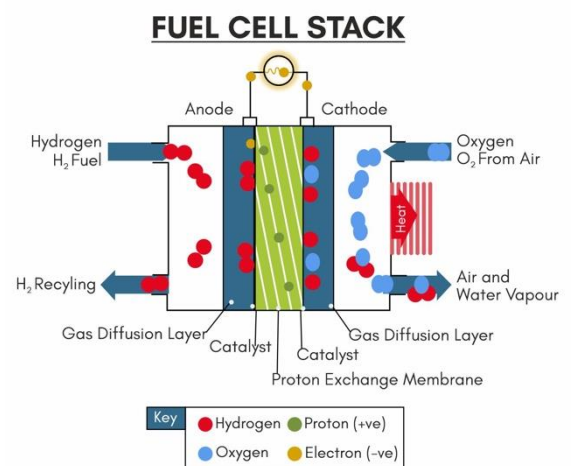
Advantages of hydrogen-based energy:

- **Reduced imports:** Hydrogen as an efficient fuel helps to reduce crude oil import and its use as feedstock for ammonia production reduces India's fertilizer imports.
  - India is the **world's third largest consumer of oil,** for which country has to depend heavily on oil imports.
- **Non-polluting & decarbonising:** The use of hydrogen can reduce the CO_2 related emissions significantly at the point of use and if green hydrogen is used then there is capability to decarbonize the entire value chain, enabling reduced emissions and climate change threats.
  - Hydrogen fuel cell leave only water vapour and heat as emissions and releases no greenhouse gasses.

- **Abundance:** Hydrogen can be produced locally from numerous sources like methane, gasoline, biomass, coal or water.
- **High efficiency:** Hydrogen is an efficient energy source, means that an automobile that utilizes hydrogen energy travels more miles than one with an equal amount of gasoline.
- **High energy density**: Hydrogen has the highest energy per mass of any fuel, it is 120 MJ/kg, almost three times more than diesel or gasoline.
- **Address energy requirement:** Hydrogen can provide linkages between energy supply and demand, in both a centralized or decentralized manner, thereby enhancing the overall energy system flexibility.

Steps taken in field of hydrogen energy system
- **National Hydrogen Energy Board:** It was set up in 2003 to prepare, implement and monitor the National Hydrogen Energy Road Map and the National Hydrogen Energy and Fuel Cell Programme.
- **National Hydrogen Energy Roadmap**: It was laid in the year 2006 to provide a blueprint for hydrogen energy development in the country.
- **High level steering committee:** It was constituted under the chairmanship of Dr. K. Kasturirangan for Hydrogen and Fuel cells, committee prepared comprehensive reports on different themes like hydrogen production, storage, utilization, transport, safety and standards.
- **Mission Innovation:** It is global initiative to accelerate global clean energy innovation, which include innovation challenge on renewable and clean hydrogen and India is participating in this challenge.

Challenges in growth of Hydrogen based economy

- **Energy intensive:** For e.g. green hydrogen requires a massive expansion of renewable generation to power the electrolysis plants that split water into hydrogen and oxygen.
- **Emissions:** Natural gas reforming process (methane reforming) to produce grey hydrogen requires a fossil-fuel and emits carbon monoxide and carbon dioxide. Hence, not climate friendly.
- **Storage:** Hydrogen is also hard to store, for storage it requires compression to 700 times atmospheric pressure, refrigeration to -253 degree Celsius. As well it can embrittle metal and is more explosive.
- **Additional costs**: In case of centralized production, the cost of hydrogen generation is lower due economies of scale but Transmission & Distribution (T&D) costs are higher, while in decentralised production say at the refuelling station (using on site electrolyser or reformer), the T& D costs are minimized but cost of production is higher.
- **Code of standard:** The biggest challenge to the commercialization of the hydrogen-based technologies is the requirement of code and standards to get a sort of consistency and encourage deployment.

Way forward

- **Development of code of standards** will help in dealing with Hydrogen vehicles in particular and help in progress of Hydrogen economy in a smoother way.
- **Advanced research and technology developments** are necessary to improve the efficiency of fuel cells, tolerant to impurities, use of non-precious metals as catalyst etc.
- **Need to develop safe and cost-effective solid-state storage methods** using development of carbon nanostructures to achieve the desired storage goals.
- **Major R&D programmes should be introduced** linking with applications which may have market acceptance. For this, large number of demonstrative projects should be supported by Department of Science & Technology in production, storage and application areas in addition to usual development projects.
- **Generation of hydrogen from renewable sources** should be encouraged and Government should explore policies for subsiding hydrogen price generated from renewable.

5.3. GLACIAL LAKES OUTBURST FLOODS (GLOFS)

Why in news?

Using remote sensing data, researchers from Germany have mapped the evolution of Gya glacial lake outburst flood (GLOF) of 2014 in Ladakh.

**More about news**

- Report by researchers mentions that cause of GLOF was not a spillover due to an avalanche or landslide, rather **there was a thawing of the ice cores in the moraine which drained through the subsurface tunnels.**
  - **Moraine is any accumulation of unconsolidated debris,** sometimes referred to as glacial till, that has been previously carried along by a glacier or ice sheet.

- Researchers noted that such **thawing of ice cores may accelerate in the future due to climate change**, and there is an urgent need to use multiple methods for better risk assessment and early warning.
- According to report, **bathymetric studies are needed to analyse lake volumes and its dynamics**. New, technologies can also be put to understand the stability of the moraines, but also need to asses land use planning.

About Glacial Lakes and GLOFs

- Glacial lakes are **ice-dammed, moraine-dammed, and bedrock-dammed lakes**.
    - These lakes are formed by the **trapping of melt water from the glacier** within dammed structure.
    - Due to global warming glaciers are retreating and **glacier lakes are expanding** in the size and numbers.
- **Glacial lake outburst flood (GLOF)** is a sudden release of a significant amount of water retained in a glacial lake, irrespective of the cause.
    - The formation of moraine-dammed glacial lakes and glacial lake outburst flood (GLOF) is major concern in the Himalayan states of India.
- **Factors triggering GLOFs include**
    - **Rapid slope movement into the lake:** Fast slope movement (slides, falls and avalanches) into the lake produces displacement waves which, in turn overtop the dam or cause direct rupture of the dam.
    - **Increased water inflow into a lake** due to heavy rainfall/snowmelt & cascading processes (flood from a lake situated upstream)
    - **Earthquake:** The direct mechanism of earthquake-triggered lake outburst floods is dam rupture and failure.
    - **Long-term dam degradation:** Successive changes in the internal structure of the dam leading to increased hydrostatic pressure induced by basal ice melting that results in dam failure.
    - **Black carbon:** Due to incomplete combustion of fossil fuels, wood and other fuels amount of black carbon is increasing, which reduces the albedo of earth and melts the glaciers.
    - **Anthropogenic activities:** Mass tourism, developmental interventions such as roads and hydropower projects and the practice of slash and burn type of farming in certain pockets of the Indian Himalayan region.
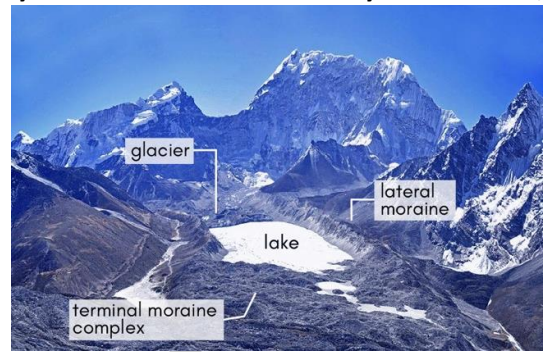
Impact of GLOFs

- **Societal Impact:** The sudden and intense flooding that results can cause destruction and disruption of property, infrastructure and deaths.
- **Impact on ocean circulation and climate:** Sudden release of an extremely large amount of cold freshwater into the ocean reduces the salinity of the surface layer and subsequently alters ocean circulation. This also influence the associated climate.
- **Geomorphological impact:** GLOFs, have significant potential to influence erosion-accumulation interactions and sediment dynamics, like bank and depth erosion of the stream/river channel, meander shift, replacement of existing channels and formation of new ones or formation of erosional terraces etc.

Steps taken

- **Indian Space Research Organisation (ISRO)** among many other organisations are engaged in glacial lake monitoring and water bodies in the Himalayan region of Indian River Basins.
- **National Disaster Management Authority (NDMA) guidelines for management of Glacial Lake Outburst Floods (GLOFs):**
    - **Hazard and risk mapping:** Hazard and risk assessment provide the basis for prioritising, designing, and implementing risk management strategies, and is therefore considered to be a cornerstone of Disaster Risk Management.
    - **Monitoring, risk reduction and mitigation measures:** Early Warning Systems (EWS) are commonly agreed upon as the most effective approach to disaster risk red
    - **Awareness and preparedness:** Building awareness and strengthening preparedness can be effective on short, mid, and longer time. In particular, attention should be given to the most vulnerable members of society, including women, children, disabled, elderly, and marginalised communities.

- o **Capacity development:** A successful and sustainable implementation of the framework for GLOF risk assessment and management requires scientific, management, engineering and institutional capacities. Efforts to develop capacities should focus both on training and strengthening academic education in relevant disciplines from natural and social sciences.
  - o **Disaster response:** Well-established disaster response procedures at national, state district, and community levels. Also, response strategies need to consider a multi-hazard perspective, considering access and evacuation routes and relief camps.
  - o **Research and development:** Repeated monitoring using advanced space-borne and terrestrial technology is required for regular re-assessment of lakes across the entire Himalayan region.
  - o **Action plan and implementation:** Comprehensive disaster management plans will be prepared at the National, State and District levels.
- **Sikkim has installed a Lake monitoring and information System** (water level Sensor) at South Lhonak lake. The sensor gives the water level of the lake and also monitored the lake level when there is sudden fluctuation in water level.
  - o **Also high density polyethylene (HDPE) pipes have been installed to siphon off water** from the glacial lake.

# 5.4. LA NIÑA

Why in News?

Recently, the World Meteorological Organization (WMO) has announced the arrival of La Niña in the central and eastern equatorial Pacific Ocean after nearly a decade's absence.

More about news

- The La Niña of 2020 is **expected to be moderate to strong** and could last into 2021.
- The **Horn of Africa could see below average rainfall**; **East and Central Africa will see drier** than usual conditions.
- WMO's weather models forecast **above-average rainfall for Southeast Asia**, some Pacific Islands and the northern region of South America.
- It will result **2-3 degrees Celsius cooler than average Sea Surface Temperature (SST).**
  - o However, this may not prevent 2020 from being one of the warmest years on record.
  - o Also 2016-2020 is expected to be the warmest five-year period on record.

El Niño-Southern Oscillation (ENSO)

- **El Niño and La Niña are opposite phases of the ENSO.** La Niña is sometimes referred to as the cold phase of ENSO and El Niño as the warm phase of ENSO.
- The ENSO cycle refers to the **fluctuations in temperature between the ocean and atmosphere in the east-central Equatorial Pacific** (approximately between the International Date Line and 120 degrees West).
  - o Along with impact on Sea Surface Temperature (SST) the ENSO also has an **impact on rainfall, temperature and wind patterns across the world.**
- La Niña and El Niño **usually last between 9 and 12 months.** While their frequency is fairly irregular, they take place every two to seven years. **Typically, El Niño occurs more frequently than La Niña.**
  - o **Normal year:** In a normal year, the easterly winds along the equator push warm water westward. Warm water at the surface of the ocean blows from South America to Indonesia.
    - ✓ As the warm water moves west, nutrient rich cold water from the deep rises up to the surface reaches on the coast of South America. This phenomenon is called **upwelling.**
  - o **La Niña:** La Niña is the **unusual cooling of sea surface temperatures.** In a La Niña year the easterly winds blow much stronger; this makes the water near the equator a few degrees colder than normal. **Thus**
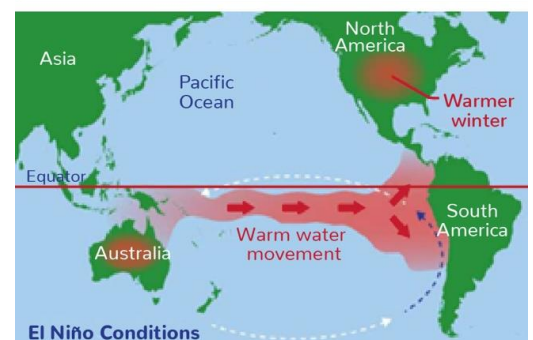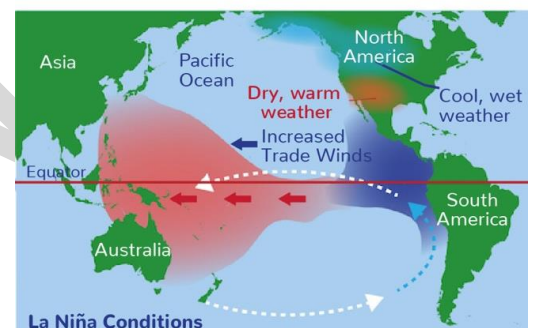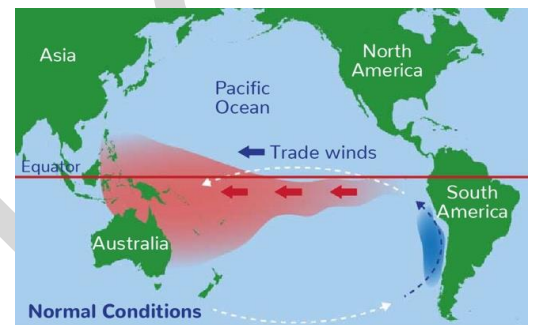
upwelling is enhanced. Also this change in the ocean's temperature impacts the weather across the world.

o **El Niño:** El Niño is the **unusual warming of sea surface temperatures (SST).** In El Niño year the easterly winds are much weaker than usual. They actually blow the other way from west to east (toward South America instead of Indonesia). So, the warm surface water along the equator piles up along the coast of South America and then moves north towards California and south toward Chile.

La Niña vs. El Niño

A La Niña phenomena generally affects the same regions that are impacted by El Niño, with opposite climatic consequences.

Characteristics	La Nina	El Nino
SST in the central and east-central Equatorial Pacific	**large-scale cooling** (Cold phase of ENSO)	**Large-scale warming** (Warm Phase of ENSO)
Up welling	Enhanced	Reduced
Trade winds in the Pacific	Stronger than normal	Weaker
Indian Monsoon	Better than normal Monsoon in India (may cause floods)	Weakens the Indian Monsoon (may cause draught)
Frequency of occurrence	Less frequent	More frequent

Impact of La Niña

- **Impact food production:** La Nina weather system could stir global food production, sending prices higher, as potential droughts and floods bring upheaval to a suite of key agricultural commodities from Southeast Asia to South America.
- **Fishing Industry:** La Niña usually has a positive impact on the fishing industry of western South America. Upwelling brings cold, nutrient-rich waters to the surface. Nutrients include plankton eaten by fish and crustaceans.
- **Water Supply:** Rainfall associated with the summer monsoon in Southeast Asia tends to be greater than normal (sometimes floods also occur), especially in northwest India and Bangladesh.
  o **La Niña results in heavy or better monsoon rains in India**, heavy floods in Australia, droughts in Peru and Ecuador.
- **Colder winter in India:** During La Niña years, usually, temperature over northern parts of country becomes relatively low. In that situation winter may be relatively colder.
  o La Niña could also affect the **South West Indian Ocean Tropical Cyclone season, reducing the intensity.**

6. SCIENCE AND TECHNOLOGY

6.1. MANNED SPACE MISSION

Why in news?

Recently NASA launched its first full-fledged human mission (CREW-1) using a privately owned spacecraft.

About CREW-1 Mission

- It is part of **NASA's first commercial human spacecraft system** with a crew of four astronauts to the International Space Station (ISS), onboard SpaceX's Crew Dragon spacecraft called Resilience.
- It is the first of 6 crewed missions that NASA and SpaceX will operate **as part of NASA's Commercial Crew Program (CCP).**
- **ISS** is a multi-nation construction project that is the largest single structure humans ever put into space.
  - o It is a large spacecraft which orbits around Earth and is a **platform for long-term research for human health.**
  - o **Main partner countries** include NASA (United States), Roscosmos (Russia), the European Space Agency, the Japanese Aerospace Exploration Agency and the Canadian Space Agency.
  - o Current plans call for the **space station to be operated through at least 2024.**

Manned Space Mission

- Manned Space missions includes **sending human aboard spaceflights beyond the gravity of the Earth.**
  - o In April, 1961 a Soviet cosmonaut Yuri Gagarin became the first person to reach the space.
  - o Until now **only the US, Russia and China** have managed to send manned missions to outer space.
- India's Indian Space Research Organisation is also planning to launch its first manned space mission **Gaganyaan.**
  - o Gaganyaan has been designed to carry **three Indian astronauts to the low earth orbit** (an orbit of 300-400 km) for a period of five to seven days.
  - o It will **take off on a GSLV Mk III** which is capable of launching **four-tonne satellites in the Geosynchronous Transfer Orbit** (GTO).
    - ✓ GSLV MkIII is configured as a **three stage vehicle: Two solid** strap-on motors; **One liquid** core stage and a high thrust **cryogenic** (mixture of liquid oxygen and liquid hydrogen) upper stage.
  - o **Gaganyaan National Advisory Council** has been created with members from different institutions and industries to deliberates on various aspects of the mission.
  - o **Gaganyaan includes** a Space Capsule Recovery Experiment (SRE-2007), Crew module Atmospheric Reentry Experiment (CARE-2014), GSLV Mk-III (2014), Reusable Launch VehicleTechnology Demonstrator (RLV-TD), Crew Escape System and Pad Abort Test.

> **Significance of Gaganyaan**
> - The mission will add **significant value to India's space activities.**
> - It re-establish India's role as a key player in the new space industry hence improving international collaboration and **giving space to Space diplomacy.**
> - The securitisation of outer space has an **impact on national security** as a result of which outer space is increasingly seen as a 'strategic domain'.
> - **Spinoff technologies,** attraction of talent to scientific careers, scientific knowledge etc.
> - It is expected to give **impetus to economic activities within the country** in terms of employment generation, human resource development and enhanced industrial capabilities.

What are the challenges for India to carry out Manned Space Missions?

- **Financial:** These missions require exorbitantly huge investment as they are highly technology intensive.
  - o Initial cost of Gaganyaan was projected to be Rs. 12, 000 crore. However, ISRO is required to complete the project with a budget outlay of Rs. 10,000 crore only.
- **Technological challenges**
  - o **Mastering of complex reentry and recovery technology:** Unlike other spacecrafts manned spacecrafts needs to comeback safely. While reentering the Earth's atmosphere, the spacecraft needs to withstand very high temperature and also ensure a precise speed and angle.
  - o **Crew escape system:** It provides an emergency escape mechanism for the astronauts in case of a faulty launch.

- o **Developing regenerative environment in the spacecraft:** As astronauts could carry only limited supply with them, regenerative environment needs to develop for continuous supply of food water, oxygen, carbon-di-oxide and to manage human wastes.
  - o **Need of heavier rockets:** A heavy-lift rocket simplifies the mission architecture by allowing more systems to be integrated into mission vehicles. Such rockets enable contingencies to be mitigated without having to rely on another launch.
- **Training of astronauts:** Astronauts have to live in zero gravity, bear almost 10 times more radiation than what people are subjected to on Earth.
  - o **Awareness of celestial objects in the path of a rocket/satellites, and communication** is also a major challenge.
  - o Year 2012 was set as a target for setting up a training centre for astronauts. However, this project got delayed as a result of which Indian astronauts are being trained in Russia.

Way ahead

- **Leveraging private sector:** ISRO is leveraging the capability of private sectors for various inputs required for developing the spacecraft. It should expand its collaboration with private sector for developing the infrastructures also.
- **Expanding International collaboration:** Other than Russia, the US and France had also offered training support to astronauts for Gaganyaan. Collaborating with more countries would provide better choices.
- **Doing away with the bureaucratic hassles:** CRYOGENIC ENGINE DEVELOPMENT was delayed for decades due to bureaucratic hassles. Priority should be given to ensure that required research and development (R&D) is carried out seamlessly.
- **Capacity building:** ISRO is imparting basic knowledge on Space Technology, Space Science and Space Applications to the 10th std. students (through its programme like 'Yuvika'). Similar programmes should be carried out for imparting specialized knowledge in the field to the youth
- To overcome the challenges of human spaceflight a steady and **continuous upward progression toward greater societal, scientific and technological development** is required.

6.2. VENUS ORBITER MISSION: SHUKRAYAAN

Why in news?

The Indian Space Research Organisation (ISRO) has short-listed 20 space-based experiment proposals, for its proposed Venus orbiter mission 'Shukrayaan'.

More about news

- ISRO has been soliciting ideas for **scientific instruments/payloads for a Venus-based mission** since 2018
- For the mission **20 proposals were received**, including collaborative contributions from Russia, France, Sweden and Germany.
- The one already selected is **France's VIRAL instrument (Venus Infrared Atmospheric Gas Linker)** co-developed with the Russian space agency (Roscosmos) and French space agency

Why to explore space?
- Exploration of Mars led to found evidence of water. **Further humans can build upon this knowledge and look for signs of life** and investigate Mars' geological evolution, because it is the most similar planet to Earth in the Solar System.
- Operating in translunar space (surrounding the Earth-moon system) can **research galactic cosmic radiation–potentially** the most threatening element to humans.
  - o Exploring such radiations in space may also lead to **medical advancements on Earth.**
- Exploring near Earth objects helps to study the material that came from the solar nebula, and find answers of questions like: **how did the solar system form and where did the Earth's water and other organic materials such as carbon come from?**
- Study of asteroids may lead to learn about past Earth impacts and possibly find ways to **reduce the threat of future impacts.**
- Also, space exploration will help to learn about the **valuable resources available in space**, and further develop ways to use them in our quest for more efficient and affordable exploration.

(CNES and and the **LATMOS atmospheres,** environments and space observations laboratory attached to the French national scientific research centre.
- In the India's mission to Venus, **Swedish Institute of Space Physics is also engaged**.
- The **possible detection of phosphine in Venus' upper atmosphere** shows prospects of life there.
- Till now, **no human has visited Venus**, also spacecraft that have been sent do not last very long due to high surface temperatures.

About Venus

- **Formation:** It is believed that **Earth and Venus both planets share a common origin, out of a condensing nebulosity** (gravity pulled swirling gas and dust together) around 4.5 billion years ago.
- **Similarity with earth**
  - Venus with a **radius of 6,052 km, density 5250 kg/m3 and gravity 8.9 m/s2** is roughly the similar to the Earth with radius 6378 km, density 5520 kg/m3 and gravity 9.8 m/s2.
  - Venus has a **central core, a rocky mantle and a solid crust, similar to Earth's structure**.
  - Even though Venus is similar in size to the Earth and has a similarly-sized iron core the **magnetic field is much weaker than the Earth's due to Venus' slow rotation**.
  - Venus has **mountains, valleys, and tens of thousands of volcanoes**, with highest mountain Maxwell Montes, 20,000 feet high (8.8 kilometers), similar to the highest mountain on Earth, Mount Everest.
  - Hence, Venus is often **described as the 'twin sister' of the Earth because of the similarities in size, mass, density, bulk composition and gravity.**
- **Atmosphere**
  - **Venus' atmosphere consists mainly of carbon dioxide, with clouds of sulfuric acid droplets**, that traps the Sun's heat, resulting in surface temperatures higher than 880 degrees Fahrenheit (470 degrees Celsius).
  - Also, **Venus is around 30% closer to the Sun** as compared to Earth resulting in much **higher solar flux.**
  - Venus is the **brightest planet in solar system because** it is covered with clouds that reflect and scatter sunlight.
- **Orbit and rotation**
  - Venus rotate from **east to west, unlike the Earth from west to east** and **completes one rotation in 243 Earth days**, the longest day of any planet in our solar system.
  - Venus makes a **complete orbit around the Sun (a year in Venusian time) in 225 Earth days** and **orbit around the Sun is the most circular,** while other planet's orbits are more elliptical, or oval-shaped.
  - Though Venus has **no moons**, where Earth has one moon.

> **Other missions to Venus**
> - **'Venera' series of Soviet Union** (Orbiter and lander missions)
> - **'Mariner' series of NASA** (Orbiter and lander missions)
> - **European Space Agency's Venus Express** orbited the planet between 2006 and 2014.
> - **Japan's Akatsuki spacecraft** entered into Venus orbit in 2015.
> - **NASA's Magellan mission**, which studied Venus from 1990 to 1994, used radar to map 98% of the planet's surface.
> - All these missions helped to record Venus' **temperature, detect the density, understand composition and dynamics of a planetary atmosphere** of Venus.

About 'Shukrayaan'

- **Shukrayaan is mission to Venus is to study the planet for more than four years** to be launched either in 2024 or 2026 during optimal launch window (Venus is closest to the Earth), which comes about every 19 months.
  - Launching of mission during optimal launch window **will minimize spacecraft fuel use** during the planetary transit.
- The **payload capability** (consisting of a synthetic aperture radar and other instruments) of the proposed 2500-kg satellite, is likely to be **175 kg with 500W of power**.
- It is planned **to be launched onboard GSLV Mk II rocket or GSLV Mk III** rocket to carry more instruments or fuel.
- The **proposed orbit is expected to be around 500 x 60,000 km around Venus**.
  - Over the year it will **use aerobraking to lower its orbit to 200 by 600 kilometers**.
  - This polar orbit will be the final one used for scientific observations.
- **Scientific objectives of mission:**
  - investigation of the surface processes and shallow subsurface stratigraphy
  - study solar wind interaction with Venusian Ionosphere
  - study the structure, composition and dynamics of the planet's atmosphere.
- **Instruments to be carried with mission:**
  - **Synthetic aperture radar (SAR) to examine the Venusian surface,** which is shrouded by thick clouds that make it impossible to glimpse the surface in visible light. (earlier launched on Chandrayaan-2 spacecraft)

- o Swedish-Indian collaboration, **the Venusian Neutrals Analyzer to examine how charged particles from the sun** interact with the atmosphere of Venus. (earlier launched on the Indian Chandrayaan-1).
- o Also, **instrument to examine the planet's atmosphere in infrared, ultraviolet and submillimetre wavelengths** and presence of phosphine, other biomarkers and locate any active volcanism could be confirmed using the **orbiter's Near Infrared Spectrometer**.

6.3. GEOSPATIAL TECHNOLOGY

Why in news?

Recently, the United Nation Economic and Social Commission for Asia and the Pacific (UNESCAP) published the report titled **"Geospatial Practices for Sustainable Development in Asia and the Pacific 2020."**

Key findings of the report

- Asian and Pacific nations are **increasingly leveraging space technology and geospatial information** to respond to challenges on the ground including containing COVID-19 pandemic.
  - o **Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018- 2030)** was adopted to capitalize on the technological and geospatial innovations in the region.
- Report praised India on India's initiatives like '**BHUVAN', Water Resource Information System (WRIS)** etc.
- Report calls for **re-skilling of young workers to enhance their knowledge, integrating geospatial data with other data sets**, enhancing data security and privacy etc.

> **About UNESCAP**
> - It serves as the United Nations' regional hub **promoting cooperation among countries to achieve inclusive and sustainable development.**
> - It is one of the 5 **regional commissions under the jurisdiction of the United Nations Economic and Social Council** (UN ECOSOC)
>   - o Others are African Group, Eastern European Group, Latin American and Caribbean Group, Western European and Others Group
> - **India is a member** of this group.

About Geospatial Technology

- It is an emerging field of study that includes **Geographic Information System (GIS), Remote Sensing (RS) and Global Positioning System (GPS).**
- It enables to **acquire data that is referenced to the earth and use it for analysis,** modeling, simulations and visualization.
- Geospatial technologies would be **central to information management in India** in future

The six priority thematic areas of the Plan of Action that support the implementation of the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction

and the applications of this technology can have great social as well as national relevance.
- **Several GIS based initiatives** are being implemented in India, such as:
  - o Natural Resource Information System (NRIS) under National Natural Resources Management System (NNRMS) of Planning Commission,
  - o National Spatial Data Infrastructure (NSDI) of the Department of Science and Technology (DST),
  - o National Urban Information System (NUIS) of Ministry of Urban Development (MUD).
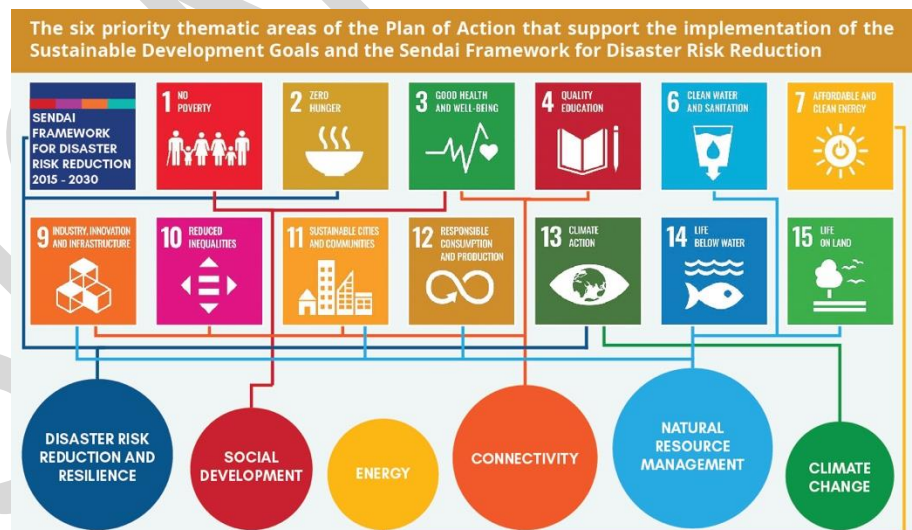
Application of geospatial Technology

- **Informed decision making:** It allows to **make informed decisions based on the importance** and priority of resources most of which are limited in nature.Geospatial information has proven instrumental in delivering timely and authoritative information in governance matters.
- **Disaster risk reduction and resilience:** Cyclone Fani was one of the severest cyclones in the Bay of Bengal, affecting around 100 million people. However, its impact was contained due to early warning systems, detection, etc. using Geospatial information.

- o **Remote sensing satellites** (like OCEANSAT series, CARTOSAT series) and earth observation satellites like (Cartosat-1 & 2, Resourcesat-1 & 2 etc) are also being utilised for vulnerability mapping and for taking preventive measures.
- **Social Development:**
  - o Odisha has used high resolution maps produced by drone imagery **to grant land title to its slum dwellers** which decreased its slum population from 23.1% in 2011, to 3.72% in 2020.
  - o **In agriculture**, satellite-based fishing, precision agriculture, monitoring and modelling of crop conditions, insurance monitoring, forestry monitoring, etc can be used.
- **Energy:** To determine the suitability of a location for generating solar energy the ISRO uses solar data derived from measurements on-board the geostationary satellite Kalpana.
- **Connectivity:** Geospatial information through Road Asset Management system assist in accurate and scientific maintenance planning, enhance road safety measures and plan the development of the National Highways network in India.
- **Natural Resource Management**
  - o **India-WRIS (Water Resources Information System)** developed by the ISRO to provide a single portal for all water resources data and information. It helps in planning, development and integrated water resources management.
  - o **Land use management** is being aided by the geoportals Bhuvan and MOSDAC of ISRO that helps to disseminate satellite data, geophysical and biophysical data products and information derived using Earth observation (EO) data.

Challenges in effective use of geospatial information
- **Absence of a comprehensive geodata policy:** There are a total of 17 national-level policies and rules dealing with geospatial data, under six ministries/departments.
  - o Despite the existence of the National Data Sharing and Accessibility Policy 2012, most geospatial data created in India lies in silos. There is no single platform that can be used by all departments to collate value-added data.
- **Technological challenges & infrastructural challenges:**
  - o **Super computers and quantum computers** play a vital role in storage and processing of data. India's fastest supercomputer, PARAM-Siddhi AI ranks 63rd in the list of most powerful supercomputers in the world.
  - o **Continuously Operating Reference System (CORS)** which is rapidly becoming the preferred method for accurate 3D positioning across the world and forms the basis for any Smart City agenda is yet to take off in India.
- **Accessibility of space-derived data:** National Spatial Data Infrastructure (NSDI) is only partially open and free for the public. Thus availability of up-to-date, contextual, and innovation-fostering data to the private sector, and individuals is limited.
- **Digital-technological divide and lack of data privacy** law are also big challenge.

What needs to be done for being able to use geospatial information effectively?
- **Invest in national experts** for building national capacity to operate and design geospatial applications sustainably.
- **Integrate ground and space data, crossover data,** with georeferenced tags and statistical processing which will provide important evidence for cost-benefit and risk analysis inputs in order to support policy and planning.
- **Ensure privacy, safety and ethics of data** by obtaining informed consent whenever possible and using second-level data with caution.
  - o Anonymizing and/or de-identifying data with personal information so that it cannot be traced back to individuals and an ethics code for using frontier geospatial technologies is also needed.
- **Provide open data access** by making use of cloud-based platforms for open data access. They offer a unique opportunity to use and analyse geospatial information without investment in data storage and computational resources.
- **Collaborate across local and international levels:** There is a need for engagement across ministries and responsible authorities. International collaboration should be leveraged to address the geospatial digital divide and other related issues.

6.4. DRAFT DATA CENTRE POLICY 2020 AND INDIA AS A GLOBAL DATA CENTRE HUB

Why in news?

Ministry of Electronics & Information Technology (MeitY) has recently drafted a Data Centre policy aimed at making **India a Global Data Centre hub**, promote investment in the sector, propel digital economy growth.

More on the news

- **Data centre is a dedicated secure space** within a building / centralized location where computing and networking equipment is concentrated for the purpose of collecting, storing, processing, distributing or allowing access to large amounts of data. Types of Data centres include-
  - o **Co-location data center-** It is a large data center facility that rents out rack space to third-party clients for housing their servers or other network equipment.
  - o **Edge data centers**- They are highly localised storage facilities, which can effectively cater to a building, an organisation's internal clusters of machines as well as external machines with access to the internal network.

Importance of Data Centre Sector in India

- **Fulfilling the growing demands of the country:** Large size of the digital population in India and the growth trajectory of digital economy, especially software as a service (SaaS) sector, necessitate a strong growth of Data Centres.
  - o India is home to 1.15 billion mobile users, 661 million broadband users, 376 million social media users, 401 million smart phone users and 564 million internet users consuming around to 2.3 million petabytes in 2020.
- **Maintaining Data sovereignty**: Presence of domestic data centres will allow companies to store critical personal data and sensitive personal information of Indian citizens within India.
- **High growth potential**: India's data centre market is expected to reach values of approximately $4 billion by 2024 and is set to play a key role in job creation, bring in foreign investment and contribute to the growth of the country's economy.
- **Providing digital services to other sectors**: Growth of Data Center service providers can create an enabling ecosystem for provision of services such as data management, cyber security, Big Data and Data Analytics etc. for enterprises in India.

Factors enabling the growth of data centers in India

- **Rapid growth in Data consumption**: The per capita data consumption is estimated to grow from 2.4 GB in 2017 to 14 GB by 2022 due to factors such as declining bandwidth price, availability of high-speed data connectivity and surge in sectors such as e-commerce, digital entertainment (OTT platforms), fintech, digital education etc.
- **Digitization initiatives**: of the government like e-Governance drive, Smart Cities, Digital India, Digital Health Mission etc. will result in the huge volumes of data (structured as well as unstructured) requiring investment for storage, processing and security.
  - o Further, states like **Maharashtra, Telangana and Tamil Nadu** provide incentives to data centre companies such as Stamp duty exemption, electricity duty exemption during investment period, building fee rebate etc.
- **Upcoming trends:** like the adoption of 5G, cloud-based computing, Artificial intelligence, Big Data analysis and Internet of Things (IoT) are expected to increase storage volume requirement in addition to the "digitisation fillip" caused by the disruptions in the wake of the Covid-19 pandemic.
- **Data localization norms**: Several provisions of **Personal Data Protection (PDP) Bill**, 2019 and **draft e-commerce policy** require storage of critical data within the country. Also, **RBI mandate** requires personal financial data of Indian citizens to be stored on local servers in the country. Such data localisation norms are likely to increase the presence of data centres in India.
- **Other factors**: Higher adoption of technology by SMEs in every sector, favourable Startup ecosystem with growth in e-commerce sector, availability of skilled workforce in Information and technology sector etc. will also spur the demand for more data centers in India.

Challenges in establishing Data Centres in India

- **Unstable and expensive power supply**: Unavailability of uninterrupted, clean and cost-effective electricity remains a hurdle for the Data Centre sector in India. Power failures in data centers can lead to massive loss of data, business disruptions, revenue loss and decrease end-user efficiency.
- **Need of robust internet connectivity**: Data centres need low latency, high bandwidth, stable and secure internet connectivity, which is not available uniformly across India.
  - India ranks 74th amongst 174 nations with an average download speed of 43.0 mbps while global average being 84.3 mbps.
- **Lack of published standards**: such as specialised building norms for building the Data Centres, encryption standards which are essential to prevent breaches etc.
- **Skill shortage**: The sector needs highly-skilled professionals in specialized areas such as cooling, power, security, network which aren't always readily available in India.
- **Costly real estate**: Data centres in India are mainly established in metro cities such as Mumbai, Chennai etc. where cost of commercial lands are extremely high.
- **Need of high investment**: Data centres are capital intensive and have high operational expenditure. With Indian banking sector facing issues of NPAs and liquidity crisis, securing necessary finances can be an issue for this sector.
- **Import dependence**: Lack of innovation and low investment in R&D has led to dependence on imported IT and other electronic equipments for the sector in India.

Key Features of Draft Data Centre Policy, 2020 that can help India become a Global Data centre hub

- **Proposal to provide Infrastructure Status to the Data Centre Sector**: This will help the sector in **availing long-term institutional credit** at easier terms and reduce the cost of borrowing.
- **Simplified clearances**: establishing a **single window clearance** with the defined timelines.
- **Setting up of pre-provisioned Data Centre Parks**: with infrastructure like road connectivity, water availability etc. States will be encouraged to demarcate specific zones (land parcels) for them.
- **Data Centres to be declared as an Essential Service**: under the Essential Services Maintenance Act, 1968 (ESMA). This will enable seamless continuity of services even during times of crisis.
- **Availability of uninterrupted, clean and cost-effective electricity**: by focusing on policy measures such as-
  - facilitating Data Centre Parks to setup own power generation units to ensure quality of power;
  - enabling effective open access system to allow Data Centre service providers directly procure power from generation companies;
- **Recognizing Data Centres as a separate category under National Building Code:** since Data Centre buildings require different norms as compared to other office/ commercial buildings.
- **Setting-up of Data Centre Economic Zones**: Government of India proposes to set-up at least four Data Centre Economic Zones (DCEZ). The proposed DCEZ would create an eco-system of Hyperscale Data Centres, Cloud Service Providers, IT companies, R&D units and other allied industries.
- **Promoting indigenous technology development, research and capacity building**.
- **Setting up an Institutional Mechanism**: This will be done by establishment of bodies such as-
  - **Inter-Ministerial Empowered Committee (IMEC)** under the Chairmanship of Secretary, Meity.
  - Independent **Data Centre Industry Council (DCIC)** which would act as an interface between the sector and the Government.

6.5. C.V. RAMAN

Why in news?

Recently Chandrasekhara Venkata Raman was remembered on his 50th death anniversary (21st November 2020).

More about C. V Raman

- He was born at Tiruchirappalli in Tamil Nadu and worked as a **civil servant** in the Indian Finance Department in Calcutta.
- He founded the **Indian Journal of Physics in 1926, Indian Academy of Sciences in 1933** and established **Raman Institute of Research at Bangalore in 1948.**

- He was awarded with the **Nobel Prize for Physics in 1930** for the discovery of the Raman effect and **Bharat Ratna in 1954**.
- India celebrates **National Science Day on 28 February** of every year to commemorate the discovery of the Raman effect in 1928.

Contributions to physics by C. V. Raman

- **Raman effect/ Raman scattering:** In 1922 he published his work on the '**Molecular Diffraction of Light'**, which ultimately led to his discovery of 'Raman Effect' in 1928.
  - o Light consists of particles called photons; whose energy is directly proportional to the frequency with which they travel.
  - o When they strike molecules in a medium at high speeds, they bounce back and scatter in different directions depending on the angle with which they hit the molecules, is known as **Raman effect**.
  - o Daylight interacts with the gases in Earth's atmosphere and scatters, instead of coming back straight to our eyes from the sun.
    - ✓ Blue light is scattered most, which means that it involves our eyes from all over within the sky, thus the sky appearance blue.
    - ✓ Yellow and red light are scattered least, thus we tend to typically see a yellow sun, and generally a red sun.
- **Raman spectroscopy:** It is used to better understand the composition of the structures, crystallographic orientation of the sample and the change in vibrational frequency for chemical bond in Raman effect.
  - o It is used in many varied fields where **non-destructive, microscopic, chemical analysis and imaging is required.**
  - o It can provide **key information easily and quickly.**
  - o It can be used to **rapidly characterise the chemical composition and structure of a sample**, whether solid, liquid, gas, gel, slurry or powder.
  - o Raman spectroscopy has been used to **monitor manufacturing processes in the petrochemical and pharmaceutical industries.**
  - o It is additionally utilized in medication to research living cells, tissues and even in detection of cancers - while not inflicting damage.
- **Scattering by ocean:** He used a prism, miniature optical instrument and optical device to review the sky and therefore the ocean and found that the ocean was scattering light.
  - o This, led to oppose the view of Lord Rayleigh, who said sea's colour is solely a mirrored image of the sky's colour.

7. SOCIAL ISSUES

7.1. PATERNITY LEAVE

Why in news?

Recently the Board of Control for Cricket in India (BCCI) granted paternity leave to the Indian captain.

What is paternity leave?

- Paternity leave is a **leave period (paid) reserved exclusively for fathers in relation to childbirth** and it is granted to father in addition to the other annual leaves.
- **Paternity leave in India**
  - There is **no legal provision for paternity leave** in India.
  - **All India and Central Civil Services Rules** allow Central government employees **with less than two surviving children** 15 days of paternity leave.
    - ✓ This also extends to cases where **a child has been adopted.**
    - ✓ This **could be availed up to six months** from the date of delivery or adoption of the child.
  - **Private organisations:** There isn't any such law that mandates private sectors to provide the paternity leaves to its employees.
    - ✓ Certain private establishments also provide paternity leaves. Like Food aggregator **Zomato India** provides 26 weeks paid leave for new fathers.
  - **In Chander Mohan Jain v. N.K Bagrodia Public School, 2009** the Delhi High Court held that "all male employees of unaided recognized private schools were entitled to paternity leave."
- **UNICEF** had the provision of four weeks paid paternity leaves to its male employees but now it has been extended to sixteen weeks across all its offices worldwide.

WHERE FATHERS GET THE MOST PAID PARENTAL LEAVE

Weeks of paid parental leave that can only be taken by the father

Country	Weeks
South Korea	53
Japan	52
France	28
Sweden	14
Norway	10
Germany	9
Spain	2
United Kingdom	2
Australia	2
Turkey	1
Canada	0
United States	0

Related information

Child Care leaves

- According to All India Services (Leave) Rules, **Women employees and "single male parent" employees** with less than 2 surviving children are granted 730 days of aggregate child care leave.
- This could be **availed anytime before the child reaches the age of 18** (for disabled child no ceiling on the age of the child).
- Child Care Leave was introduced by the 6th Pay Commission.

Maternity leaves

- The leave policy is regulated by the **Maternity Benefit (Amendment) Act, 2017.**
- The law applies to all establishments **employing 10 or more people.**
- **For the first surviving child up to 26 weeks of maternity leave** is granted for two or more surviving children the maternity benefit is for 12 weeks only.
- **For adoptive and commissioning mothers 12 weeks** of maternity leave is granted.
- To be eligible for maternity benefit, a woman must have been working as an employee in the **establishment for a period of at least 80 days in the past 12 months.**
- **Act makes it mandatory for employers to educate women** about the maternity benefits available to them at the time of their appointment.

Significance of paternity leave

- **Emotional need of the child:** According to International Labour Organization, a child requires equal support from both parents in the first 1,000 days. Quality father–child interactions enhance the resources of paternal capital available to the child thus contributing to healthy development of the child.
- **Health of the mother:** Much of the attention is typically placed on the health and well-being of the newborn baby. The postpartum depression and anxiety symptoms of the new mothers are generally ignored. Father's ability to stay home may play a role in reducing such depressions and anxiety.
- **Nuclearisation of family:** As a result of which the level of child-care support to the mother from extended family members is much less available nowadays. Paternity leave would ease the burden of the mother who otherwise have to bear the whole responsibility of the child care alone.

- **Bridging the gender gap at home for facilitating gender equality at workplace:** Women's equality in the workplace cannot be achieved without men's equality in the home. As per **All India Survey on Higher Education (AISHE) 2018-19**
  - Females constitute 48.6% of the total enrolment in higher education
  - The Gross Enrolment Ratio (GER) for females in higher education is 26.4% against 26.3% for boys.
  - The **Gender Parity Index (GPI) has increased** from 0.92 in 2014-15 to 1 in 2018-19.
  - However, these achievements in education **could not be translated in women's participation of workforce**.

Challenges in paternity leave

- **Lack of will power among employers:** Many organisation do not provide even maternity leave which is statutorily backed by the Maternity Benefit (amendment) Act 2017.
- **Funding:** Public exchequer has its own limitations while private organizations may not be willing to bear any extra cost and if employees are made to fund such leave policy then the idea may not result in desired outcome.
- **Patriarchal society:** According to International Labour Organization, Indian Men perform only 10% of the unpaid care work and more than 80% believe that taking care of the child is the primary responsibility of the mother.

Way ahead

- **Universalise the Gender Equity Movement in Schools (GEMS) project:** It is a gender sensitization programme for 12-14 year young school kids being implemented in the public schools of Maharashtra from 2010.
  - Its objective is to influence the **formation of more gender-equitable norms among adolescents**.
  - The audit of the program has revealed a positive outcome among students for gender issues.
- **Nudging:** Various means for attitudinal and behavioural changes needs to be employed ensuring active role of male partner before, during and after the child birth.
- **Legislative reforms:** Paternity Benefit Bill, 2018 should be passed with utmost propriety for ensuring better outcome of all the steps taken for behavioural changes.
  - Bill pushes for equal **'parental' benefits for both the mother and the father.**
  - It aims to cover the **organised sector, the unorganized sector and the self-employed.**
  - It also **creates Parental Benefit Scheme Fund** which will be utilized to meet the costs related to paternity benefits.

7.2. MANUAL SCAVENGING

Why in news?

Ministry of Housing and Urban Affairs launched the **'Safaimitra Suraksha Challenge'** in 243 cities across the country **to end manual scavenging by 2021.**

More on news

- Under the campaign, **sewers and septic tanks in 243 cities will be mechanized and a helpline created to register complaints** if manual scavenging is reported. Cities which reach the end result will receive prize money.
- Its mission is to **prevent any loss of life** due to the issue of 'hazardous cleaning' of sewers and septic tanks.
- The measures are part of the **Swachh Bharat Abhiyaan (Clean India initiative).**

Background

- **Manual Scavenging:** It is the practice of manual cleaning of human excreta from **service/ dry latrines.**
  - The scavengers crawl into the dry latrines and collect the human excreta with their bare hands, carry it as head-load in a container to dispose it off.
  - **Service/dry latrine** is a type of toilet which is waterless and from which human excrement is collected from buckets, cesspools and privies manually.
- **Status:**
  - According to the data collected by the Safai Karmachari Andolan (SKA), **UP** is among states with the **highest number of dry and service latrines**.

- o A recent government survey conducted in 170 districts in 18 States identified 54,130 **people engaged in this job** as of July 2019.
- o As per the data collated by SKA, there **were 1,870 sewer deaths reported in India** from 1993-2019 with maximum sewer death occurring in Tamil Nadu.

Reasons why manual scavenging still persists in India

- **Continued presence of insanitary latrines:** There are about 2. 6 million insanitary latrines (dry toilets) that require cleaning by hand.
- **Lack of infrastructural and institutional Machinery:** The numerous operational activities along the sanitation chain — emptying and conveyance of faecal sludge, sewer maintenance, treatment, and end use/disposal have often been invisible or at least disregarded in regulatory frameworks.
  - o Due to engineering defects in septic tank, **machine cannot clean it after a point and require manual cleaning.**
- **Social perception:** It is a caste based and hereditary profession and defined as a "cultural occupation" attached to lower castes.

Measures taken so far in India:
- **Constitutional/Legal/Institutional Measures:**
  - o India's Constitution **bans the practice of untouchability under Article 17**, and the **Protection of Civil Rights Act, 1955**, prohibits compelling anyone to practice manual scavenging.
  - o **National Commission for Safai Karamcharis (NCSK) Act, 1993** enacted to form a statutory body NCSK to look into matters concerning the Safai Karamcharis' welfare.
  - o **Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993,** declared the employment of manual scavengers and construction of dry toilets to be punishable with fines and imprisonment.
  - o Superseding the 1993 Act, **the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013,** goes beyond prohibitions on dry latrines, and outlaws all manual excrement cleaning of insanitary latrines, open drains, or pits.
  - o **National Safai Karmacharis Finance and Development Corporation**, established in 1997, mandated to monitor implementation of programs and extend financial assistance.
- **Sanitation Schemes**
  - o Integrated Development of Small and Medium Towns Scheme (1969),
  - o Total Sanitation Campaign, 1999, renamed Nirmal Bharat Abhiyan
  - o Swachh Bharat Abhiyaan, 2014
- **Rehabilitation Schemes**
  - o National Scheme of Liberation of Scavengers and their Dependents, 1992.
  - o Scheme for Self-Employment for Rehabilitation of Manual Scavengers, revised in 2013.
- **Civil Society/other Initiatives**
  - o **Safai Karmachari Andolan (SKA), 1995**, currently spearheaded by **Wilson Bezwada**, is a nationwide movement to completely eradicate the caste-based occupation, and rallies for the rehabilitation of scavengers towards dignified livelihoods.
  - o In 2002, **Rashtriya Garima Abhiyan—**a coalition of 30 community-based organizations from 13 states—started a campaign to encourage manual scavengers to voluntarily leave the practice.

- o The blindness is fostered by the fact that manual scavengers come from among the Dalits; the **lack of opportunity and education compels them to continue** in their inherited work.
- **Loopholes in the legal protection:** 2013 Act bans 'hazardous cleaning' of septic tanks and sewer pits, but only if the workers are not provided 'protective gear' and 'other cleaning devices'. But it **does not define what the 'protective gear' is.**
  - o The Act does not address critical aspects of provisions like the **rehabilitation** of those who were liberated from manual scavenging before passing the law in 2013.

Key challenges and risks associated with manual scavenging:

- **Occupational and Environmental Health and Safety:** They are exposed to hazardous gases and biological and chemical agents in septic tanks, sewers, pumping stations, and treatment plants
  - o Mostly work without any form of **personal protective equipment (PPE).**
  - o Many informal and temporary sanitation workers operate with **little to no formal training** on the occupational risks of their work.
- **Legal and Institutional Challenges:** They often suffer because of informal nature of work, weak legal protection and lack of enforcement of existing rules.
- **Social Challenges:** Low-grade, unskilled sanitation workers often face social stigma and discrimination. This is especially true when sanitation is linked to a caste-based structure

- o This stigma compounds the **social ostracizing and limitations on social mobility** that workers face and often results in intergenerational discrimination and form a **multigenerational poverty trap.**
- **Exposure to diseases:** Human faeces and urine are carriers of Hepatitis A, pinworms, Rotavirus, and E.coli exposing the workers to cholera, hepatitis, typhoid, tuberculosis, etc.

Areas for Action

- **Reform policy, legislation and regulation** that acknowledges and professionalizes the sanitation workforce along the sanitation service chain.
  - o First, **recognize all types of sanitation work** and provide the frameworks that enable the organization and empowerment of sanitation workers; workers' right to organize needs to be protected.
  - o Second, **promote the gradual formalization and mechanization** of the work.
  - o Third, **articulate protection mechanisms**, covering measures such as **personal protective equipment (PPE),** training, regular health checks, insurance, and treatment for workers to mitigate their occupational risks across the sanitation chain.
- **Develop and adopt operational guidelines** (especially local governments) to assess and mitigate the occupational risks of all types of sanitation work, including national standard operating procedures, municipal-level oversight of sanitation service providers.
- **Adoption of technology** to end manual scavenging.
  - o The **Hyderabad Metropolitan Water Supply and Sewerage Board** is using 70 mini jetting machines that can access narrow lanes and smaller colonies to clear the choked sewer pipes.
  - o In Thiruvananthapuram, a group of engineers has designed a **spider-shaped robot called "BANDICOOT"** that cleans manholes and sewers with precision.
- **Advocate for sanitation workers** and promote their empowerment to protect worker rights and amplify workers' voices through unions and associations.
- **Build the evidence base to address the issues of quantification of the sanitation workforce** and documentation of challenges that workers face and good practice in improving working conditions.
  - o **Research institutions, universities, along with national and municipal governments** could collaborate in addressing the key knowledge gaps in the sector.

Conclusion

Thus, protecting the manual scavengers in not only a matter of rights, health, and dignity of the workers themselves, but it also is key to ensuring a sufficiently large, formalized, and protected workforce to deliver and sustain safely managed sanitation services with dignity, as has been called for under the **Sustainable Development Goals (SDGs).**

7.3. MALNUTRITION IN INDIA

Why in news?

NITI Aayog has released 3rd progress report (October 2019-April 2020) on Poshan Abhiyan.

Key findings of the report

- Report takes **stock of the roll-out status on the ground and implementation challenges** encountered at various levels in Poshan Abhiyan.
- NITI Aayog warns that **Poshan Abhiyan must be stepped up in order to meet the targets** set by the Centre to reduce stunting, wasting, and anaemia by 2022.
- **Hence report suggests:**
  - o Critical importance on **improving complementary feeding** to tackle stunting.
  - o **Quality and reach of Integrated Child Development Service (ICDS) food** and improvements in the screening and referral are imperative to tackle wasting.
  - o **Multipronged approach is needed** to tackle micronutrient deficiency a
  - o **Campaigns such as Anaemia Mukt Bharat are bringing visibility to issues** within the health sector.
  - o **Urban food systems and urban health service delivery** (dominance of privates sector) pose new challenges.

How severe is India's malnutrition problem?

- **According to National Family Health Survey-4,**
  - More than a third of children under five suffer from stunting and wasting
  - 40% of children between one and four are anaemic.
  - Over 50% of pregnant and non-pregnant women were found to be anaemic.
- **According to Global Nutrition Report, 2020:**
  - Report has underscored **the possibility of India missing its global nutrition targets by 2025.**
    - ✓ India will **miss targets, for all the four nutritional indicators for which there is data available**, i.e. stunting, anaemia, childhood overweight and exclusive breastfeeding.
  - Inequalities are evident for stunting, with **stunting prevalence being 10.1% higher in rural vs urban areas.**
- India has been ranked **94 on the 2020 Global Hunger Index (GHI),** lower than neighbours like Bangladesh and Pakistan.
- Malnutrition affects cognitive ability, workforce days and health, **impacting as much as 16% of GDP** (World Food Programme and World Bank).

What hinders the eradication of malnutrition from India?

- **Paradox related to production and Accessibility**: In India, food grain yields have risen 33% over the last two decades, however, consumer's access to rice, wheat and other cereals has not increased at the same rate, due to population growth, inequality, food wastage and losses, and exports.
- **Conservative target:** India's targets are conservative as compared to the global target defined by the World Health Assembly in 2012. India lacks policy to deal with all these issues in holistic and mission mode.

POSHAN (Prime Minister's Overarching Scheme for Holistic Nutrition) Abhiyaan/ National Nutrition Strategy

- Launched in 2018, it is a multi-ministerial convergence mission with the vision to ensure **attainment of malnutrition free India by 2022** in a phased manner, through a life cycle approach, by adopting a synergised and result oriented approach.
- **50% of the cost is being borne by the World Bank** or other multilateral development and the remaining 50% is divided between the centre and state/UTs.
- **Ministry of Women and Child Development (MWCD)** is implementing it by anchoring it with the Integrated Child Development Service (ICDS)
  - ICDS Scheme was launched in 1975 for providing for supplementary nutrition, immunization and pre-school education to the children. it is seen as one of the world's largest community-based programs for early childhood development.
- **Core pillars of POSHAN Abhiyaan**
  - ICDS-CAS (Common Application Software)
  - Convergence
  - Behavioural change, IEC Advocacy
  - Training and Capacity building
  - Innovations
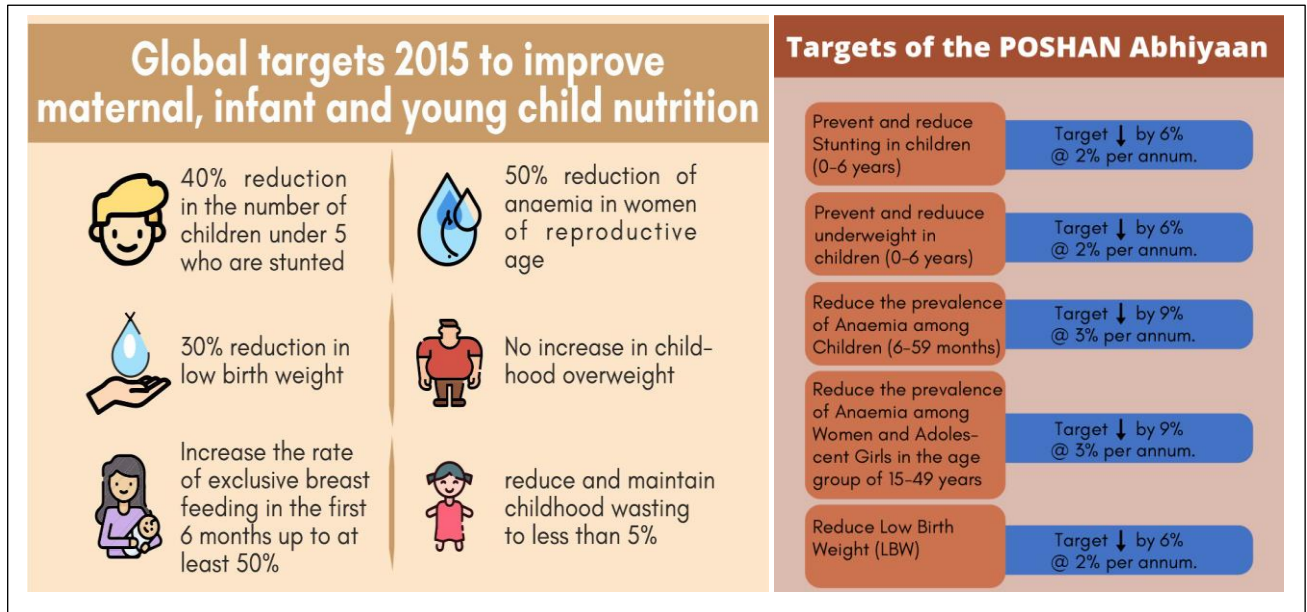 - Incentives
  - Grievance Redressal.

Malnutrition vs hunger

- Malnutrition refers to **deficiencies, excesses, or imbalances** in a person's intake of energy and/or nutrients.
- It addresses **3 broad groups of conditions:**
  - **Undernutrition** includes
    - ✓ Wasting (low weight-for-height)
    - ✓ Stunting (low height-for-age) and
    - ✓ Underweight (low weight-for-age)
  - **Micronutrient deficiencies** (a lack of important vitamins and minerals) or **micronutrient excess**
  - Overweight, obesity and dietary related **noncommunicable diseases** (such as heart disease, stroke, diabetes and some cancers).

Underlying causes behind Malnutrition

- **Poverty**: It hinders the accessibility of adequate food.
- **Lack of Awareness:** about nutritional needs of infants and young children.
- **Social strains on Women**: Early marriages of girls leads to teenage pregnancies resulting in low birth weight of the newborns, poor breastfeeding practices and poor complementary feeding practices.
- **Male domination**: In most Indian families, women even take food after the male members where they get less nutritious food.
- **Lack of health infrastructure** leads to poor access to health.
- **Lack of availability of safe drinking water** hinders proper digestion and assimilation of food and also cause water and food borne diseases.
- **Poor sanitation and environmental conditions** lead to spread of many diseases that sap children's energy and stunts their growth.
- **Other causes:** illiteracy in women and large household size.

- **Increasing diversity in consumption**: The energy and nutritional intake from cereals has decreased in both rural and urban India, and largely substituted by increased consumption of other food items such as milk and dairy products, oils and fat and relatively unhealthy food such as fast food, processed food, and sugary beverages, which has likely contributed to the emerging problem of obesity in India.

Global targets 2015 to improve maternal, infant and young child nutrition

- 40% reduction in the number of children under 5 who are stunted
- 50% reduction of anaemia in women of reproductive age
- 30% reduction in low birth weight
- No increase in child-hood overweight
- Increase the rate of exclusive breast feeding in the first 6 months up to at least 50%
- reduce and maintain childhood wasting to less than 5%

Targets of the POSHAN Abhiyaan

Target	
Prevent and reduce Stunting in children (0-6 years)	Target ↓ by 6% @ 2% per annum.
Prevent and reduuce underweight in children (0-6 years)	Target ↓ by 6% @ 2% per annum.
Reduce the prevalence of Anaemia among Children (6-59 months)	Target ↓ by 9% @ 3% per annum.
Reduce the prevalence of Anaemia among Women and Adolescent Girls in the age group of 15-49 years	Target ↓ by 9% @ 3% per annum.
Reduce Low Birth Weight (LBW)	Target ↓ by 6% @ 2% per annum.

- **Targeted Public Distribution System (PDS) and Nutritional Intake:** PDS has provided a critical nutritional supplement to the people across all states in India. However due to poor targeting, poorest 30 percent of households had lower capacity to access food.
- **Under-utilization of fund under POSAHN Abhiyaan:** Funds remaining under-utilized indicate non-adherence of the financial norms and targeted beneficiaries not being covered. In 2019-20 only 32.62% of the allocated fund was utilised. In 2017-18 it was 92.58%.
- **Slow roll out of activities by the States/UTs:** West Bengal has not joined the Poshan Abhiyaan and Odisha started activities under Poshan Abhiyaan only from October, 2019.

What will it take to eradicate malnutrition from India?

- **Enhance the effectiveness of the POSHAN Abhiyaan**
  - **Implement POSHAN-plus strategy** which apart from continued strengthening the four pillars (technology, convergence, behavioural change and capacity building) of the Abhiyaan also requires addressing the governance challenges of National Health Mission (NHM)/ ICDS delivery mechanism and renewed focus on
    - ✓ **Complementary feeding** (usually targeted at the age range of 6-24 months)
    - ✓ **Investments in education of girls and women,** reduce early marriage and early pregnancy, improving care during and after pregnancy etc.
  - **Availability of regional food items and cultural preferences may also be integrated with this abhiyaan to make it inclusive.**
- **Enhance the reach of the POSHAN Abhiyaan:** Since the Anganwadi centres (AWCs) are at the heart of POSHAN Abhiyaan, it is imperative to enhance their reach. Therefore, mini Anganwadi centres should be set up so that children, pregnant and lactating women who may not be able to travel longer distances, have easier access to them.
- **Institutionalise Capacity Building:** Regular trainings for Anganwadi; availability of basic amenities such as electricity, growth monitors, supplies are imperative for proper functioning of the AWCs and the effective provision of services.
- **Strengthen Coordination:** All the programmes of the government having direct or indirect impact on the nutrition must be brought under the POSHAN Abhiyaan.
- **Nurture Community Approach:** Despite strong efforts, community involvement in POSHAN Abhiyaan has been substandard. State specific efforts should be made (keeping in view the diversity and intersectionality of the society) for ensuring community participation.

Conclusion

Nutrition goes beyond just food, with economic, health, water sanitation, gender perspectives and social norms contributing to better nutrition. This is why there is a **need to have a multipronged approach.** Such approach would not only eliminate the malnutrition but also **eradicates the underlying social, economical and political causes of malnutrition.**

7.4. SDG INVESTOR MAP FOR INDIA

Why in News?

The **United Nations Development Programme (UNDP) in partnership with Invest India** has developed the Sustainable Development Group (SDG) Investor Map for India.

More about News

- SDG Investor Map identifies Investment Opportunity Areas (IOAs), and White Spaces (Areas of Potential) **aimed at aiding India's journey at fulfilling the SDG.**
- 18 IOAs and 8 White Spaces are identified **across 6 Priority Sectors:**
  - o Education,
  - o Healthcare,
  - o Agriculture and Allied Services,
  - o Financial Services,
  - o Renewable Energy and Alternatives,
  - o Sustainable Environment.
- These sectors are identified on basis of **Enhanced productivity, technology adoption and increased inclusion.**
- **8 'white spaces' have seen investor interest and have the potential to grow** into IOAs in 5 to 6 years with policy support and private sector participation.
- The Map will help **public and private sector stake-holders direct capital towards these IOA's and White Spaces** that can contribute to the nationally determined sustainable development needs of the country.
- **The map also highlights SDG financing gap.** With the emergence of the Covid-19 pandemic, SDG financing gap has widened by an estimated $400 billion in developing countries, adding to the pre-COVID shortfall of $2-2.5 trillion per annum.
  - o The **financing gap for SDGs in India has widened** further and development progress made under **millennial development goals also are on verge of reversal.**
  - o Investing in the SDGs at this point is crucial to 'building back better' and making the economy and our societies more **resilient and sustainable**.

Invest India
- It is the **National Investment Promotion and Facilitation Agency of India** and acts as the first point of reference for investors in India.
- It is set up as **a nonprofit venture** under **the Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industries**.
- It provide **multiple forms of support such as market entry strategies, deep dive industry analysis,** etc.
- It is a **joint venture** company between DIPP (35% equity), Federation of Indian Chambers of Commerce and Industry (FICCI) (51% equity), and State Governments (0.5% each).

UNDP
- It is the UN's global development network **helping countries to achieve the eradication of poverty,** and the reduction of inequalities and exclusion.
- UNDP is **central to the United Nations Sustainable Development Group (UNSDG),** a network that unites the 40 UN funds, programmes, specialized agencies and other bodies working to advance the 2030 Agenda for Sustainable Development.

What are SDGs?
- They are a **collection of 17 interlinked goals designed** to be a "blueprint to achieve a better and more sustainable future for all".
- They were set in **2015 by the United Nations General Assembly** and are intended to be achieved by the year 2030.
- They are included in a UN Resolution called the 2030 Agenda or what is known as Agenda 2030.
- Countries are expected to take ownership and establish a national framework for achieving these Goals.

SDGs and India's commitments
- **SDG India Index**: NITI Aayog undertook extensive exercise of measuring India and its States' progress towards the SDGs for 2030, culminating in the development of the first SDG India Index - Baseline Report 2018.
- **Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA)** is being implemented to provide jobs to unskilled labourers and improve their living standards. (SDG1, SDG 8)
- **National Food Security Act** is being enforced to provide subsidized food grains. (SDG 2)

About SDG Financing

- SDG financing means **channelling global financial flows towards Sustainable Development** imperative to achieving the 2030 Agenda.
- **Addis Ababa Action Agenda 2015,** provides a global framework for financing sustainable development that aligns all financing flows and policies with economic, social and environmental priorities.
- **India occupies a key role in determining the success of the SDGs globally** and it needs $2.64 trillion investment to meet SDGs.
  - o **India needs to increase its SDG spending by an additional 6.2%** of its GDP until 2030. Hence, it is crucial to make sure that the budget allocations align with SDG priorities.
- **SDG financing Initiatives:**
  - o **SDG Financing Lab** is an OECD-led initiative that strives to inform decision-makers and policy leaders on how to ensure the resources needed to achieve the 2030 Agenda.
  - o **SDG Fund** is an international multi-donor and multi-agency development mechanism created in 2014 by the United Nations to support sustainable development activities through integrated and multidimensional joint programmes.
- However, despite growing momentum for sustainable development investments, **financing gaps remain large.**

Issues in SDG financing

- **Heightened geopolitical tensions around trade and technology**: In recent years, the world has witnessed a rise in unilateral actions, trade tensions and protectionist measures that largely circumvent multilateral processes.
- **Growing external debt amidst unresolved systemic issues**: Global debt levels have continued to set new records and grew to 247 trillion US dollars in July 2019, up from 168 trillion US dollars in 2008 at the start of financial crisis..
- **Unmet expectations about public-private collaboration for development finance:** In particular investments in LDCs have been insufficient to meet their SDG financing needs. Only 7% of 81 billion US dollars in private finance mobilized for development went to LDCs (2012-15).
- **Constraints to finance SDGs in India include**:
  - o Inefficiency of tax systems,
  - o Lack of incentives driving private sector participation,
  - o Lack of business models supporting SDGs.

> **Need for SDG financing**
> - **Increasing Environmental Shocks**: Greenhouse gas emissions continue to rise, posing risks to sustainable development.
> - **Growing Financial Risks**: Short-term financial market volatility has increased due to COVID-19. Prior to that, an extended period of low interest rates had incentivized riskier behaviour through- out the financial system. Financial intermediation has steadily migrated to non-bank financial intermediaries (who hold over 30 per cent of global financial assets).
> - **Declining Assistance**: Official development assistance (ODA) fell by 4.3% in 2018, and ODA to least developed countries (LDCs) fell by 2.1%.
> - **High Debt Risk**: Debt risks will likely rise further in the most vulnerable countries.
>   - o Governments of Low-Income Developing Countries (LIDCs) will require a substantial increase in fiscal (budget) revenues, far beyond what they can achieve by their own fiscal reforms.
>   - o For this reason, SDG financing will require substantial international cooperation to enable the LIDCs to finance their SDG fiscal outlays.

How to address SDG financing Gap?

- **Address trade issues:** To put trade back on track, there is need to put sustainable development at the heart of the multilateral trade regime, building on existing experience from the investment regime and regional trade agreements.
- **Deal rising debt vulnerabilities:** There is need to promote the UNCTAD Principles for Responsible Sovereign Lending and borrowing, explore Sovereign Debt Restructuring Mechanisms for countries in default, and create a well-endowed global climate disaster fund and decarburization bank.
- **Public-private collaboration for development finance:**
  - o There is n**eed for increased knowledge-sharing and evidence to improve blended finance practices** and to speed up documentation of the type of financing/ funding that is best suited by sector and type of country so as to ensure that the countries that need it the most are not completely left behind.

- o **Public sector role**: Remove inefficiencies in tax system, allocation of tax to implement SDGs, Augment new sources such as sovereign bonds for SDGs, reducing illicit financial flows, infrastructure finance and capital market development, Foreign Direct Investment promotion etc.
  - o **Private sector role**: Incentivize private sector investment, Crowd in private investment through innovative facilities and business models etc.
- **Maximize investment impact**: increasing the sustainable development benefits and minimizing the risks of investment in SDG sectors.
- **Channel investment**: promoting and facilitating investment into SDG sectors.

7.5. INTEGRATION OF TRADITIONAL MEDICINE AND TRADITIONAL MEDICINE

Why in news?

Recently, the Central Council of Indian Medicine amended Indian Medicine Central Council (Post Graduate Ayurveda Education) Regulations, 2016, to include the regulation to allow the Post Graduate (PG) students of Ayurveda to practise general surgery.

More about news

- According to CCIM's notification, **students will be trained in two streams of surgery** and would be awarded titles of MS (Ayurveda) Shalya Tantra — (General Surgery) and MS (Ayurveda) Shalakya Tantra (Disease of Eye, Ear, Nose, Throat, Head and Oro-Dentistry).
  - o CCIM is the statutory body that regulates the Indian Medical systems of Ayurveda, Siddha, Sowa-Rigpa and Unani Medicine.
- However**, Indian Medical Association (IMA) has been opposing the move** to allow traditional systems of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy (AYUSH) to offer allopathic therapies and treatment.

Integration of traditional medicine/AYUSH with modern medicine

- After the introduction of modern medicine in India, **traditional medicine/AYUSH was usually rejected by the formal medical service system.**
- Recently, however, **attitudes towards traditional medicine have changed**. Many traditional remedies and therapies have transcended their original culture and become "complementary/ alternative" medicine in other countries.
- **Three different approaches for integration**
  - o **Incorporation of traditional medicine into the general health service system**: The government recognizes the practice of traditional medicine and the use of traditional medicine is incorporated into the mainstream of health service system.

> **Traditional medicine & Allopathy**
> - **Traditional medicine:** It refers to health practices, approaches, knowledge and beliefs incorporating plant, spiritual therapies,etc to treat, diagnose and prevent illnesses or maintain well-being.
>   - o It composes of **Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy** (AYUSH).
> - **Allopathy**: It is a system in which medical doctors and other healthcare professionals (such as nurses, pharmacists, and therapists) treat symptoms and diseases using drugs, radiation, or surgery.

  - o **Integration of the practice of traditional medicine with that of modern medicine:** In fact, many medical doctors who have adequate knowledge of traditional medicine have tried to incorporate remedies used by traditional medicine into their daily work.
    - ✓ In some places, traditional and modern medicine are **practised side by side.**
  - o **Synthesis of two branches**: Efforts have been made to synthesize the two branches, in order to form a new branch of medical science, incorporating elements of both.
- In keeping with the recommendations of the **Report of the Committee on Indigenous Systems of Medicine (Chopra Committee) 1948**, baby steps were taken to integrate the teaching of traditional and modern systems of medicines, however proposals were later scrapped.
- Traditional Medicine and Allopathy despite being based on different principles and methodologies **can complements each other.**

What is the need of integrating AYUSH with Allopathy?

- **Better disease management:** Traditional Medicine play vital role in preventive care and AYUSH doctors could be roped in for providing services that does not need specialization in Allopathy.
    - o **COVID-19 management in Osmanbad, Maharashtra:** The few Allopathy doctors were given the responsibility to take care the Critical Care Unit (CCU) of the COVID-19 wards. AYUSH doctors and nurses were trained to take care of the general wards. This management along with other efforts effectively reduced the COVID-19 fatality in the district.
- **Enhancing the accessibility to public health facilities:** Despite 71% of the country being predominantly rural, the proportion of Allopathy doctors in rural areas is only 34%.
    - o Proportion of AYUSH doctors in some of the poorest part of the country is high**.**
    - o Dovetailing traditional and modern health services system would enhance the accessibility of the health care facilities by **doing away with the geographical disparities.**
- **Recognition and regulation of invisible AYUSH doctors:** In many hospitals (particularly at Primary Health Centre) AYUSH doctors provide the health care services but data is reported under the name of an Allopathy doctor "for legal reasons."
    - o Such '**invisibilisation' of the significant contribution of traditional** health service providers is unethical. It is also a hurdle in effective regulating of the quality of public health services.
- **Necessary for universal healthcare:** In India, the ratio of the doctor-patient is 1:1456 if we consider only allopathic doctors; the ratio will come to 1:800 if the AYUSH practitioners are added. This is much better than the WHO recommendation of 1:1000. Thus leveraging AYUSH doctors is vital for achieving universal health care services.

What are the challenges in integrating AYUSH with Allopathy?

- **Effectiveness of Traditional Medicine:** The practice of traditional medicine is mainly based on conventional use and personal experience. The value of traditional medicine (as well as many modern medical treatments) has not been fully tested by using modern scientific means.
    - o Whereas allopathic system addresses symptoms and treatment of causes of illnesses based on a biomedical model understood with the help of epidemiological investigations.
- **Skewed financing:** In Budget 2020-21, Ministry of Health and Family Welfare was allocated ₹ 69, 000 crore whereas Ministry of AYUSH was allocated only ₹ 2,122.08 crore. Such skewed financing would naturally create a gap between AYSH and Allopathy in terms of research, education, training etc.
- **Low acceptance of AYUSH:** National Sample Survey in 2014 indicates that only 6.9% of patients seeking outpatient care opted for AYUSH. In the case of hospitalised care, the proportion is less than 1%.
    - o Standardization, poor quality control procedure, lack of regulation and lack of Good Manufacturing Practices (GMP) of Traditional medicine add to woes in integration.
- **State subject:** Health being a state subject adds an extra layer of complexity to any national level initiative. There are states like Maharashtra who have adopted a realistic approach where AYUSH doctors are allowed to practice Allopathy and prescribe drugs, after completing a one-year course. However, such vital steps are missing in other states.
- **Infrastructure related issue:** Lack of processing technique, trained personal, sophisticated instrument, utilization of modern techniques, facility to fabricate instrument locally are the major problems.

Way ahead

- **Integrated policy:** There is need for proper policy to integrate both Traditional Medicine and Allopathy along with inter-ministerial coordinated efforts by the MoHFW & Ministry of AYUSH.
    - o **Clearly defined role for the AYUSH doctors and Allopathy doctors** with respect to the treatment of patients, their mutual interactions, and community accountability mechanisms is important.
- **Bridging the financing gap:** Equal emphasis should be given to both AYUSH as well as Allopathy system. Public Private Partnership (PPP) could also be utilised to ensuring adequate funding of both the system.
- **Mutual respect and trust:** The need for mutual respect between the allopathic and AYUSH practitioners is paramount. Unless they respect each other's system of practice and work as a team, there is a likelihood of the system becoming competitive and counterproductive.

- **Facilitate cross-learning and collaboration:** True integration would require the integration of education, research, and practice of both systems at all levels. This is the only way to address the subservient status of AYUSH and to foster its legitimate inclusion into mainstream health care.
  - The **Chinese experience of integrating Traditional Chinese Medicine** with Western medicine makes for a good example.

Conclusion

An integrated framework should create a middle path fusing the two systems, while still permitting some autonomy for each. Accordingly, a medium- and long-term plan for seamless integration should be developed expeditiously in view of the massive drive for achieving universal health care already under way in the country.

Case study

China's health policy

- It has been unique in the developing world as it tried to organise its **health system around four basic principles in delivering health care services** to its people:
  - Put prevention first
  - **Combine western and traditional medicine**
  - Combine health with mass movements
  - Concentrate on rural areas
- The traditional physicians served as a **complement to physicians trained in modern medicine**.
- Along with **separate hospitals and clinics for traditional medicines special wards** within existing facilities were created, which helped increase health care utilisation.
- It was driven by the **national planning need to provide comprehensive healthcare services** to the general population.
- They followed a **science-based approach to the education of traditional Chinese medicine**, placing an emphasis on research.

NEWS TODAY

✍ Daily Current Affairs news bulletin covered in 2 pages.

✍ Primary sources of news: The Hindu, Indian Express and PIB. Other sources includes News on AIR, the Mint, Economic Times etc.

✍ Focus is to provide the primary level of information to get an idea of the different things that are going around

✍ Two types of approaches followed:

  ❯ Primary News of the Day: – Covers main news items of the day in less than 180 words.

  ❯ Also in News:– These are basically one-liners appearing in news. The word limit here will be 80 words.

✍ Available in English & Hindi. Hindi Audio available at VisionIAS Hindi YouTube channel

8. CULTURE

8.1. ALL INDIA TRADE UNION CONGRESS

Why in News?

Recently, All India Trade Union Congress (AITUC) turned 100.

About AITUC

- AITUC was **formed in 1920 by leaders like Bal Gangadhar Tilak, Lala Lajpat Rai**, Narayan Malhar Joshi, Joseph Baptista, Diwan Chaman Lall etc. to provide labour representation for India at the International Labor Organization (ILO).
- **Lala Lajpat Rai was elected as the first president** of AITUC and Dewan Chaman Lal as the first general secretary.
  - C.R. Das, Jawaharlal Nehru, Subhash Chandra Bose also served as AITUC presidents.

> **Other trade unions/ labour unions during freedom struggle**
> - **Bombay Mill hands' Association was formed in 1890** under N.M. Lokhande was one of the first workers' organisations.
> - First registered organised Trade Union in India "**Madras Labour Union**" by B. P. Wadia was formed in 1918
> - In 1920, **Ahmedabad Textile Labour Association** was founded by Anusuyaben Sarabhai who was a pioneer of the women's labour movement in India.
> - **Other workers associations during the period are:** Amalgamated Society of Railway Servants of India and Burma (1897), Management the Printers Union, Calcutta (1905) and the Bombay Postal Union (1907), the Kamgar Hitavardhak Sabha (1910) and the Social Service League (1910).

- **Gaya session of the Congress (1922) welcomed formation of the AITUC** and a committee was formed to assist it.
- Later, AITUC was split to form National Trade Union Federation (NTUF) in 1929 and Red Trade Union Congress (RTUC) in 1931.
- In the aftermath of Second World War, AITUC played significant role in the foundation of World Federation of Trade Unions (international federation of trade unions).

Factors that led to formation of Trade Unions

- **Influenced by world labour movements:** Russian Revolution in 1917 was a great impetus for Indian labour movement as the working class along with peasantry captured power first time.
- **Industrial unrest:** Strikes in Bombay against extension of working hours and protest against imprisonment of Tilak etc. led to working class to wage a mass struggle.
- **Oppression and exploitation under British rule**: The self-sufficient Village economy was shattered with no new structures in place, creating impoverished peasantry and landless labour force.
- **National freedom movement:** In the beginning of 20th century, participation of laborers in the freedom movement increased and formation of unions also increased. Mahatma Gandhi linked the freedom movement directly with the labor welfare.

9. ETHICS

9.1. NUDGING

Introduction

Decisions made by real people often deviate from the standard template of the rational human being. This has generated the need for newer strategies to predict and mold behavior. Drawing on the psychology of human behavior, behavioral economics and social psychology the idea of 'nudge' can be used to encourage people towards desirable behavior.

What is Nudging?

Nudging can defined as a "a set of actions" which are used change people's behavior without affecting their independence or significantly changing the available economic incentives. For example, the Indian Government nudged consumers to forgo the LPG subsidy when the campaign was changed from "give it up" to ''think about the subsidy'. This nudged indirectly encouraged people to think and tapped their emotional side without changing the economic incentive.

Recently, the nudge based behavioral change has been getting global acceptance. For instance, Economic Survey 2018-19 also talked about nudging as an economic policy tool. Following can cited as reasons why Nudge theory is gaining this popularity:

- **Looks beyond the cognitive boundaries, biases or habits:** Most of the behavioral change ideas are based on assumptions regarding human behavior and are structurally incapable of incorporating habits, biases or cognitive boundaries. Nudge theory on the other hand integrates insights from these issues by engaging with behavior at microeconomic level.
- **Soft nature of intervention:** Every human being has a natural **psychological reluctance**. As a result, hard interventions like prohibitions, bans etc. are most times immediately followed by non-compliance. Nudge interventions on the other hand maintain the freedom of choice and hence have higher acceptability. Nudges work on tendencies rather than radical change.

> **Types of Nudges**
> - **Provision of information.** E.g. -Energy labels on housing, household appliances and products, Social media campaigns etc.
> - **Changes in the physical environment.** E.g.- Reducing the plate size can reduce the portions that a person eats.
> - **Changes in the default options.** E.g.- Change in default temperature in offices to optimize electricity usage.
> - **Use of social norms and regular feedback.** E.g.- Feedback mechanisms for energy and water wastage for industries.

How can Nudge practice be used to encourage more desirable behavior?

- **Encourage 'collective good' over 'individual choice':** For people to sacrifice their individual choice, it becomes important for them to believe that their act can create a difference. This belief can be nudged by changing cultural norms or providing them regular encouragement. For example, Swacch Bharat Campaign has increased the cultural threshold for cleanliness which encourages people to refrain from littering.
- **Making 'desirable action' easy:** If desirable options are easy to comply, they tend to drastically increase the desirable behavior. For example, making organ donation in case of a fatal accident an auto-enrollment or opt-out rather than an opt-in policy, would lead to an immediate spike in the rates of organ donation as has been seen in several countries.
- **Altering the cultural pre-occupation:** Many times, the traditional or cultural practices are not in line with the desirable behavior, which creates friction. For example, the Air pollution and bursting crackers in Diwali issue in NCT Delhi. Here **nudging the cultural ideal towards environmentally friendly choices** like green crackers could be a viable policy intervention.
- **Providing real and immediate incentives:** Providing immediate incentives conditions the desirable outcome as rewarding and thus changing behavior in the long run.
- **Countering the lack of information and misinformation:** In the era of post-truth, many decisions are guided by misinformation and the circulating fake news. For example, misinformation about the efficacy of the COVID-19 vaccine. Regular nudges in the form of advertisements, encouragement by doctors can help counter this misinformation and increase the acceptance for vaccines.
- **Implementing tough and inconvenient solutions:** The initiatives taken during the COVID-19 pandemic would have been impossible, since the citizens had to sacrifice their freedom without any immediate incentive. But

the nudges in the form of addresses by the PM and the cultural context created by the authorities encouraged people to behave in desirable manner.

Is nudging public behavior ethical?

Nudging operates at a psychological level altering behavior, choices and actions. The fact that the citizens are not outrightly aware of the intervention happening on them creates certain ethical issues:

- **Limited real autonomy:** Some experts argue that nudging interferes in decisions made by the stakeholder without consciously informing them thus creating a scenario where nudging entity could force the nudged entity towards a certain outcome. For example, the government should not impose their goals and values on citizens, in societies where individuals hold very different conceptions of what is good.
- **Potential manipulation of citizens:** The sense of manipulation depends on the methodology followed for Nudging. For example, opting for opaque methods of nudging which are personally motivated could be termed as manipulation. For example, private players nudging consumers to buy their product to generate profits can be termed manipulation.
- **Shifting burden to citizens:** Several experts have alleged that moving towards a Nudge based policy regime would lead to shifting of accountability from actions of government to behavior of citizens. For example, if a nudge-based policy doesn't generate the desired outcomes, it could be argued that the reason is public behavior and not poor governmental efficacy.

Although, these apprehensions have a real possibility to get manifested, efforts could be taken to overcome these issues.

How can nudge behavior be used both ethically and effectively?

- **Increasing awareness with regard to the concept of Nudge:** Keeping entities actively informed regarding the policies being undertaken by the Government increases transparency in the policymaking on one hand and simultaneously gives entities an opportunity to make an informed choice on their decisions. Thus, allaying the fears related to real autonomy and manipulation.
- **Scientific basis for creating policy structure:** Scientific evaluations should be made to decide which areas are suitable for nudge-based interventions and also which type of nudge would be most suited for the situation.
- **Working on case-to-case basis:** Similar nudge policies generate different response in different people and different situations. For example, cash incentive may help increase the participation in vaccine drives in some areas and may not help in some areas. Consequently, every case and every region has to be dealt individually.

10. SCHEMES IN NEWS

10.1. PRADHAN MANTRI KISAN URJA SURAKSHA EVAM UTTHAAN MAHABHIYAN (PM-KUSUM) SCHEME

Why in News?

Ministry of New and Renewable Energy (MNRE) has expanded the scope of PM-KUSUM scheme to enable greater solar energy generation in farm sector.

Objective	Features

To provide financial and water security to farmers. Budget 2020-21 has sought to expand the coverage:
• Scheme to enable farmers to set up **solar power generation capacity on their fallow/barren lands and to sell it to the grid.**
• 20 lakh farmers to be provided for **setting up stand-alone solar pumps**
• Another 15 lakh farmers to be **helped to solarise their grid-connected pump sets**
Central Financial Assistance (CFA)/ State Government Support:
• **Component A:** Procurement Based Incentive (PBI) @ 40 paise/kWh or Rs. 6.60 lakhs/MW/year, whichever is less, will be provided for the first five years by MNRE to DISCOMs, for buying the power from farmers/developers.
• **Component B & C: CFA of 30% of the benchmark cost or the tender cost**, whichever is lower. **State Government subsidy 30%; Remaining 40% by the farmer.**
   ○ In North Eastern States, Sikkim, J&K, Himachal, Uttarakhand, Lakshadweep and A&N Islands, **CFA of 50%, State Government subsidy 30%, Remaining 20% by the farmer.**
	• It aims to add a solar capacity of 25,750 MW by 2022. The proposed scheme consists of three components:
	  ○ **Component-A:** 10,000 MW of Decentralized Ground Mounted Grid Connected Renewable Power Plants.
	    ✓ Renewable power plants of **capacity 500 KW to 2 MW will be setup** by individual farmers/ cooperatives/panchayats /farmer producer organisations (FPO) **on their barren or cultivable lands (now on pastureland and marshy land of farmers also)** referred as Renewable Power Generator (RPG).
	      ▪ To support small farmers, the **solar power projects smaller than 500 kW may be allowed** by States based on techno-commercial feasibility.
	      ▪ There shall be **no penalty to RPG for shortfall in solar power generation from minimum prescribed Capacity Utilization Factor (CUF).**
	    ✓ The power generated will be purchased by the DISCOMs at Feed in tariffs determined by respective SERC.
	  ○ **Component-B:** Installation of standalone Solar Powered Agriculture Pumps.
	    ✓ Individual farmers will be supported to install standalone solar pumps of capacity up to 7.5 Horsepower (HP).
	      ▪ For solar pumps to be set up and used by Water User Associations (WUA)/Farmer Producer Organisations (FPO)/Primary Agriculture Credit Societies (PACS) or for cluster-based irrigation system, the **Central Financial Assistance (CFA)** will be allowed for solar pump capacity of higher than 7.5 HP considering upto 5 HP capacity for each individual in the group.
	    ✓ It will be mandatory to use indigenously manufactured solar panels with indigenous solar cells and modules.
	      ▪ To **remove delay in installation services**, ministry has allowed **joint venture of manufacturer of solar pump/solar panel/solar pump controller with integrators**.
	    ✓ Centre and state to share 30 per cent of pump cost each; farmer to provide the remaining 40 per cent (can access bank loan for up to 30 per cent of the cost)
	  ○ **Component-C:** Solarisation of Grid-connected Solar Powered Agriculture Pumps.
	    ✓ Individual farmers will be supported to solarise pumps of capacity up to 7.5 HP.
	    ✓ Solar PV capacity up to 2 times of pump capacity in kW is allowed under the scheme.
	    ✓ The farmer will be able to use the generated energy to meet the irrigation needs and the excess available energy will be sold to DISCOM.
	    ✓ Solarisation of total 4 lakh grid connected pumps are targeted for sanction by 2020-21 and **50% of these are to be solarised through feeder level solarisation and balance 50% through individual pump solarisation**.
	• Discom or power department will be the implementing agency for feeder-level solarisation in their respective areas.
	• This feeder-level solarisation would ensure economies of scale and better efficiency.

11. NEWS IN SHORTS

11.1. ELECTION COMMISSION OF INDIA (ECI) REMOVED CONGRESS LEADER KAMAL NATH FROM THE PARTY'S LIST OF STAR CAMPAIGNERS.

- It was revoked for **repeatedly violating Model Code Of Conduct (MCC)** ahead of by-polls in Madhya Pradesh. According to manual to the MCC, **ECI can issue instructions to track campaigns of star campaigners**.
- Star campaigners are **nominated by political parties to campaign** in a given set of constituencies.
  - o List of star campaigners must be **communicated to Chief Electoral Officer and ECI within a week** from the election notification date as required under section 77(1) of Representation of the People Act (RPA), 1951.
  - o A **recognised political party can have 40 Star campaigners** and an unrecognised (but registered) political party can have 20.
- Expenditure incurred on campaigning by such notified star campaigners is **exempt from being added to the election expenditure of a candidate.**
  - o However, this only applies when a star campaigner limits herself to a general campaign for the political party she represents.
  - o **If a candidate or her election agent shares stage with a star campaigner** at a rally, then the **entire expenditure on that rally,** other than the travel expenses of star campaigner, is **added to candidate's expenses.**

RECENTLY, ECI HAS REVISED NORMS OF STAR CAMPAIGNERS FOR ELECTIONS AMID COVID-19 PANDEMIC.
- Maximum limit of star campaigners:
  - For **recognized national/state political parties shall be 30** instead of 40
  - For **unrecognized registered political parties shall be 15** instead of 20
- Period of submission of list of star campaigners has also been **extended from 7 days to 10 days** from the date of notification.

11.2. PAKISTAN GRANTS PROVISIONAL PROVINCIAL STATUS TO GILGIT-BALTISTAN (GB)

- Pakistan announced to elevate GB to the status of a full-fledged province with all constitutional rights.
  - o GB was a **part of erstwhile princely state of Jammu and Kashmir**, but has been under Pakistan's control since November 4, 1947, following invasion of Kashmir by tribal militias and Pakistan army.

- o In 2018, GB order was passed which aimed at **incorporating GB as its fifth province** and to integrate GB with rest of federal structure of Pakistan by legislative, judicial and administrative measures.
    - ✓ Since 1949, it has been put under direct control of Pakistan federal government.
  - o **Baluchistan, Khyber-Pakhtunkhwa, Punjab and Sindh being other four provinces** of Pakistan.
- India has clearly conveyed to Pakistan that **entire UT of Jammu and Kashmir and Ladakh, including areas of G-B, are integral part of India and asked Pakistan to immediately vacate from the Indian territory of Gilgit-Baltistan.**
- **Significance of GB**
  - o GB lies at **intersection of Indian Subcontinent, Central Asia and China**.
  - o **China–Pakistan Economic Corridor** is passing through GB
  - o Important glaciers **like Siachen Glacier are located in GB. Hydro-electric potential of Indus River** makes it vital for energy security as well.

11.3. FRAMEWORK ARRANGEMENT ON CYBER AND CYBER-ENABLED CRITICAL TECHNOLOGIES COOPERATION

- This arrangement was signed **between India and Australia** during Bengaluru Tech Summit.
- Under this four-year agreement, Australia and India will work together for **open, free, safe, and secure Internet.**
  - o It includes a corpus of $12.7 million t**o fund research and development for Indian and Australian businesses and researchers** that will help both countries improve their cyber resilience.
  - o It will lay foundation **for digital economies to work.**

- o It will **include artificial intelligence (AI), quantum computing, robotics** etc.
- During the summit, 25 countries came under a single group called the '**Global Innovation Alliance' (GIA)** online to attend and discuss key challenges emerging in the post-pandemic world with focus on the impact of prominent technologies.
  - o GIA is an initiative of Government of **Karnataka's Department of Electronics, Information Technology, Biotechnology and Science & Technology.**
  - o Objective is to **develop relationships in innovation, science and technolog**y with various countries for achieving leadership in Global & Domestic markets.
- An Indian Innovation Alliance has also been formed to **enhance the innovation and technology competitiveness of Indian leading States,** Industry and institutions through joint development, technology transfer and joint ventures.
  - o Further, it provides a **platform to showcase progressive and industry friendly policies** and latest innovations in technology to bridge existing gap and improve overall Innovation ecosystem.

11.4. MOTOR VEHICLE AGGREGATOR GUIDELINES ISSUED

- Recently, The Ministry of Road Transport and Highways has issued the Motor Vehicle Aggregator Guidelines 2020
  - o **Aggregator refers to a digital intermediary** or market place for a passenger to connect with a driver for the purpose of transportation. Ola Cabs, Meru and Uber are some of the popular cab aggregators in India.
- **Objectives of issuing these guidelines are:**
  - o **Regulating shared mobility** and reducing traffic congestion and pollution,
  - o To **provide ease of doing business**, customer safety and driver welfare
- **Guidelines provide for**
  - o **License issued by the State Government is a mandatory requisite** for permitting business operations by the aggregator.
  - o For regulating the aggregators, the guidelines specified by the Central Government may be followed by State Governments
  - o Guidelines seek **to establish a regulatory framework for aggregators by State Governments** to ensure that the aggregators are accountable and responsible for the operations executed by them.
- Proposed Guidelines is **to ensure regulation of aggregators**, compliances with regard to Aggregator App and Website, manner of fare regulation, drivers' welfare, service to citizens parameters and ensuring safety etc.

11.5. BRAHMOS SUPERSONIC CRUISE MISSILE

- India successfully test-fired **land-attack version of BrahMos supersonic cruise missile** in the Andaman and Nicobar.
- The range of the **new land-attack version has been extended to 400 km from 290 km** but and speed has been maintained at 2.8 Mach (three times the speed of sound).
- BrahMos Aerospace, is an **India-Russian joint venture** to produce lethal weapons that can be launched from submarines, ships, aircraft and land platforms.
- **Naval version of the BrahMos missile** was successfully test fired from INS Ranvijay, Rajput-class destroyer warship in the Bay of Bengal.
- As well the **air-launched version of BrahMos missile** successfully test fired from Sukhoi jet in the Bay of Bengal.

11.6. QUICK REACTION SURFACE-TO-AIR MISSILE (QRSAM) SYSTEM

- DRDO successfully test-fired QRSAM from the Integrated Test Range at Chandipur, off Odisha coast.
- QRSAM is **a short-range surface-to-air missile system,** indigenously designed and developed.
- It provides a protective shield to moving armoured columns of the Army from enemy aerial attacks. **It has a range of 25 to 30 km.**

11.7. SCORPENE CLASS SUBMARINE VAGIR

- It is the **fifth among the six Kalvari-class submarines** being constructed by Mazagon Dock Ltd.
  - o **Other vessels in the class are** INS Kalvari, INS Khanderi, INS Karanj, INS Vela and INS Vagsheer (under construction).
- Design of Kalvari class of submarines is **based on Scorpene class of submarines with technology transfer from France.**
- These submarines have **capability of operating in a wide range of Naval combat** including anti-warship and anti-submarine operations, intelligence gathering and surveillance and naval mine laying.

11.8. MILITARY EXERCISES

- **SIMBEX-20:** It is a bilateral maritime exercise between **Indian Navy and Republic of Singapore Navy.**

- **SITMEX-20:** It is a trilateral maritime exercise between **Indian Navy, Republic of Singapore Navy and Royal Thai Navy.**

11.9. TX2 TIGER CONSERVATION AWARDS (TTCA) GIVEN

- TX2 is the global award which was set up in 2010 in **St. Petersburg Tiger Summit by international organizations working for tiger conservation like** WWF, UNDP, IUCN, Global Tiger Fund, CATS and The Lion's Share.
  - TX2 stands for "Tigers times two", **signaling the goal set by 13 tiger range countries to double population of wild tigers by 2022.**
- TTCA are given in two categories:
  - **Tiger Conservation Excellence Award: Transboundary Manas Conservation Area (TraMCA)** comprising Manas National Park in Assam and Royal Manas National Park in Bhutan won this award.
    - ✓ Award recognises a site that has **achieved excellence in two or more of five themes:**
      - Tiger and prey population monitoring and research;
      - effective site management;
      - enhanced law enforcement and protection;
      - community-based conservation,
      - habitat and prey management.
  - **TX2 Award:** This award is given for efforts to increase tiger population and includes a financial grant to assist ongoing conservation.
    - ✓ **Pilibhit Tiger Reserve (PTR)** in Uttar Pradesh won this award for doubling its population.
      - PTR is important for connectivity across the vast **Terai Arc Landscape of India and Nepal.**
      - Its southern boundary is marked by the **river Sharada and Khakra.**

13 TIGER RANGE COUNTRIES
1. Bangladesh
2. Bhutan
3. Cambodia (locally extinct)
4. China
5. India
6. Indonesia
7. Lao PDR (locally extinct),
8. Malaysia,
9. Myanmar
10. Nepal
11. Russia
12. Thailand
13. Vietnam (locally extinct)

11.10. MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE (MOEFCC) LAUNCHED VULTURE ACTION PLAN 2020-25

- While MoEFCC has been carrying out a conservation project for vultures since 2006, new plan now extend the project to 2025 **to not just halt the decline but to actively increase the vulture numbers.**
- **Key Highlights of the plan**
  - **Additional vulture conservation and breeding centre** each at UP, Tripura, Maharashtra, Karnataka and Tamil Nadu.
  - **Establishment of four rescue centres** in Pinjore, Bhopal, Guwahati and Hyderabad and at least one Vulture Safe Zone in every State.
  - **Conservation breeding programme** for Red Headed vulture and Egyptian vulture.
  - **Regulate the sale of veterinary non-steroidal anti-inflammatory drugs (NSAIDs)** that lead to death of vultures.
    - ✓ **A system to automatically remove a drug from veterinary use**, such as **Diclofenac** (a drug used to treat cattle).
  - **Database** on emerging threats to vulture conservation.
  - **Nationwide Vulture Survey** once in 4 years.
- **Threats to Vulture include** collision and electrocution, unintentional poisoning, etc.
  - **Between 1990s and 2007, numbers of three critically-endangered species** – Oriental white-backed, long-billed and slender-billed vultures — **declined by 99%.**

Vulture species in India	
Vulture	IUCN Status
Oriental white-backed Vulture	Critically-endangered
Long-billed Vulture	Critically-endangered
Slender-billed Vulture	Critically-endangered
Red-headed Vulture	Critically-endangered
Egyptian Vulture	Endangered
Himalayan Vulture	Near threatened
Bearded Vulture	Near threatened
Cinereous Vulture	Near threatened
Eurasian Griffon Vulture	Least Concern

11.11. STATE OF FOOD AND AGRICULTURE 2020 REPORT RELEASED BY FOOD AND AGRICULTURE ORGANIZATION (FAO)

- FAO's report presents **new estimates on the pervasiveness of water scarcity** in agriculture and on the number of people affected.

- **Key highlights of report**
  - **Achieving Sustainable Development Goal (SDG) pledges**, including the zero hunger, is still achievable, but onlyby ensuring more productive and sustainable use of freshwater and rainwater in agriculture.
  - **Agriculture accounts for 70%** of the world's freshwater withdrawals.
    About 11% of rain-fed cropland and 14% of pastureland experienced severe recurring droughts, while more than 60% of irrigated cropland was highly water-stressed.
  - **Available freshwater resources have declined globally by more than 20% per person** over the past two decades.
    - ✓ About **1.2 billion people globally experienced very high levels of water stress.**
    - ✓ **Population growth** is a key driver of water scarcity and socio-economic development contributed to shifting diets towards more water-intensive foods.
- **Suggestions**
  - **Water accounting and auditing** should be the basis for any effective strategy for addressing water shortages and scarcity
  - **Agriculture:** Following water management practices should be combined with the best agronomic practices (sustainable agriculture)
    - ✓ **Rainfed areas:** Invest in water-harvesting and conservation
    - ✓ **Irrigated areas:** Rehabilitating and modernising sustainable irrigation systems

11.12. WORLD WIDE FUND (WWF) WATER RISK FILTER

- **Recently,** according to **the WWF Water Risk filter report** about 30 Indian cities will face increasing "water risks" in the next few decades.
  - "Water risk" refers to the possibility of an entity experiencing a water-related challenge (e.g., water scarcity, water stress, flooding, infrastructure decay, drought).
- According to the scenarios in **the WWF Water Risk Filter, 100 cities in world that are expected to suffer the biggest rise in water risk by 2050 are home to 350 million people.**
  - Globally, populations in areas of high-water risk could rise from 17% in 2020 to 51% by 2050.
- Cities across India have been facing **acute shortage of water due to rapid urbanization, climate change and lack of appropriate infrastructure,** which continues to put stress on the existing infrastructure.

- **Suggestions**
  - Cities needed to invest more in **nature-based solutions** including restoring degraded watersheds, reconnecting rivers to their floodplains, and restoring or creating urban wetlands.
  - **Multi-stakeholder engagements and ownership involving local communities** will be key to creating and conserving sustainable water infrastructure and rejuvenating urban freshwater systems.
  - **Urban planning and wetland conservation need to be integrated** to ensure zero loss of freshwater systems in urban areas.
  - Cities needed to **support greater global efforts to mitigate greenhouse gas emissions** to avoid reaching these scenarios
  - To manage these initiatives, **a public funding pool needed to be created in collaboration with the private sector to invest,** reduce risk and generate returns and fuel sustainable economic growth.

WWF Water Risk Filter
- It is a **practical online tool** that enables companies and investors to **explore, assess, value and respond to water risks** worldwide.
- It has been developed by **WWF** and the **German finance institution DEG**.
- It helps in **risk assessment** that can help **evaluate and inform long-term resilience planning and strategy**.

11.13. LUHRI STAGE-1 HYDRO POWER PROJECT

- The Cabinet Committee on Economic Affairs chaired by Prime Minister has approved 210 MW **Luhri Stage-I Hydro Electric Project located on River Satluj which is situated in Shimla and Kullu districts of Himachal Pradesh.**
- This project is being implemented by **Satluj Jal Vidyut Nigam Limited (SJVNL) on Build-Own-Operate-Maintain (BOOM) basis** with active support from Government of India and State Government.

11.14. FOUR MORE BIODIVERSITY HERITAGE SITES (BHS)FOR KARNATAKA

- Karnataka Biodiversity Board has decided to declare following sites as BHS:
  - Antaragange Betta in Kolar;
  - Aadi Narayana Swamy Betta in Chickballapur;
  - Mahima Ranga Betta in Nelamangala, Bengaluru;
  - Urumbi area on the Kumaradhara river basin in Dakshina Kannada.

- **BHS** are well defined areas that are unique, ecologically fragile ecosystems – terrestrial, coastal and inland waters and, marine.
- **Under Biological Diversity Act, 2002,** the State Government in consultation with local bodies can notify BHS.

11.15. INDIA CLIMATE CHANGE KNOWLEDGE PORTAL

- Portal was recently launched by **Ministry of Environment, Forest and Climate Change**.
- It will be a **single point Information resource on different climate initiatives taken by various Line Ministries**.
- It will help in **disseminating knowledge among citizens about all the major steps Government is taking** at both national and international levels **to address climate change issues.**
- **Major components of portal:** India's Climate Profile, National Policy Framework, Bilateral and Multilateral Cooperation, International Climate Negotiations etc.

11.16. COUNTRY'S FIRST CONVERGENCE PROJECT

- **Energy Efficiency Services Limited (EESL), and Department of New & Renewable Energy (DNRE), Goa**, have signed MOU to implement India's first Convergence Project in the Goa.
- Under convergence initiative, aim is to **connect seemingly independent sectors like Solar Energy, Energy Storage and LED lights** to provide solutions, which can enable in decarbonisation and affordable energy access.
  - Ex. decentralized ground mounted Solar Power projects for agricultural pumping, BEE star rated energy efficient pumps, Distributing of LED bulbs for rural domestic households.

11.17. EARTH OBSERVATION SATELLITE (EOS-01)

- **Recently,** Polar Satellite Launch Vehicle, in its fifty first flight (PSLV-C49), **successfully launched EOS-01 along with nine international customer satellites** from the First Launch Pad of Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota.
  - The nine customer satellites from Lithuania (1), Luxembourg (4) and USA (4).
- EOS-01 is another **Radar Imaging Satellite (RISAT)** that will work together with **RISAT-2B** and **RISAT-2BR1** launched last year.
- With EOS-01, **ISRO is moving to a new nomenclature** for its **earth observation satellites** according to the **purpose they are meant for**. They were **named thematically till now.**

- Cartosat series of satellites were meant to **provide data for land topography and mapping**
- Oceansat satellites were meant **for observations over sea**.
- Some **INSAT-series, Resourcesat series, GISAT, Scatsat** are all earth observation satellites, named differently for the specific jobs or the different instruments that they use.
- EOS01 uses **synthetic aperture radars** to **produce high-resolution images of the land**.
  - Advantage of radar imaging over optical instruments is that it is unaffected by weather, cloud or fog, or the lack of sunlight. It can produce high-quality images in all conditions and at all times.
- **Applications of Earth Observation Satellites**
  - **Land and forest mapping** and monitoring.
  - **Mapping of resources** like water/minerals/fishes.
  - **Weather** and **climate observations.**
  - **Soil assessment.**
  - **Geospatial contour mapping.**
- The radar images are also considered to be **immensely useful for military requirements**.

New PSLV designed for EOS-01
- ISRO used a new variant of its PSLV rocket that has been **flown only once before**.
- This variant of PSLV **does not become waste after depositing its satellite** in the orbit.
- Instead, the last stage of the rocket **which remains after the satellite is separated, can acquire its own orbit** and be used as **an orbital platform** for **other on-board instruments to perform experiments**.

11.18. STARLINK

- **Starlink** is a **network of satellites** being built by **SpaceX**, an aerospace company.
- It will deliver **high speed broadband internet** to locations where a**ccess has been unreliable, expensive, or completely unavailable**.
- The satellite network **operates at 550km above the Earth's surface in low Earth orbit (LEO)**, unlike conventional internet satellites that are positioned much higher, at over 35,000km.
- At end of life, the **satellites will utilize their on-board propulsion system to deorbit** over the course of a few months.
  - In the unlikely event the propulsion system becomes inoperable, the satellites will burn up in Earth's atmosphere within 1-5 years, significantly less than the hundreds or thousands of years required at higher altitudes.

11.19. DISCOVERY OF PULSARS

- Recently, The Royal Society unveiled a new portrait of **astrophysicist Dame Jocelyn Bell Burnell, who is credited with discovering pulsars in 1967.**
- Discovery was **recognised by a Nobel Prize in physics in 1974** that was shared by two professors, Antony Hewish (Burnell's supervisor) and Martin Ryle.
- Pulsars belong to a family of objects called neutron stars that form when a star more massive than the sun runs out of fuel in its core and collapses in on itself.
  - This stellar death typically creates a massive explosion called a supernova. The neutron star is the dense nugget of material left over after this explosive death.
    - ✓ The only object with a higher **density than a neutron star is a black hole**, which also forms when a dying star collapse.
- The pulsars are **rapidly rotating neutron stars that emit radio-frequency pulses.**
  - **Pulsars spin because the stars from which they formed also rotate**, and the collapse of the stellar material will naturally increase the pulsar's rotation speed.
- **Pulsars are highly magnetic.** Pulsars have magnetic fields that range from 100 million times to 1 quadrillion (a million billion) times stronger than Earth's.
- **Pulsars can radiate light in multiple wavelengths,** from radio waves all the way up to gamma-rays, the most energetic form of light in the universe.
  - Also, the beam of radio waves emitted by a **pulsar may not pass through the field of view of an Earth-based telescope**, preventing astronomers from seeing it.
- Scientists use pulsars **to study extreme states of matter, gravitational waves, search for planets beyond Earth's solar system and measure cosmic distances.**

11.20. FAST RADIO BURSTS (FRBS) DETECTED IN THE MILKY WAY FOR THE FIRST TIME

- FRBs are **bright bursts of radio waves** (radio waves can be produced by astronomical objects with changing magnetic fields) whose durations lie in the millisecond-scale, because of which it is difficult to detect them and determine their position in the sky.
- FRB that have been **frequently detected in other galaxies,** have now been found in the Milky Way.

- First FRB was discovered in 2007, since when scientists have been working towards finding the source of their origin.
- **A galaxy** is a large group of stars, gas, and dust bound together by gravity. Our Sun (a star) and all the planets around it are part of a galaxy known as the Milky Way Galaxy.
- **Source of the FRB detected is a powerful magnetic neutron star**, referred to as a magnetar (SGR 1935+2154 or SGR 1935).
  - **A magnetar** is a neutron star whose magnetic field is thousand times stronger than a typical neutron star.
  - **Neutron stars** are formed when a massive star runs out of fuel and collapses.
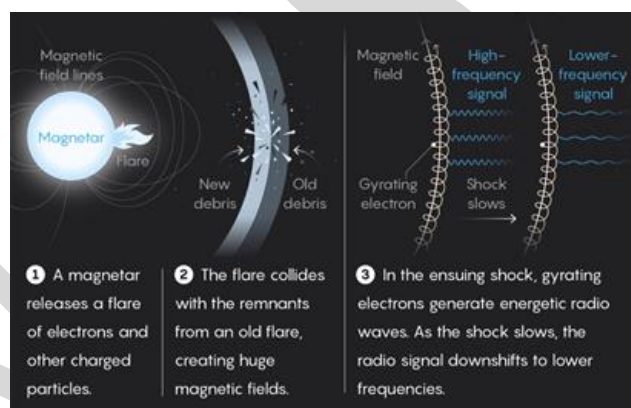
11.21. ONE HEALTH GLOBAL LEADERS GROUP ON ANTIMICROBIAL RESISTANCE (AMR)

- This Group was recently launched by **Food and Agriculture Organization, World Organisation for Animal Health and World Health Organization.**
- It was created in response to a **recommendation from the Interagency Coordination Group on AMR (IACG).**
  - IACG was convened by Secretary-General of UN after the UN high-level meeting on AMR in 2017.
- It **will elevate the need to prioritize best practices to address AMR** at global, regional, and national levels.
- It **will work for polices and legislation to govern the importation,** manufacture, distribution and use of quality antimicrobial drugs across all sectors.

11.22. GREAT BARRINGTON DECLARATION

- The Great Barrington Declaration is a **statement written by three public health experts** from Harvard, Stanford, and Oxford.
- **Declaration was written from a global public health and humanitarian perspective**, with special concerns about how the current COVID-19

strategies are forcing our children, the working class and the poor to carry the heaviest burden.

- It **encourages governments to lift lockdown restrictions** on young and healthy people while focusing protection measures on the elderly. Those who are not vulnerable should immediately be allowed to resume life as normal.
  - o This would allow COVID-19 to **spread in a population where it is less likely to be deadly encouraging widespread immunity** that is not dependent on a vaccine.
  - o Simple hygiene measures, such as hand washing and staying home when sick should be practiced by everyone to reduce the herd immunity threshold.
- The **approach balances the risks and benefits of reaching herd immunity** and to allow those who are at minimal risk of death to live their lives normally to build up immunity to the virus through natural infection, while better protecting those who are at highest risk. This is called Focused Protection.
- However, Barrington declaration **was criticized for putting individual preference above public good**.
  - o The declaration advocates that, "individual people, based upon their own perception of their risk of dying from COVID-19 and other personal circumstances, personally choose the risks, activities and restrictions they prefer."
- Also, **declaration misunderstands herd immunity**.

11.23. FIRST EVER VACCINE LISTED UNDER WHO EMERGENCY USE LISTING (EUL)

- World Health Organisation (WHO) has added **novel oral polio vaccine type 2 (nOPV2),** vaccine that has proven useful in treatment of Vaccine derived polio virus (VDPV) strain to its Emergency Use Listings.
  - o This is being done in **backdrop of increasing cases** of VDPV between 2010 and 2019.
  - o Total of 149 immunodeficiency VDPV cases were reported since 1961, **with 66% since 2010 onwards.**
- EUL is a **risk based procedure to assess and list unlicensed vaccines**during public health emergencies, such as polio and COVID.
  - o Its objective is **to make these medicines, vaccines and diagnostics available faster** to address the emergency.
  - o It will also pave the way for **potential listing of COVID-19 vaccines.**
  - o It was introduced during the West Africa Ebola outbreak of 2014-2016.

11.24. KALA-AZAR OR VISCERAL LEISHMANIASIS (VL)

- It is a **tropical disease characterised by irregular fever, weight loss, anaemia** and swelling of the spleen and liver.
- It is **caused by a protozoan Leishmania parasite** and is transmitted to humans by the bite of infected female sandflies.
- According to WHO, globally, about 7 to 10 lakh new cases occur annually.
  - o India accounts for about **two-thirds of the total global cases**, and the disease is endemic to **Bihar, Jharkhand, Uttar Pradesh and West Bengal.**
- An initiative was launched by WHO to eliminate VL as a public health problem from the South East Asia region by 2020. The **deadline has now been extended to 2023.**

11.25. GLOBAL CENTER FOR TRADITIONAL MEDICINE

- World Health Organisation announced that it will set up a Global Centre for Traditional Medicine in India to strengthen the evidence, research, training and awareness of traditional and complementary medicine.
- This new centre will support WHO's efforts to implement the WHO traditional medicine strategy 2014-2023 which aims to support countries in developing policies and action plans to strengthen **the role of traditional medicine** as part of their journey to **universal health coverage and a healthier, fairer and safer world.**
- Also, on World Ayurveda Day 2020 (13th November) Prime Minister dedicated the **Institute of Teaching & Research in Ayurveda (ITRA), Jamnagar** as an **Institution of National Importance (INI), and the National Institute of Ayurveda (NIA), Jaipur** as a **Deemed to be University** by the University Grants Commission to the nation to mark celebration.

11.26. INTERSTATE MIGRANT POLICY INDEX (IMPEX) RELEASED BY INDIA MIGRATION NOW (IMN)

- IMPEX **ranks and compares all the states based on their migrant integration policies. It examines policy areas such as** child rights, education, health and sanitation, housing, political inclusion etc.
  - o **More than 1/3rd of India's population is internal migrants**, while 75% of the youth of are migrants (Centre for Policy research, 2018).
  - o IMN is a **Mumbai-based research non-profit,** a regional adaptation of international Migrant Integration Policy Index, conceptualised by

Migration Policy Group and Barcelona Centre for International Affairs.

- **Key findings**
  - o **Kerala, Goa and Rajasthan are the top three states with migrant friendly policies**.
    - ✓ Kerala provides targeted schemes, social security, labour protection and welfare for migrant workers.
    - ✓ Rajasthan does not have restrictions based on domicile certificate.
    - ✓ Goa has favourable policies like information to migrants in their native language, contractors to bear healthcare costs etc.
  - o States tend to **frame discriminatory policies that favour locals over interstate migrants**. Domicile status constitutes one of the starkest of these.
  - o **Migrant workers belonging to SCs and STs are even more excluded** from cities because migrant status is tied to socio-economic status.

11.27. UNITED NATIONS (UN) LAUNCHED THE SANITATION AND HYGIENE FUND (SHF)

- SHF is global financing mechanism which will provide accelerated **funding to countries with heaviest burden of diseases stemming from lack of sanitation services** and least ability to respond.
  - o It aims to **raise $2 billion over the next five years** to support the efforts.
  - o It is **hosted by UN Office for Project Services**.
- **Objective of SHF**
  - o expanding household sanitation;
  - o ensuring menstrual health and hygiene;
  - o providing sanitation and hygiene in schools and healthcare facilities;
  - o supporting innovative sanitation solutions.
- **Earlier, WHO's WASH Strategy 2018-2025** was adopted which describes how WHO will increase its impact through introduction of transformational approaches, and tackling new results areas like WASH in health care facilities.

11.28. ACADEMIC FREEDOM INDEX

- Index try to **quantify the freedom of university scholars** to debate politically and culturally controversial topics without fearing for their safety or studies, and without any external influence on the institutions' affairs, based on a combination of factual data and the assessments of 1,800 academicians worldwide.
- It is the result of a collaborative effort between researchers at **Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) and the V-Dem**

Institute, the Scholars at Risk Network, and the Global Public Policy Institute.

- The index scores countries between **0 (worst)** and **1 (best)**.
- India has **scored considerably low** in the international **Academic Freedom Index (AFI)** with a score of **0.352** which is closely followed by **Saudi Arabia (0.278)** and **Libya (0.238)**.
  - o India has **not fared well in components like** institutional autonomy, campus integrity, freedom of academic and cultural expression and constitutional protection of academic freedom.
  - o Most universities in the country are subjected to unsolicited interference from governments in both academic and non-academic issues.
    - ✓ However, National Education Policy (NEP) 2020 aims to de-bureaucratise the education system by giving governance powers to academicians. This may help to reduce political interference to an extent.

11.29. ATHENA SWAN CHARTER

- **Department of Science and Technology, under new Science, Technology and Innovation Policy**, is incorporating a system of grading institutes depending on the enrolment of women and advancement of careers of women faculty and scientists.
  - o In 2015-16, share of **women in scientific research and development was 14.71%**
- This concept is borrowed from **Athena SWAN (Scientific Women's Academic Network) program of UK.**
  - o Athena SWAN Charter is an **evaluation and accreditation programme enhancing gender equity** in science, technology, engineering, mathematics and medicine.

11.30. NATIONAL PORTAL FOR TRANSGENDER PERSONS

- Recently, **Ministry of Social Justice and Empowerment (MoSJE)** launched 'National Portal for Transgender Persons'.
- **Portal** is for issuing I-cards to transgender without physical Interface and without having to visit any office.
  - o Portal will help community get Transgender Certificate and Identity Cards as per their self-perceived identity which is an important provision of **The Transgender Persons (Protection of Rights) Act, 2019.**
- **MoSJE also e-inaugrated Garima Greh** which is a shelter home to provide shelter to Transgender

persons, with basic amenities like shelter, food, medical care and support capacity-building.

11.31. SCOTLAND BECAME THE FIRST COUNTRY TO MAKE SANITARY PRODUCTS FREE

- Recently, Scottish Parliament unanimously passed **The Period Products (Free Provision) (Scotland) Act** which makes it legally mandatory for all public institutions to provide period products, including tampons and pads to all those who need them.
- It is the **first law of its kind in the world** to **make access to menstrual products a right**.
- The Bill was introduced in **April 2019** with the goal of eliminating **"period poverty".**
  - **Period poverty is the lack of access to sanitary products**, menstrual hygiene education, toilets, hand washing facilities, and, or, waste management.

12. APPENDIX

12.1. MITIGATION AND MANAGEMENT OF COVID-19- PRACTICES FROM INDIAN STATES AND UNION TERRITORIES

This compendium details information about various practices and initiatives implemented by States, Districts and Cities in India for containing and managing the COVID-19 outbreak.

Note- Kindly just go through them once. They can used as case studies in the examination.

Practices	Government of India Guideline	Best Practices
Surveillance	**For active surveillance**, residential areas will be divided into sectors for ASHAs/ Anganwadi Workers /ANMs each covering 100 households. **Field workers will perform active house-to-house surveillance** daily in the containment zone. **All Influenza Like Illness/Severe Acute Respiratory Illness (ILI/SARI) cases reported in the previous 14 days by the Integrated Disease Surveillance Programme (IDSP)** in the containment zone will be tracked and reviewed. **Information Communication Technology** is used in the process.	**Assam:** "Assam Community Surveillance Plan (ACSP)" was carried out to look for SARI, ILI and fever cases covering all 28,000 villages/wards of Assam. Through door-to-door visits, potential cases were listed for testing. **Bihar:** In April, 2020, door-to-door screening was organised in 4 districts along the lines of the Pulse Polio Campaign for identification of individuals with COVID-like symptoms with **special attention to health of senior citizens.**
Contact Tracing	- The supervisory officer in whose jurisdiction, the **laboratory confirmed case/suspect case falls shall inform the Control Room** about all contacts and their residential addresses. - District authorities may advise individuals to **install & use the Aarogya Setu application**.	**Kerala:** On the basis of details collected from patients as well as their primary contacts, **route maps are prepared.** **In-depth interviews of patients** for identifying the places visited and people they interacted with. **Karnataka:** Use of digital tracker for tracing COVID-19 infected persons.
Cluster Management	**During Early Outbreak (When only travel related cases were reported from India) approach includes** - Inter-ministerial coordination and Centre-State Coordination; - Early detection through Point of Entry screening of passengers coming from affected countries; - Surveillance and contact tracing through IDSP of these travelers; - Early diagnosis; - Maintain buffer stock of PPE; - Risk communication for creating awareness. **For large outbreaks strategy approach includes:** - Geographic quarantine and containment strategy with strict perimeter control; - active search of case, early isolation & testing all suspect cases; - State and District levels to undertake mapping of cases and contacts so as to delineate containment and buffer zones.	**Rajasthan (Bhilwara Model):** A curfew was imposed on 20 March, 2020 with **sealing of entry points across District**. **Daily disinfection and sanitization activities** were carried out in containment zones. **Hotels in the District were repurposed as Quarantine Centres**. **"Corona fighters" were appointed** to monitor the movements of people in home quarantine. **Uttar Pradesh (Agra Model):** A 'Containment and Rapid Emergency Response System' was devised, the initial step of which involved tracing the infection epicentre or hotspot. **Health workers traced the first individual** who tested positive for COVID in Agra and subsequently mapped out his entire travel history and was quarantined. **Integrated Control and Command Centre (ICCC) of Agra Smart City, established** as part of the Smart City Mission was converted into a COVID war room.

Testing	• **For routine surveillance in containment zones and screening at points of entry**, a Rapid Antigen Test, RT-PCR, TruNat or CBNAAT test (in order of priority) may be conducted for all symptomatic cases; all asymptomatic direct and high-risk contacts of a laboratory confirmed case. • **For routine surveillance in non-containment areas**, an RT-PCR, TruNat, CBNAAT or Rapid Antigen Test (in order of priority) may be conducted for all symptomatic individuals with a history of international travel in the last 14 days. • **In hospital settings,** an RT-PCR, TruNat, CBNAAT or Rapid Antigen Test (in order of priority) may be conducted for all symptomatic patients (ILI/SARI), asymptomatic high-risk patient, all pregnant women who are hospitalized for delivery and all symptomatic neonates presenting with acute respiratory/sepsis like illness.	• **Goa:** Goa was one of the first States to put in place random testing protocols to check people entering the State for potential COVID related symptoms with Testing kiosks were set up in various places across the State, especially at the borders and on industrial estates. • **Gujarat:** Ahmedabad Municipal Corporation deployed mobile testing vans across all zones in the city. • **Jharkhand:** TruNat machines have been installed in Community Health Centres.
Isolation Management	• **Isolation refers to separation of individuals who are ill and suspected or confirmed of COVID.** • **In resource constrained settings,** all positive COVID-19 cases can be cohorted in a ward with good ventilation (COVID Care Centre (CCC), Dedicated COVID Health Centre). Similarly, all suspect cases should also be cohorted in a separate ward.	• **Chhattisgarh:** State converted at least 100 bogies provided by the Railways into COVID isolation and care wards. • **Kerala:** State Department of Health, in partnership with Asimov Robotics, has designed cost-effective robots for performing various functions within isolation wards, thus reducing the requirement for healthcare staff.

Health Infrastructure	• **A three-tier arrangement for managing suspect/confirmed cases will be implemented.**
	  o The mild and very mild cases will be kept in **COVID Care Centres** which essentially are temporary makeshift hospital facilities made by repurposing hotels/hostels/guest houses/stadiums near a COVID Hospital.
	  o Severe cases requiring critical care/intensive care will be managed in **Dedicated COVID Hospitals.**
	  o If such facilities are not available in the containment zone, the **nearest tertiary care facility in the Government/ private sector** will have to be identified.
		• **Maharashtra:** On 21 May, 2020, a directive was issued by Maharashtra to all charitable hospitals for enhancing their bed capacity to accommodate as many patients as possible. Around 80% of the operational bed capacity of such hospitals was regulated by rates determined by the State till 31 August, 2020.
		• **Odisha:** Odisha Government entered into a Memorandum of Understanding with two private hospitals for establishing Dedicated COVID Hospitals.
		  o Facilities were set up using **Corporate Social Responsibility funds** of the Odisha Mining Corporation.

Case Management	• **Mild cases can be managed at CCC**, First Referral Units (FRUs), Community Health Centres (CHC), Sub-District and District Hospitals or at home. • **Patients with moderate disease** will be isolated in a Dedicated COVID Health Centre (DCHC) or District hospital or Medical College hospitals. • **Patients with SARI experiencing respiratory distress may require pulse oximetry**, oxygen therapy, non-invasive and invasive ventilator therapy.	• **Haryana:** Once an individual test positive for COVID-19, a dedicated team conducts a home visit to assess if he or she is eligible for home quarantine. • **Noida:** Measures like equipping surveillance teams with pulse oximeters, keeping individuals with oxygen saturation levels below 96% in high-dependency unit etc. o **Early infusion of oxygen** in patients with moderate or severe COVID symptoms.
Awareness Creation	• **Citizens should be encouraged to appreciate the efforts of people providing essential services** and be supportive towards them; • **Share only authentic information available on the website of MoHFW**, or the World Health Organization;	• **Nagaland:** The special action group constituted under the principal secretary engaged with faith based organizations for creating awareness. • **Kerala:** An application called 'GoK Direct' has been developed which provides COVID-

		related information and alerts on a real-time basis as released by the Department of Information & Public Relations.
Production and Distribution of Medical Supplies	• **Goa:** State issued permissions to liquor manufacturing units for producing hand sanitizers and after meeting local demand, sanitizers were exported. • **West Bengal**: State established a partnership with a leading textile manufacturer for reconfiguring their existing machinery to manufacture PPE at the requisite scale.	
Medical Waste Management	• The biomedical waste during the COVID-19 outbreak is **to be managed in accordance with Biomedical Waste Management Rules**.	• **Bhopal:** Five dedicated DTDC vehicles have been allocated in every cluster for waste collection by the biomedical incinerator service provider. They collect waste in sealed dechlorinate bags and transfer them to incineration plants for processing. • **Delhi:** Biomedical waste is being collected from the doorstep of quarantined households in yellow bags by trained workers equipped with protective gear.
Delivery of Essential Services	• States should **identify and designate facilities or separate blocks within existing facilities** to provide COVID related services. • State should **establish dedicated teams within each State and each District to ensure the continuity of essential services and COVID preparedness and response**.	• **Gujarat:** Ahmedabad developed an innovative concept, the "Dhanwantari Rath", which is a mobile van providing non-COVID essential health services to the doorsteps of people in the city. • **Sikkim:** Doorstep delivery of drugs and services under various non-COVID national health programmes (NTEP, NACP) was continued.
Capacity Building and Welfare of Health Workforce	• Training will be designed to suit the requirements of every category of healthcare workers involved in the containment operations.	• **Bihar:** Bihar Government organised virtual sensitization and training programmes through collaboration with institutions like AIIMS, Delhi. • **Punjab:** Clinical Management Manual for COVID-19 as a single reference point for health providers in the State.
Governance mechanisms	• **Chhattisgarh:** A team of officials was formed as part of the Central Command Centre in the State which were responsible for collecting all relevant data for containing and managing epidemic from District Collectors and Chief Medical Officers. • **Jammu & Kashmir:** A 24×7 control room was operationalized in Srinagar to oversee contact tracing and containment efforts.	
Management of Travel	• All passengers shall be **advised to download Arogya Setu app** on their mobile devices. • States/UTs shall ensure that **all passengers undergo thermal screening at the point of departure** and only asymptomatic passengers are allowed to board the flight/train/bus.	• **Andhra Pradesh:** They used mobile tower signals to determine all the places a person has travelled to. Upon receiving the location details of patients, authorities identify the places where he or she might have spent at least 15 minutes and could potentially have spread the infection to others.
Telemedicine	• Telemedicine **guidelines is released to give practical advice to doctors** and are encouraged to consider the use of telemedicine as a part of normal practice. • Guidelines will provide information on various aspects of telemedicine including information on technology platforms and tools available to medical practitioners and how to integrate these technologies to provide health care delivery.	• **Goa:** The State made efforts to facilitate easy communication between citizens and doctors by leveraging technological innovations such as CallDoc and tele-consultations.