



**VISION IAS**

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# **CURRENT AFFAIRS**

## **MARCH 2020**


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# 1. POLITY AND CONSTITUTION

## 1.1. JUDGES IN RAJYA SABHA

### Why in news?

Recently, the President nominated the former Chief Justice of India, Ranjan Gogoi to the Rajya Sabha.

### More on news

- The President has used his powers under **Article 80 (1)(a)** to nominate 12 persons having special knowledge or practical experience in respect of such matters as the following: Literature, science, art and social service.
- Ranjan Gogoi was nominated to the Rajya Sabha within six months of his retirement as the 46th Chief Justice of India
- There has been a number of reactions and counter-reactions to it. A public interest litigation has also been filed in the Supreme Court against this move.

### Previous Instances of such appointments-

- **Justice Ranganath Mishra**- He was appointed to the Rajya Sabha six years after he demitted office as CJI.
- **Justice Baharul Islam**- He was a Rajya Sabha member and then became a High Court judge, then Supreme Court judge and finally became a Rajya Sabha member again.
- **Justice Kawdoor Sadananda Hegde**- He served as a member of the Rajya Sabha prior to his joining the Madras High Court. He was sworn into the Supreme Court in 1967.

### Arguments in favour

- **No legal/ constitutional bar**- the **Article 124(7)** provides that a retired Supreme Court judge cannot “plead or act in any court or before any authority within the territory of India”.
  - This provision only restricts post-retirement appointments in Judiciary itself, but not in posts of president, governor, member of parliament, etc.
  - There is no cooling off period before a Judge following his/her retirement.
- **Not a strict separation of power**- the Indian constitution does not provide for a strict separation of powers as available in the American constitution.
  - Further, the legislature and judiciary can work together for nation-building, if there are such exchange of personalities.
  - The presence of judges in Parliament will be an opportunity to project the views of the judiciary before the legislature and vice versa.
- **Other instances of post-retirement appointments of judges**- in other domains and areas such as Justice P. Sathasivam was appointed the Governor of Kerala and Justice Hidayatullah became the Vice President of India.
- **Has not joined any political party**- The given instance is of nomination of judge. There is a crucial difference between elected and nominated members.
  - Those who are elected to a house from a party are subject to whip of that party. They are bound to vote the way the party directs them, and in general, they can't criticise the party and the govt if the party is in power.
  - On the other hand, a nominated member is an independent member, not subject to any party whip.
- **Adds value to the Rajya Sabha debates**- Eminent judges can contribute towards more nuanced law making in the country and strengthen Rajya Sabha as the conscience keeper of the Parliament.

### Arguments against

- **Compromises the independence of judiciary**- It sends out the message that if a judge gives ruling in favour of the executive, he/she will be rewarded.
  - More than being a reward for the retired judge, the offer of a plum post-retirement job, sends a message to judges who are still working.
- **Integrity of the judges**- the judges are expected to conduct themselves in such a manner even after their retirement so as not to create an adverse impression about the independence of judiciary.
  - The judges are expected to work without fear or favour and remain above political divides or affiliation in their career.
- **Violates the fundamentals of separation of powers**- The government is by far the **largest litigant** before the judiciary. Every such appointment puts under question the court's ability to adjudicate matters in a transparent manner.

- **Erode people's trust-** The judiciary thrives on perception and faith. Such actions can shake people's confidence and faith in the independence of judiciary.

### Measures which can be taken

- **Mandatory cooling off period-** for judges for taking up government assignments after retiring.
  - The cooling-off period will minimise the chances of judgments getting influenced by post-retirement allurements.
  - This cooling-off period can be of six years and no judge should be appointed before completing this period, as the government's tenure is of five years.
- **Follow Britain's model-** where each and every judge of the Supreme Court has the right to sit in the House of Lords for the rest of his or her life.
  - If nomination is automatic upon retirement and the tenure 10 years, there is no scope for doubting the independence of such new members in the Rajya Sabha.
- **Extend the application of other statutes to judges-** such as Section 8 of the Lokpal and Lokayukta Act, 2013, which barred its chairman and members from re-employment or taking any assignments as diplomat and Governor and other posts, on ex-judges of the Supreme Court and high courts.

#### Post-retirement appointment/ cooling off period

- **Group "A" Government officers-** cannot seek commercial employment within 2 years, post their retirement, without the permission of the government.
- **Comptroller and Auditor-General (CAG)-** is not be eligible for further office either under the Government of India or under the Government of any State after he has ceased to hold his office.
- **Union Public Service Commission (UPSC)-** on the expiration of his term of office, a member is ineligible for reappointment to that office.

## 1.2. RIGHT TO PROPERTY

### Why in News?

Recently, the Supreme Court has reiterated that forcible dispossession of a person of his private property without due process of law is a human right violation.

### Evolution of Right to Property in India

- The Constitution originally provided for the **Right to Property** as a fundamental right (F.R.) under Articles 19 and 31.
  - **Art. 19(1) (f)** guaranteed to the Indian citizens a right to acquire, hold and dispose of property.
  - **Article 31** of Indian Constitution stated that no person can be deprived of his property without the consent of a proper authority.
  - Also **Article 31(2)** had put two limitations on State power of acquisition of land viz.
    - ✓ Firstly, the compulsory acquisition or requisitioning of land should be for public purpose.
    - ✓ Secondly, the law enacted in that behalf should provide for compensation.
- However, after independence, it resulted in numerous litigations between the government and citizens. Major contentious issues were:
  - laws enacted by government in relation to land reform
  - measures to provide housing to the people in the urban area

### Constitutional Amendments related to Right to Property.

- The **First amendment** added two **Articles 31-A & 31-B** and **Ninth schedule** to the Constitution.
  - **Article 31-A** included provisions for saving of certain laws providing for acquisition of estates from Articles 14, 19.
  - **Article 31-B** provided that any act or regulation mentioned in **Ninth Schedule** was immune from judicial review and cannot be nulled on the basis that they might violate any of the fundamental rights.
  - **Ninth Schedule** was added to the constitution so that government could park certain laws which were to be kept immune from judicial review.
  - It was mainly done to secure the constitutional validity of zamindari abolition laws.
- The **Fourth amendment** extended the scope of **Article 31-A** by adding a few more categories of deprivation of property which were to be immune from litigation under **Articles 14, 19 & 31**.
- The **Seventeenth amendment** further elaborated the definition of 'estate' in Article 31-A.
- The **Twenty Fifth amendment** amended **Article 31** and added a **new Article 31-C**
  - **Article 31-C** provided for saving of laws giving effect to certain directive principles (Article 39(b) and 39(c) were given precedence over Articles 14, 19 and 31).
- The **Forty Second amendment** amended Article 31-C to give precedence to all DPSPs over Articles 14, 19 and 31.
  - This was deemed unconstitutional by the judiciary in the **Minerva mills v Union of India Case**.

- regulation of private enterprises
- nationalization of some commercial undertakings.
- To narrow its scope it was modified several times by the constitutional amendments namely **1st, 4th, 17th, 25th and 42nd Constitutional Amendment Acts**.
- However, it was continued to be seen as a roadblock in socio-economic development of the country.
- Finally, **44th Constitutional Amendment Act repealed the entire Article 31 and Article 19(1)(f) & inserted Article 300A**.

#### Right to Property under Article 300A

- Article 300-A states that no person shall be deprived of his property save by authority of law. This means that-
  - Property is no longer a Fundamental Right, i.e. the aggrieved individual would not be competent to move to Supreme Court under Article 32, for any violation of Art 300A.
  - Also, a law will be necessary to deprive a person of his property.

#### Arguments in favour of Right to property to be reinstated as Fundamental Right

- **It would protect citizens from unwarranted state action in the name of acquisition:** Compulsory land acquisition and mass displacement in the name of development have given rise to certain socio-economic issues. Thus, there is a need of stronger checks on the government.
- **It will provide support to the judiciary:** As of now the development of the Supreme Court's doctrinal jurisprudence is only safeguard against the fear of arbitrariness of State action. For example- **The Fair Balance test**.
  - The elevated status of Right to Property will aid Judiciary for effective delivery of justice.
- **Tackling manipulative practices in calculating fair compensation:** Land owners are at times deprived of a fair compensation due to vagueness in laws relating to land acquisitions.
- **Insecure Titles and Poor Land Records and Administration:** Many citizens lack a clear title to their land and it is accompanied by poor maintenance of land records by state organizations. For instance, the land rights of indigenous tribes were not recognized by the state, despite these people living in the land for generations.

#### Arguments in favour of Right to property remaining a legal right

- **It leads to smoother Land Acquisition:** India is developing country and for this purpose land acquisition should become swifter which is facilitated by Article 300A.
- **It has eased up judicial burden:** Previously, the judiciary was burdened with litigations related to property rights. However, it has come down significantly.
- **It aids government in its welfare objectives:** Given the government provides a fair compensation, land acquisition is necessary for fulfilling welfare purposes such as ensuring road connectivity, making electricity accessible to all etc.

#### Right to Property as a Human Right

- In several cases, the Supreme Court of India has held that the right to property is not just a statutory right but is also a human right.
- **Universal Declaration of Human Rights 1948** under Section 17(i) and (ii) also recognizes right to property. It states that-
  - Everyone has the right to own property alone as well as in association with others,
  - No-one shall be arbitrarily deprived of his property.
- **Significance:**
  - provides safeguards against arbitrariness of state
  - gives due importance to property as a tool of self-protection
  - allows people to be entrepreneurial

#### Fair Balance Test

- According to it taking of property without payment of an amount reasonably related its value would normally constitute a disproportionate interference which could not be considered as justiciable.

#### Conclusion

There is a need to balance the right to property with the development of the society and the country as a whole. Few steps that can be taken in this regard are:

- Land records should be computerized.
- There is a need to develop institutions and processes that are easily accessible and provide mechanisms to the people to definitely establish their land titles.
- Government must follow guidelines prescribed by the Supreme Court whilst calculating fair compensation. LARR Act can be reformed in this regard.

- Large scale displacements must be avoided. But if necessary, then appropriate rehabilitation must be provided and the compensation should cover the social cost of displacement as well.

### 1.3. ANTI-DEFECTION LAW

#### Why in news?

Recently, the deep political crisis in the state of Madhya Pradesh has once again brought the spotlight on the worrying trend in Indian parliamentary system i.e. **Anti-Defection Law**.

#### More about News

- The **22 Rebel Members of Madhya Pradesh Legislative Assembly** tendered their resignation to the Speaker, thereby, **defecting from the ruling Party of the state**, and thus, paving way for the fall of the government of the day in Madhya Pradesh. This route **by-passes the Anti-Defection law**.
- Hence, the current form of the Anti-Defection Law has proven to be **woefully ineffective in achieving its key objective** – that of preventing quid-pro-quo deals and political instability.

#### Understanding Anti-defection Law (ADL)

- The **Tenth Schedule** also known as Anti-defection Law, was inserted in the Constitution in 1985, **by the 52nd Amendment Act**.
- It lays down the process **by which legislators may be disqualified on grounds of defection** by the Presiding Officer of a legislature based on a petition by any other member of the House.
- It seeks to provide a stable government by ensuring the **legislators do not switch sides**. It seeks to prevent such political defections which may be due to reward of office or other similar considerations.
- The law **applies to both** Parliament and state assemblies.
- **Disqualification under ADL**
  - **Members:** There are **two grounds** on which a member of a legislature can be disqualified:
    - ✓ If the member **voluntarily gives up the membership** of the party, he shall be disqualified. Voluntarily giving up the membership is not the same as resigning from a party.
      - Even without resigning, a legislator can be disqualified if by his conduct the Speaker/Chairman of the concerned House draws a reasonable inference that the member has voluntarily given up the membership of his party.
    - ✓ If a legislator votes in the House **against the direction of his party** and his action is not condoned by his party, he can be disqualified.
  - **Independent Members:** He becomes disqualified to remain a member of the House if he joins any political party after such election.
  - **Nominated Members:** If he joins any political party after the expiry of six months from the date on which he takes his seat in the House.
- **Exceptions under the law:** Legislators may change their party without the risk of disqualification in **certain circumstances**:
  - If there is a **merger** between two political parties and two-thirds of the members of a legislature party agree to the merger, they will not be disqualified.
  - If a person is elected as the **speaker of Lok Sabha or the Chairman of Rajya Sabha** then he could resign from his party, and re-join the party once he demits that post.

#### Amendment of the law

- When the anti-defection law was enacted first, **there was a provision** under which if there occurs a **split in the original political party** and as a result of which one-third of the legislators of that party forms a separate group, they shall not be disqualified.
- However, this provision resulted in large scale defections and the lawmakers were convinced that the provision of a split in the party was being misused.
- Therefore, in the **91st Constitutional Amendment in 2003**, defections on the grounds of split and merger were prohibited.
- Now, the only provision which can be invoked for protection from disqualification is the **provision relating to the merger**.

#### Why anti-defection law needs an overhaul?

- **Rampant defection in spite of the law:** As allegations of legislators defecting in violation of the law have been made in several states including Andhra Pradesh, Arunachal Pradesh, Goa, Manipur, Nagaland, Telangana and Uttarakhand in recent years, thereby **establishing a culture as well as acceptance of defections**.

- **Questionable position of speaker:** The Tenth Schedule gave the Speaker of Lok Sabha and assemblies unquestionable power in deciding petitions seeking disqualification of MLAs under the anti-defection law.
  - This was challenged in the **Supreme Court, in Kihoto Hollohan case [1992]** which ruled that Speakers, while deciding petitions under anti-defection law, exercised judicial powers akin to a tribunal and **hence their decisions would be subject to scrutiny of HCs and the SC.**
  - Further, the **SC in the Karnataka rebel MLAs case** had said, “Speaker’s political affiliations cannot come in the way of adjudication (of disqualification petitions)”.
- **To stabilise the parliamentary system and in turn democracy:** Often Political parties have been found indulging in horse-trading and corrupt practices, due to which citizens are denied stable governments. Hence its overhaul is needed so that such undemocratic practices are discouraged.
- **No room for legitimate dissent:** The law often restricts a legislator from voting in line with his conscience, judgement and interests of his electorate, as political parties issue a direction to MPs on how to vote on most issues, irrespective of the nature of the issue.
  - Several experts suggest that the law **should be valid only for those votes that determine the stability of the government** (passage of the annual budget or no-confidence motions).
- **Open to interpretations:** The first ground for disqualifying a legislator for defecting from a party is his ‘voluntarily giving up’ the membership of his party. This term is susceptible to interpretation.
  - Though, the **Supreme Court has clarified this point** by saying that the presiding officer, who acts as a tribunal, has to draw a reasonable inference from the conduct of the legislator.

#### Related News

#### Removal of Manipur’s Minister by the Apex Court by invoking Article 142.

- Recently for the first time, **the Supreme Court removed** Manipur’s Minister against whom disqualification petitions were pending before the Speaker since 2017, from the state cabinet.
- The apex court’s ruling came on an appeal against a Manipur High Court order on a petition seeking **directions to Manipur Assembly Speaker** to decide the disqualification pleas within a reasonable period of time.
  - The Manipur high court had stated that it cannot pass any order as the question of whether a High Court can direct a Speaker to decide on a disqualification petition within a time frame is **pending before a Supreme Court Bench.**
- Though, **Article 212 of the Constitution bars courts from inquiring into proceedings of the Legislature**, the SC was **“constrained”** to invoke the court’s extraordinary powers under Article 142 of the Constitution, “given the extraordinary facts” in the case, as in this case the Speaker’s conduct has been called into question on several occasions.
- **Article 142:** The Supreme Court in the exercise of its jurisdiction may pass such decree or make such order as is necessary for doing complete justice in any cause or matter pending before it, and any decree so passed or orders so made shall be enforceable throughout the territory of India.

#### Ways to strengthen the Anti-defection Laws

- **Alternate independent mechanism:** Recently, the Supreme Court said the “Parliament should amend the Constitution to substitute the Speaker with a **permanent Tribunal headed** by a retired Supreme Court Judge or a retired Chief Justice of a High Court, or some other outside independent mechanism, to ensure that such disputes are decided both swiftly and impartially.
- **Reasonable time frame to decide the disqualification cases by the speaker:** The Supreme court had said that “the Speaker, in acting as a Tribunal under the Tenth Schedule, is bound to decide disqualification petitions **within a reasonable period”**.
  - **It further said that** unless there were “exceptional circumstances”, disqualification petitions under the Tenth Schedule should be decided by Speakers within three months.
- **Administrative Reforms Commission’s Report titled ‘Ethics in Governance’ and various other expert committees** have recommended that the issue of disqualification of members on grounds of defection should be decided by **the President/Governor** on the advice of the **Election Commission.**

## 1.4. DRAFT RECOMMENDATIONS OF ECI ON ELECTORAL REFORMS

### Why in news?

Recently, the Election Commission of India (ECI) **published its major recommendations** to revamp its functioning and has invited suggestions from the public.



## Background

- After the Lok Sabha election, the ECI had constituted **nine working groups**, comprising ECI officials and State Chief Electoral Officers, who presented their draft recommendations.
- Working groups collated inputs from the field, analysed these inputs in the context of **existing legal and institutional frameworks**, and suggested pathways for the future to add value to the electoral process in the country.

## Main Recommendations

### Voter Registration

- **Online registration** of prospective voters at age of 17 years -registration facilities to be provided in schools and colleges.
- Preparing **Electoral Roll of Graduates' and Teachers' Constituency** through online platforms of **ERO Net** along with provision of **e-EPIC (Electronic Photo ID Card)** for voters.
- It recommends quarterly/six monthly qualifying date for **voter registration** instead of one annual date as qualifying date.
- **Integration of Citizen-facing services:** Integration of voter registration process with Citizen-facing services such as **Digi-Locker and UMANG** (Unified Mobile Application for New age Governance) so that it is easy to upload necessary documents while registering.

### Voter Facilitation

- **Single simplified form** for all services to voters such as registration, change of address, deletion of names etc. Also, door-step electoral services to **Persons with Disability (PwDs) and Senior citizens (80+Years)**.
- Expanding the network and **Electoral Service Centres (ESCs)/ Voter Facilitation Centres (VFCs)** to streamline electoral services to citizens.
- Initiatives like **Digital Election Calendar** for information and schedule of Elections to public and **GIS based Electoral Atlas** for mapping of Parliamentary Constituencies, Assembly Constituencies or Polling Stations for public information.
- Identify and implement **new voting methods** to increase voter participation, also ensuring that the process remains secure.

### Outreach, education and awareness

- Partnership with Govt. organizations, PSUs and Private Trade/Industrial Organizations for Electoral **education and awareness** such as **voter awareness forums** and **Chunav Pathshala** in polling stations.
- Setting up **Electoral Literacy Clubs** in all schools (inclusion of voter education in school curriculum) and colleges.
- Media as an outreach tool can be used in following forms:
  - Pro-active use of **New Media Technology** such as blogs, use of social media etc.
  - Setting up **Web TV and Web radio** for education of voters and other stakeholders.
  - Setting up **Community Radio Stations** for voter education.
  - **Periodic SVEEP** (Systematic Voters' Education and Electoral Participation) Talk programmes. SVEEP is the flagship program of ECI for voter education, spreading voter awareness and promoting voter literacy in India.

### Other recommendations

- **Political Party Expenditure:** A proposal to cap maximum expenditure of political parties to a multiple of half of maximum prescribed limit for individual candidates with the number of candidates fielded.

### Related News

#### Linking Aadhaar with voter ID

- Recently, the Law Ministry has got a proposal from the Election Commission (EC) to link the Aadhaar card with the Election Photo Identity
  - to ensure preparation of **error free electoral roll**
  - to **prevent duplication** of entries.
  - help secure voting to help **migrant voters** exercise their franchise.
- EC had last year proposed **amendments to Aadhaar Act, 2016, and Representation of the People Act, 1950** to enable linking of Aadhar with voter ID.
- However, the idea contravenes the Supreme Court judgement on Aadhaar which specified that it should be used only for some purposes like the **delivery of government services to citizens**.

### ERO Net

ERONET is a web-based system for Electoral officials. It automates the process of electoral roll management starting such as elector registration, field verification of electors etc.

- **Print media and social media regulation:**
  - **Prohibit Print Media & Social Media** akin to Electronic media during ‘period of silence’ under **section 125 RP Act, 1951.**
  - Include **Print & Social media** within ambit of section **126 of RP Act, 1951.**

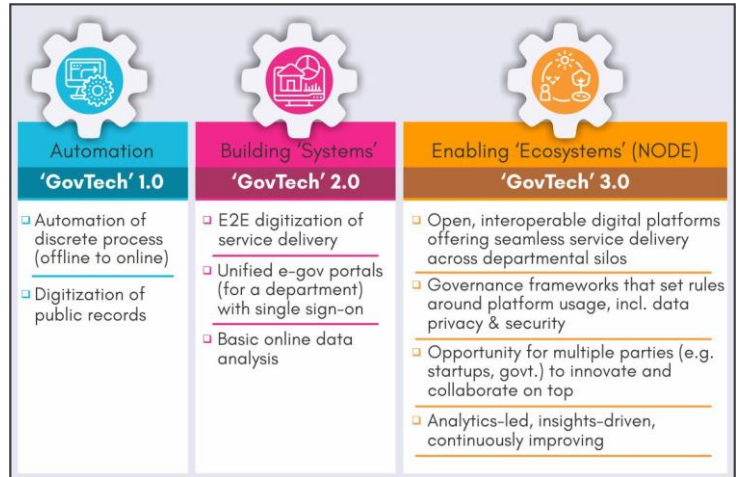
## 1.5. NATIONAL OPEN DIGITAL ECOSYSTEM

### Why in news?

Recently, the Union Ministry of Electronics and Information Technology has released a whitepaper titled, ‘**Strategy for National Open Digital Ecosystems (NODE)**’.

### More on news

- This whitepaper highlights key elements of NODE and describes the **paradigm shift** from earlier approaches to **digital governance** or ‘GovTech’. (Refer the infographic)
- It establishes **design principles** that can help realize the full potential of open digital ecosystems to create transformative impact across sectors.
- **Example of ‘GovTech’ 3.0** - The UPI platform, anchored by National Payments Corporation of India (NPCI), has led to a transformation in how financial services transactions take place, enabling cost-effective and speedy real-time digital payments.
  - UPI has given birth to a vibrant community of both public and private actors in financial services, such as the mobile wallet Payment Service Providers (PSP), who are building solutions in m-commerce, bill payments, P2P real-time payments, etc.



### About National Open Digital Ecosystems (NODE)

- **NODE** can be defined as “Open and secure delivery platforms, anchored by transparent governance mechanisms, which enable a community of partners to unlock innovative solutions, to transform societal outcomes”
- There are **three key components** of the NODE: At the core are **Delivery Platforms** (the technology), anchored by a robust **Governance Framework**, and a vibrant **Community of actors** using the platform, working together and building on top of the platform to deliver shared value.

Components	Principles for their design
<b>DELIVERY PLATFORM- Public digital infrastructure</b> that facilitates the delivery of services and solutions- <ul style="list-style-type: none"> <li>• Modular and applications with open Application Programming Interface (APIs). E.g. Aadhaar authentication</li> <li>• Data registries &amp; exchanges for interoperability</li> <li>• Stacks which combine applications, protocols.</li> <li>• End-users solutions</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Be open and inter-operable-</b> E.g. the National Urban Information System (NUIS)</li> <li>• <b>Make reusable and shareable</b></li> <li>• <b>Be scalable-</b> E.g. the GSTN platform</li> <li>• <b>Ensure security and privacy-</b> E.g. the ‘privacy by design’ principle in the Estonia’s e-health system</li> <li>• <b>Adopt an agile, data-driven development method</b></li> </ul>
<b>GOVERNANCE- Laws and rules</b> to govern ecosystem and <b>accountable institutions</b> that uphold these rules, which include- <ul style="list-style-type: none"> <li>• Platform ownership and access</li> <li>• Data privacy and security</li> <li>• Sustainable financing model</li> <li>• Talent and expertise</li> <li>• Domain-specific policies and standards</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Define accountable institution(s)-</b> E.g. GeM platform and Department of Commerce.</li> <li>• <b>Establish rules of engagement-</b> have clear delegation of responsibilities, decision rights &amp; liabilities to avoid mismanagement and instances of conflict of interests.</li> <li>• <b>Create transparent data governance</b></li> <li>• <b>Ensure the right capabilities</b></li> <li>• <b>Adopt a suitable financing model</b></li> </ul>
<b>COMMUNITY- Collaborative community of users and builders</b> who work together to create value for all	<ul style="list-style-type: none"> <li>• <b>Ensure inclusiveness-</b> Incorporate user-friendly UI/UX design, universal, and affordable access. E.g. the GeM Portal</li> <li>• <b>Facilitate participatory design &amp; co-creation</b></li> </ul>

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>Public and private actors creating new solutions on top of the core delivery platform</li> <li>End-users providing feedback loop</li> </ul> | <ul style="list-style-type: none"> <li><b>Drive end-user engagement-</b> Spread awareness via offline and online channels.</li> <li><b>Be analytics-driven and learn continuously</b></li> <li><b>Enable grievance redressal</b></li> </ul> |
|--|---|

### Benefits of NODE

- For citizens:**
  - Seamless and consistent end-user experience (e.g. Single Sign-on)
  - Increased efficiency and reliability of service delivery: convenient, fast and affordable
  - Enhanced transparency and accountability and reduction in leakages
- For government bodies:**
  - Improved ease of operations: removal of redundancies and faster processing
  - Increased delivery capacity (scale and speed)
  - Enhanced transparency and integrity
  - Realization of savings from economies of scale via shared digital infrastructure
  - Data-driven decision-making: increased robustness of government policies and schemes by leveraging insights from analytics
- For entrepreneurs and businesses:**
  - New business opportunities
  - Enhanced ease of doing business

### Prominent areas for applications of NODE

- Talent (Skilling and Jobs)-** for capturing all sources of supply and demand, connecting skill seekers with training institutes, facilitating interactions between job seekers and employers, and linking to available counselling and funding providers.
- Agriculture-** where farmer can access a range of other services at his fingertips, including customised crop advisory services, automated insurance processing, shared equipment rentals etc.
- Micro Small and Medium Enterprises (MSMEs)-** a universal digital ID can be established, similar to the Udyog Aadhaar Memorandum, with proper indexing of all data repositories like banks, utilities companies, statutory authorities and fin-techs across a shared digital platform.
- Public Service Delivery-** it would comprise an interoperable platform that enables integrated benefit disbursements and service delivery across multiple departments within the State. This platform would serve as the one-stop destination for a citizen to access, apply for and receive all his/ her entitlements

## 1.6. WORLD HAPPINESS REPORT 2020

### Why in news?

Recently, eighth edition of **World Happiness Report** released by **Sustainable Development Solutions Network**.

### Findings of the report

- Finland topped** the report as happiest country amongst 156 nations surveyed.
- India dropped to rank 144** from previously at 140 and **became new entrant to the bottom-fifteen group**.
- India ranked lower than neighbours Nepal at 92, Pakistan at 66, Bangladesh at 107 and Sri Lanka at 130.
- According to the index, the **urban-rural difference in India was high** and peri-urban population was happier than urban population.
- The **happiness study ranks the countries of the world** on the basis of questions from the Gallup World Poll. The results are then correlated with other factors, including GDP and social security.

### Sustainable Development Solutions Network

- It has been operating **since 2012** under the auspices of the UN Secretary-General.
- SDSN mobilizes global scientific and technological expertise to promote **practical solutions for sustainable development**, including the implementation of the Sustainable Development Goals (SDGs) and the Paris Climate Agreement.
- SDSN** is also publishing the **annual SDG Index & Dashboards Global Report**.

### Some observations by report on factors determining happiness

- Factors determining the happiness** levels of a country include life expectancy, social support, income, freedom, trust, health and generosity, amongst others.
- Tackling **corruption**, avoiding **civil strife** and improving **basic public services**, enabling people to enjoy **personal freedom** and encouraging them to **participate in civil society** are crucial to become happy nation.
- Higher happiness of the Nordic countries** is due to **social trust, trust in institutions, and social connections**.
- Rural population is happier than its urban counterpart due to **sense of belonging to their local community**. Also, **inequality of happiness** prevalent in urban communities makes them unhappy.
- Closeness to rivers, lakes, canals and greenspaces**, air quality, noise level and weather conditions spurs positive mood and makes people happier.

## 2. INTERNATIONAL RELATIONS

### 2.1. INDIA'S SOFT POWER

#### Why in news?

Recently, India has ranked 27th, in the **Global Soft-Power Index 2020**.

#### What is soft power?

- Soft power is the ability of a country to persuade others to do what it wants without resorting to force or coercion. **Soft power**, lies in a country's attractiveness and comes from three resources:
  - **its culture** (in places where it is attractive to others),
  - **its political values** (when it lives up to them at home and abroad), and
  - **its foreign policies** (when they are seen as legitimate and having moral authority).
- Though slower to yield results, soft power is a **less expensive means** than military force or economic inducements to get others to do what a country wants.
- Noted ancient **Indian scholars like Kautilya and Kamandak** have referred to 'soft' diplomacy, including the practice of sandhi (peace).

#### India's Strengths as a Soft Power

- **India's long history, culture and civilization:** These have attracted both intellectuals and common folk from across the globe to India.
- **Presence of all the major religions of the world:** Four are homegrown- Hinduism, Buddhism, Jainism and Sikhism and four came from outside- Zoroastrianism, Judaism, Christianity and Islam. This adds to the incentives for the religiously minded foreigners to visit India.
  - ✓ The Indian government is using this aspect of soft power in a big way in its outreach to East, Southeast, and Central Asia.
  - ✓ Buddhism is at the heart of its diplomacy here. Among these is the **Nalanda University project**, a major soft power initiative of the Indian government that envisages the revival of a renowned center of Buddhist learning.
- **Yoga and Meditation:** Have become household terms in most countries and the health aspects of these are being researched and propagated by well know physicians and doctors.
- **Music, dance, art and architecture:** Even though the Taj Mahal is the most famous monument of India, foreign tourists are discovering thousands of other historical and archaeological sites all over India.
  - **The Indian Council for Cultural Relations (ICCR)** under the **Ministry of External Affairs (MEA)** does pioneering work in not only disseminating our culture abroad but also encouraging exposure of other cultures in India to encourage a cultural dialogue.
- **Bollywood** has been projected as a great Soft Power tool for as Bollywood movies are popular among the people of many countries.
  - **In Afghanistan**, for instance, Bollywood and Indian soap operas have a massive following. Bollywood movies are hugely popular in Africa as well.
- **Indian Cuisine** is a major attraction for foreigners. There may not be a single big city in the world without at least two or three Indian Restaurants.
- **Indian Diaspora as NRIs and PIOs** play a vital role in projecting its Soft Power. They not only help in disseminating our culture but also have, on occasions, contributed to promoting our Foreign Policy goals.

#### Global Soft Power Index:

- It is released by **UK based Brand Finance**.
- The index considers three parameters — **familiarity, reputation and influence**.
- The top four nations were the US, Germany, the UK (despite Brexit) and Japan.
- India however, ranks 27th — below China (5), the UAE (18) and even Saudi Arabia (26).
- As per the index - India clearly **underperforms**, given the size of its **population, economy and its rich heritage**.

#### Few initiatives taken by India

- Setting up a public diplomacy division within the **Ministry of External Affairs** in 2006
- Ministry of Tourism launched "**Incredible India**" **campaign** to showcase its social, political, and cultural assets abroad.
- Supporting larger foreign policy initiatives such as the **Look East Policy (now Act East)**, the **Connect Central Asia policy**, and **developing strategic aid and trade partnerships in Africa**.
- Ministry of External Affairs (MEA) has decided to develop a "**soft power matrix**" to measure the effectiveness of India's soft power outreach.
- It has also recommended **increased budgetary allocations to the Indian Council for Cultural Relations (ICCR)**, the nodal government agency responsible for India's soft power projection.

## Challenges with India's Soft Power

- **Not unlocking its potential:** As the world's largest democracy, India is variously described as a model of soft power, however a country that makes remarkably poor use of it.
  - Similarly, India has more UNESCO World Heritage sites than most of the developed world, but still fares poorly on **tourism and education** on a per capita basis.
- **Lack of diversification:** Though India has 36 India Cultural Centres (ICC) in various geographies, these are still aimed at the **diaspora** in **Caribbean and South Africa** whereas ignoring strategic and growing relationships in the Nordics and Latin America.
- **Negative perception:** India has a widespread reputation for **corruption, endemic poverty and hostility to business**.
  - Reports in the international media of pollution in **urban areas, child labor and violence against women** have also detracted expatriates, tourists, businesspeople and other visitors.
- **Lack of state enabled endeavours:** India rates badly on any measure of state-driven cultural diffusion rather than more organic and natural private sector and citizen-led efforts.
  - Indeed, most Indian cultural diffusion such as Bollywood have occurred **without** the involvement of the government.
- **India's Popularity restricted mostly to developing world:** In many cases India's appeal is to others in the developing world rather than to high-value or developed markets.
  - For example, despite their many evident shortcomings, India's universities continue to attract a large number of students from across the developing world, including Nepal, Afghanistan and Africa.

## Way Ahead

- **Need to focus on quality, training, excellence and investment for India's soft power to be globally recognised:** As currently, a flourishing economy and an effective international presence, India is a thriving market for the world; it has more than 250 million strong middle class with deep pockets.
- **Leveraging textile craftsmanship as it used to be a cultural motifs and patterns from all the cultures. India's Khadi textile designs** carry the history as well as a huge aspect of India's political philosophy that much of the world has yet to understand.
- **India could consider setting up an Indian Cultural Services (ICS) – a cultural cadre** which has high-profile career strategists recruited, trained and developed to nurture creativity with a global perspective.
- **Learning from international best practices:** Like UK's successful **'The GREAT Britain' campaign**, India also needs to invest in a strategic creative project in coordination with its various Government departments (including education, tourism and culture, commerce and industry, HRD) and launch a unified **cohesive pitch of 'Image India'**.

## Conclusion

Soft power **cannot be a substitute for hard power** as it helps only if the country has built up its conventional sources of economic and military power. At the most fundamental level, Soft Power is about **winning the hearts and minds of people**.

## 2.2. MULTIPARTY INTERIM APPEAL ARBITRATION ARRANGEMENT AT WTO

### Why in news?

Some members of World Trade Organization established **Multi-party Interim Appeal Arbitration Arrangement** as contingency appeal arrangement for trade disputes.

### About Multi-party Interim Appeal Arbitration Arrangement (MPIA)

- MPIA has been set up under **Article 25 of Dispute Settlement Undertaking of WTO**.
- It has been setup as **WTO's dispute settlement body has become dysfunctional**, after US decided block the appointment of judges.
- It offers **arbitration outside the Appellate Body** upon mutual agreement of the parties.
- Final arbitration rulings **will be binding and notified** to the Dispute Settlement Body (DSB), though they will not be adopted as Appellate Body reports.

- MPIA can be used between **any WTO members** when WTO Appellate Body is not functional.
- The agreement has been made by the **EU, Australia, Brazil, Canada, China, Chile, etc.**
- **India, USA are not part of** the agreement of MPIA.

#### Dispute Settlement System of WTO

- Dispute Settlement System (DSS) is a **mechanism to resolve trade disputes** between member states. It utilises both political negotiation and adjudication for dispute resolution.
- The **Uruguay Round negotiations (1986-1994)** culminated in the creation of the DSS and the adoption of the **Dispute Settlement Understanding (DSU)** to govern trade disputes between member states.
- The DSU embodies **important principles** for the functioning of the DSS
  - To provide **stability and predictability** to the multilateral trading system.
  - To establish a **fast, efficient, dependable and rule-oriented** system to resolve disputes
- **Dispute Settlement Body**
  - The General Council is WTO's highest decision-making body meets as the DSB.
  - It is essentially a political body and it administers rules and procedure of the DSU.
  - Decisions are taken here by the **reverse consensus method**, that is unless there is consensus against it.
- **Appellate Body (AB)**
  - AB is a **seven-member permanent organ** that adjudicates appeals within the DSS.
  - Members are **appointed by the DSB** for four-year terms.
  - It follows the **positive consensus mechanism**.
- US wants a **complete overhaul of the dispute resolution system** and blocking appointments to AB for two years. It considers that the body constrains its ability to counter unfair trading practices by China and other countries.

## 2.3. NUCLEAR NON-PROLIFERATION TREATY AT 50

### Why in news?

Recently, the **Nuclear Non-Proliferation Treaty (NPT)** which came into force in 1970, marked its 50<sup>th</sup> anniversary.

### About NPT

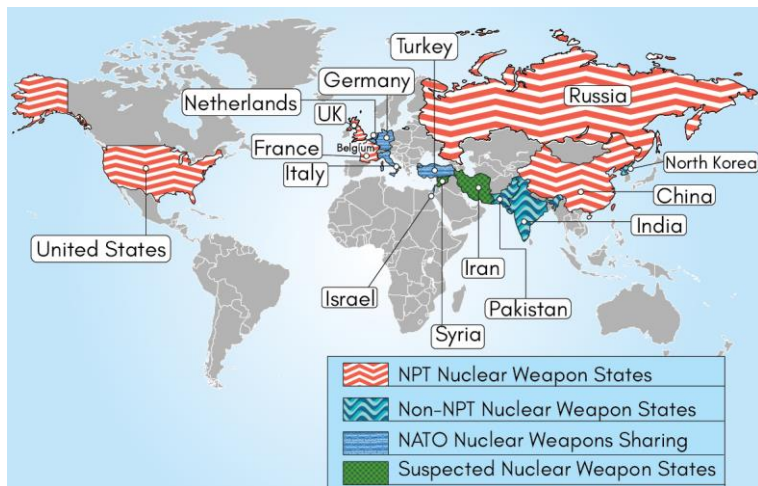
- **Objectives: To prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy** and to further the goal of **achieving nuclear disarmament** and general and **complete disarmament**.
- It is described as the **“cornerstone of global nuclear non-proliferation and disarmament”** and it is among the most widely-adhered-to global treaties.
- State funding of elections be considered only after some prerequisites, such as internal democracy in political parties and complete transparency in their financial affairs, are met.
- The Treaty represents the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon States.
- **India is a non-signatory to this treaty** and a total of **191 States have joined the Treaty**, including the five nuclear-weapon States.
- The treaty **defines nuclear-weapon states** as those that have built and tested a nuclear explosive device before **1 January 1967**; these are the United States, Russia, the United Kingdom, France, and China.
  - Four other states are known or believed to possess nuclear weapons: **India, Pakistan, Israel and North Korea**.
- **All countries** except the above four are **parties to the NPT**.
- NPT Review Conference is **held every five years** to review the operation of the treaty and consider means to strengthen it.

### About IAEA

- It was founded in 1957 **to promote nuclear cooperation** and the safe, secure and peaceful use of nuclear technologies.
- It is a specialized agency integrated within the United Nations system but through its own international treaty **“The Statute of the IAEA”**.
- It has **three main roles**:
  - furthering peaceful uses of nuclear energy in science, especially for the critical needs of developing countries;
  - promoting nuclear safety and security for nuclear and radioactive materials in civilian use;
  - verifying in more than 900 civilian facilities that nuclear materials are not used in making nuclear weapons.
- The IAEA is not a party to the treaty but under the NPT, the agency has specific roles as the international safeguards inspectorate and as a channel for transferring peaceful applications of nuclear technology.

## NPT: Milestones of Success

- **Dramatic reduction in the number of nuclear weapons of two cold era super powers:** From a peak of 70,300 warheads in 1986 to around 14,000 at present, with the US and Russia accounting for over 12,500.
- **Successfully prevented proliferation around the world:** Very few states have remained outside the treaty and have gone on to develop nuclear weapons.
  - Since 1970, only four countries have acquired nuclear weapons, bringing the total number of nuclear-weapon-states to nine.



- **Additional Protocol for detection:** This has created the right for inspectors to go to places where they suspect business. The treaty facilitates cooperation on peaceful applications of nuclear technology under the watch of the **International Atomic Energy Agency (IAEA)**.
  - It has helped make the nuclear inspections in the **Iran nuclear deal much more effective and in years ahead with North Korea.**
- **Creating nuclear weapon free zones:** Additionally, the states of many regions of the world have chosen to be part of nuclear-weapon-free zones in strong demonstration of their commitment to the objective of a world without nuclear weapons.

## Concerns remaining

- **Power with P5 members:** The five nuclear weapon states recognised by the NPT (N-5) are also the **five permanent members of the UN Security Council (P-5)**, giving rise to the inevitable conclusion that **nuclear weapons remain the currency of political and military power.**
- **Increasing investment for nuclear arsenal and emergence of new technologies:** New technologies and types of weapons — including offensive cyber, counter-space, and hypersonic weapons — could further destabilize the security environment.
  - **Russia** is increasingly relying on nuclear weapons with **new investments into various exotic nuclear capabilities.**
  - **China** has been updating its nuclear arsenal to keep pace not only with the United States and Russia, **but also as a part of its strategic competition with India.**
- **Unsettled international security environment:** U.S. withdrawal from the **Joint Comprehensive Plan of Action (JCPOA)**; Iran rebuilding its enrichment program and tensions escalating between Saudi Arabia- Iran; Turkey's aspirations of being nuclear power; U.S.-North Korea negotiations at a halt, may polarise nations to adopt the path of nuclear proliferation.
- **Non-compliance:** It is the most serious non-proliferation challenge facing the NPT. The failure of some non-nuclear-weapon state parties to the treaty to comply with the NPT's provisions and their safeguards obligations erodes confidence and undermines the goals of the treaty.
  - NPT has been unable to prevent non-signatories India, Israel, and Pakistan from crossing the nuclear threshold and to prevent former NPT signatory North Korea from becoming a nuclear-armed state.
- **Possession of weapon:** NPT does not forbid a non-weapon state from possessing nuclear weapons (It forbids the acquisition, but in theory country with weapons could sign the NPT as a non-weapon state and not give up weapons already made).
  - The treaty has no sanctions for violators or for withdrawal from the treaty.

## Way Ahead

- **More stakes on USA and Russia:** They could help themselves by agreeing to extend **New START to 2026** and launching in-depth strategic stability talks to cover nuclear weapons and the full range of associated issues. It would be useful to engage **China** in strategic stability discussions as well.
- **Adhering to the new Treaty on the prohibition of Nuclear Weapons adopted in 2017:** It will make a strong contribution to the **NPT's Article VI obligation** for states-parties to pursue nuclear disarmament.

## Conclusion

The achievements of NPT, show that the international community, states, and civil society can achieve goals when we agree and focus on a common purpose. However, the remaining challenges to the future of the NPT and the broader global non-proliferation regime needs to be addressed, given the deep reservoir of members' support for the treaty.

### India's stand on NPT

- India refused to join the treaty on the basis that it was a **discriminatory because of its grouping of countries**.
- India believes it is a **biased legal instrument** that divided the world into "nuclear haves" and "nuclear have-nots"
- India did not join the NPT as a non-nuclear weapon state since **nuclear weapons constitute an integral part of India's security**.
  - As, India, faced with **two nuclear neighbours** with one of them declaring its nuclear arsenal as India-specific, had to reluctantly become a nuclear weapon state.
  - Treaty also requires countries to give up any present or future plans to build nuclear weapons in return for access to peaceful uses of nuclear energy.
- India has been a **consistent advocate of global nuclear disarmament** since the inception of the concept in the United Nations.
- However, in spite of India not joining NPT, **India's unblemished record on non-proliferation** and its consistently responsible posture on nuclear weapons that enabled it to successfully conclude the **Indo-US nuclear deal in 2008** and to obtain a waiver from the guidelines of **the Nuclear Suppliers Group (NSG)**, enabling it to resume international cooperation in the nuclear domain and gain access to the international civil nuclear market.

## 2.4. INDIAN OCEAN COMMISSION

### Why in news?

India has become **observer** of Indian Ocean Commission.

### Indian Ocean Commission

- The Indian Ocean Commission (IOC) is an intergovernmental organization **created** by the Port-Louis Declaration **in 1982**.
- The IOC was **institutionalized** in Seychelles **in 1984** by the General Agreement for Cooperation, better known as the **Victoria Agreement**.
- **Composition-** IOC is the only regional organization in Africa composed exclusively of islands, which brings together **five-member states-**
  - The Union of the Comoros
  - Réunion (French overseas territory)
  - Madagascar
  - Mauritius
  - Seychelles
- **Observer members-** China, European Union, Malta, International organization of Francophonie (is an international organization representing countries and regions where French is a lingua franca or customary language), Japan, United Nations and India.
- **Mandate-** To strengthen the ties and to support its member states in the path towards sustainable development.

### Significance for India

- Western Indian Ocean (WIO) is a strategic part of the Indian Ocean linking

### Other regional groupings of the Indian Ocean region

#### The Indian Ocean Rim Association (IORA)

- It is an **inter-governmental organisation** aimed at strengthening regional cooperation and sustainable development within the Indian Ocean region through its 22 Member States and 9 Dialogue Partners.
- It was formed in 1997 and its secretariat is in Mauritius.
- The **members include** Australia, Bangladesh, Comoros, **India**, Indonesia, Iran, Kenya, Madagascar, Malaysia, Mauritius, Mozambique, Oman, Seychelles, Singapore, Somalia, South Africa, Sri Lanka, Tanzania, Thailand, United Arab Emirates, Maldives and Yemen.
- The major priorities & focus areas include: Fisheries Management, Blue Economy, Women's Economic Empowerment, Maritime Safety & Security etc.

#### The Indian Ocean Naval Symposium (IONS)

- IONS is a voluntary initiative that seeks to increase **maritime co-operation among navies of the littoral states** of the Indian Ocean Region by providing an **open and inclusive forum** for discussion of regionally relevant maritime issues.
- It has **24 member states (including India)** and **8 observers**. It was launched in 2008.
- Promote dialogue on **humanitarian assistance and disaster relief**, maritime security and information sharing and interoperability.



the South eastern coast of Africa to the wider Indian Ocean and beyond. It is home to one of the key chokepoints in the Indian Ocean- the Mozambique Channel.

- India will get an **official voice in the premier regional institution** in the Western Indian Ocean, boosting engagement with islands in this part of the Indian Ocean. These island nations are increasingly important for **India's strategic outreach** as part of its **Indo-Pacific policy**.
- It is also recognition of India's **growing capability and intent as a first responder** for crisis in this region. E.g. During floods in Madagascar in January, 2020 India sent the **INS Airavat** with relief supplies to the country.
- **With China's growing presence** in the region, this will embolden India's position to **increase its naval presence** and gain support for its **maritime projects** across the Indo-Pacific.
- This move will lead to **greater security cooperation** with countries in East Africa. It lends depth to India's **SAGAR** (security and growth for all in the region) policy unveiled in 2015.
- **Enhance engagement with France** which is the strong global power in the Western Indian Ocean.

#### Security and Growth for All in the Region (SAGAR)

- SAGAR phrase was coined by Indian Prime Minister in 2015 during his Mauritius visit.
- It involves **enhancing capacities to safeguard land and maritime territories & interests**; deepening economic and security cooperation in the littoral; action to deal with natural disasters and maritime threats like piracy, terrorism.



# फाउंडेशन कोर्स सामान्य अध्ययन प्रारंभिक एवं मुख्य परीक्षा 2021

## इनोवेटिव क्लासरूम प्रोग्राम

- प्रारंभिक परीक्षा, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक का विस्तृत कवरेज
- मौलिक अवधारणाओं की समझ के विकास एवं विश्लेषणात्मक क्षमता निर्माण पर विशेष ध्यान
- एनीमेशन, पॉवर प्वाइंट, वीडियो जैसी तकनीकी सुविधाओं का प्रयोग
- अंतर - विषयक समझ विकसित करने का प्रयास
- योजनाबद्ध तैयारी हेतु करेंट ओरिएंटेड अप्रोच
- नियमित क्लास टेस्ट एवं व्यक्तिगत मूल्यांकन
- सीसेट कक्षाएं
- PT 365 कक्षाएं
- MAINS 365 कक्षाएं
- PT टेस्ट सीरीज
- मुख्य परीक्षा टेस्ट सीरीज
- निबंध टेस्ट सीरीज
- सीसेट टेस्ट सीरीज
- निबंध लेखन - शैली की कक्षाएं
- करेंट अफेयर्स मैगजीन

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## 3. ECONOMY

### 3.1. ECONOMIC IMPACT OF COVID-19

Economic Impact of COVID-19	
Microeconomic impacts	Macroeconomic impacts
<p>It is the study of the behaviour of individual economic agents (individuals and businesses) in the markets for different goods and services and how these affect different market variables i.e.</p> <ul style="list-style-type: none"> <li>• <b>Demand</b> <ul style="list-style-type: none"> <li>○ <b>Of essentials:</b> Stockpiling of essential commodities like rice, lintels etc. was noticed.</li> <li>○ However, after about 10 days of lockdown, demand for vegetables, fruits dropped by 60% as bulk buyers &amp; restaurants stayed away.</li> <li>○ Electricity, Diesel and Petrol demand fell 9.2%, 26% and 17% respectively in March.</li> <li>○ <b>Of non-essential goods:</b> out-of-home, impulse consumption in sectors like electronics, jewellery etc. is <b>crashing</b>.</li> <li>○ <b>Global demand</b> has also weakened</li> </ul> </li> <li>• <b>Supply:</b> Restrictions have <b>affected the supply chains of big companies</b> and only the <b>bare essential is produced</b> and distributed.           <ul style="list-style-type: none"> <li>○ <b>Supply of agri-produce has been affected</b> because of no or little activity in Mandis, reduced labour, transportation problems and farmers' own reluctance, leading to low wholesale prices.</li> <li>○ E-tailers are struggling to get permits.</li> </ul> </li> <li>• <b>Price:</b> because of rapid changes in market conditions, prices have been very volatile. Overall, there has been a <b>steep drop in commodity prices</b> in emerging markets.</li> <li>• <b>Individual expenditure:</b> As per Axis Capital research, discretionary spending in India may take a hit of Rs. 3.3 lakh crore per month.</li> <li>• <b>Individual investment:</b> Investment outlook stands weak as per CMIE database. There is a 2% decline in new projects announced in March quarter as compared to last year.</li> <li>• <b>Market response:</b> the panicked market is rushing for an exit which is evident in the form of <b>diving stock markets</b>.</li> <li>• <b>Microeconomic effects of government policy:</b> as economic activity declines, so will taxes leading to greater fiscal deficit.           <ul style="list-style-type: none"> <li>○ <b>Direct taxes</b> cannot be raised since profits and incomes are already badly hit.</li> <li>○ <b>Indirect taxes</b> will be inflationary and further burden the poor and reduce demand.</li> <li>○ <b>Non-tax revenue</b>, too, cannot be expected to contribute more since the public sector is also under stress.</li> <li>○ <b>Disinvestment targets</b> of government to raise non-tax revenue are unlikely to be successful as well.</li> <li>○ So, government is increasingly using <b>Government Securities (G-secs) and some underused funds</b> for resource mobilization.</li> <li>○ Meanwhile, <b>yield differential</b> (Differences in the yields of different securities) between Central and State government bonds has increased from 70 basis points (bp) to 170 bp, because investors are only seeking <b>pure</b></li> </ul> </li> </ul>	<p>It is concerned with large-scale or general economic factors and is determined on the basis of 4 parameters i.e.</p> <ul style="list-style-type: none"> <li>• <b>Balance of payment:</b> <ul style="list-style-type: none"> <li>○ <b>Current account:</b> Lower crude oil prices, slowdown in gold and other imports can reduce trade deficit. However, overseas remittances (mainly from West Asia) will also reduce. Export sector is facing over 50% cancellation due to global lockdown</li> <li>○ <b>Capital account:</b> Foreign investors pulled out \$14-15 billion from Indian debt and equity markets in March. As per RBI data, forex reserves increased during last week (March 21-27), mainly because of increased gold prices (decreased earlier).</li> </ul> </li> <li>• <b>Inflation:</b> The RBI has forecasted <b>inflation to collapse to 2.4% in the fourth quarter of FY21</b> amid a pronounced slump in demand. Reasons are:           <ul style="list-style-type: none"> <li>○ Fall in demand because of reduced profits and income.</li> <li>○ Distress in rural economy.</li> </ul> </li> <li>• <b>Economic Growth:</b> <ul style="list-style-type: none"> <li>○ IMF has confirmed that world's economy is in recession that will be worse than 2009.               <ul style="list-style-type: none"> <li>✓ As per <b>World Bank</b>, India's growth rate may slip to <b>1.5-2.8% in FY21</b>, slowest since economic reforms in 1991.</li> <li>✓ However, <b>UNCTAD has kept India, along with China, as exception</b> in world recession (without giving any detailed explanation).</li> </ul> </li> <li>○ Value of stalled projects has reached record-highs of around Rs. 14 trillion till Mar 2020. This may <b>further deteriorate the asset quality of banking sector</b>.</li> <li>○ Services PMI (Purchasing Managers Index) fell to 49.3 in March after rising for 5 consecutive months.</li> </ul> </li> <li>• <b>Unemployment:</b> <ul style="list-style-type: none"> <li>○ As per latest (<b>Centre for Monitoring India Economy</b>) <b>CMIE survey</b>, labour participation rate fell to 39% in April.</li> <li>○ CMIE's estimates on <b>unemployment rate</b> shot up from 8.4% in mid-March to 23.8% post lockdown.</li> <li>○ According to <b>ILO report</b>, COVID-19 crisis has the potential to push around 40 crore informal sector workers in India deeper into poverty by affecting jobs/working hours and earnings.</li> </ul> </li> </ul>

sovereign backed funds amid rising pandemic related uncertainties.

- **Recently IMF** said that over 170 countries will experience negative per capita income growth this year.

### Government and Regulatory Response

Objectives	Steps taken
<ul style="list-style-type: none"> <li>• Facilitate domestic <b>supply of essential goods</b> and services</li> <li>• <b>Ease liquidity</b> to spur demand and investments</li> <li>• <b>Help rural economy</b> including farming community to tackle the economic distress</li> <li>• <b>Plug production losses</b> and prevent spill over effects onto corporate balance sheets (more defaults) and the labour market (job losses)</li> <li>• <b>Address trade and supply chain disruptions</b> especially for firms dependent on foreign supplies</li> <li>• <b>Credit ratings</b> should not fall</li> <li>• <b>Financial intermediaries</b> should remain competitive and asset quality should not deteriorate</li> <li>• Enhanced <b>investor participation</b> in Indian markets and <b>improve confidence in State bonds</b> so as to reduce bond yields</li> <li>• <b>Stabilise the rupee</b> as if rupee continues to weaken, firms dependent on foreign loans could struggle</li> <li>• Reduce/<b>manage fiscal deficit</b></li> <li>• <b>Maintain exports</b> to key trading partners such as the EU</li> </ul>	<ul style="list-style-type: none"> <li>• Economic relief package worth 1.7 lakh crore in the form of <b>PM Garib Kalyan Yojana</b> has been announced. It is likely to induce liquidity and spur demand and reduce distress in both formal and informal sectors.</li> <li>• <b>Relief to exporters:</b> <ul style="list-style-type: none"> <li>○ India has urged the countries, with which it has free trade agreements (FTAs), to allow imports of goods without <b>certificate of origin</b> temporarily. An online portal has also been launched recently to ease the process.</li> <li>○ <b>Export promotion schemes:</b> Remission of Duties and Taxes on Exported Products (RoDTEP) has been approved and India has appealed against a WTO ruling that prohibited export related subsidies.</li> <li>○ Export restriction of some pharmaceutical APIs has also been relaxed.</li> </ul> </li> <li>• Ministry of Home Affairs has asked states to <b>allow transportation of all goods</b> without making a distinction of essential and non-essential during lockdown.</li> <li>• <b>Farmers:</b> <ul style="list-style-type: none"> <li>○ Shops related to truck repairs, agricultural machinery and its spare parts can remain open to facilitate transportation of farm produce.</li> <li>○ The tea industry, including plantations, can also function with a maximum of 50% workers.</li> <li>○ States have been advised to issue direct marketing licenses to corporates/ food processing firms to enable them to buy raw food items from farmers directly so that crowds at mandis are controlled.</li> <li>○ <b>Centre has</b> asked states to relax some provisions of Agriculture Produce Market Committee (<b>APMC Acts</b>) to allow farmers to sell their harvest from multiple locations and to any buyer.</li> <li>○ New features of <b>National Agriculture Market (e-NAM) Platform</b> were announced to reduce farmer's need to physically come to wholesale mandis for selling their harvested produce.</li> </ul> </li> <li>• <b>Banking sector:</b> <ul style="list-style-type: none"> <li>○ No minimum bank balance and no charges on withdrawal from ATMs and reduced charges for digital transactions.</li> <li>○ <b>RBI asked Banks and other financial institutions</b> to assess impact on their balance sheets, asset quality, liquidity and to promote digital banking among customers.</li> <li>○ <b>Emergency Credit Lines</b> are being extended by some PSBs at concessional terms to borrowers whose operations are hit by the coronavirus pandemic.</li> <li>○ <b>Recapitalization of Regional Rural Banks (RRBs)</b> by providing minimum regulatory capital up to 2020-21 to maintain minimum Capital to Risk weighted Assets Ratio (CRAR) of 9% has also been approved.</li> <li>○ RBI deferred the implementation of the <b>Capital Conservation Buffer (CCB) by a year</b>, that would leave about estimated Rs 37,000 crore capital in the hands of banks, easing lending by banks.</li> </ul> </li> <li>• <b>Corporate sector:</b> Extensions on taxation related matters to ease regulatory compliance burden, threshold of default has been increased from 1 lakh to 1 crore under I&amp;BC and relaxations has been given to companies related to mandatory board meetings, creation of deposit reserve etc. FPI limit for corporate bonds has been raised to 15% from earlier 9%.</li> <li>• <b>Invest India business immunity platform</b> has been launched to help businesses and investors get real-time updates on various central and state government initiatives related to COVID-19.</li> <li>• MHA has asked States/UTs to take <b>steps to support migrant workers</b> like enabling PDS for them, involving NGOs to provide food and shelter and to ensure that students and working women from other states continue in existing accommodation.</li> <li>• <b>PM CARES Fund launched</b> to raise resources to tackle COVID19</li> </ul>

- **Ministry of Corporate Affairs (MCA)** has said spending of CSR funds for promoting preventive care healthcare infrastructure and disaster management for COVID-19 would be treated as eligible CSR activity.
- **States have been allowed to cumulatively borrow up to Rs 3.2 lakh crore** (individual limits notified for States) from open market during Apr-Dec 2020 to give them more fiscal space.
- India declared **COVID19 as “notified disaster”** for purpose of providing assistance under **State Disaster Response Fund**.
- **Major steps taken by RBI to infuse liquidity:**
  - Conducting a **sell/buy swap auction** worth \$2 billion to arrest depreciation of Rupee.
  - RBI announced **Open Market Operations** to the tune of Rs. 10000 crores by buying government securities of 2-5-year tenors.
  - Adopting **easy money policy by loosening policy rates** such as repo rate (75 bp), reverse repo rate (90bp), MSF and CRR (100bp). This has also **widened the monetary policy rate corridor** that will make it attractive for banks to lend rather than to keep money with central bank (**reduction in Reverse RR is larger than RR**).
  - **Moratorium of 3 months on loan repayments** (during March 1 to May 31) on all term loans including home/ car/ working capital loans.
  - **Targeted Long-term repo operations (TLTROs)**- under this, RBI conducts auctions of term repos of up to three years’ tenure for a maximum Rs 1 lakh crore at a floating rate linked to repo rate. This liquidity is deployed in investment-grade corporate bonds, commercial papers and non-convertible debentures.
  - **Rupee volatility:** allowed banks to deal in off-shore non-deliverable forward Rupee derivative markets from Jun 1.
  - **Fully accessible route (FAR)** has been introduced as a separate route, to issue certain series of (or special) government securities (G-secs) which will attract no foreign portfolio investor (FPI) limits until maturity (overall FPI limit in G-secs is 6% presently, which may also be revised soon)
  - **Ways and Means Advances (WMA) limit has been raised** by 30% for all states and UTs. (WMA facility enables government to take temporary short-term loans from RBI). RBI constituted an **Advisory Committee under Sudhir Shrivastava** to review the Ways and Means limits.

### Way Forward

The socio-economic costs of lockdown and resulting disruption of value chains and reverse migration of informal labour have yet to be reckoned with. But the worst may be yet to come as Indian businesses deal with the twin shocks of a health crisis and a global recession. So, the complexity of the situation—and its severity—calls for massive coordinated action and a strategic approach.

- **Businesses:**
  - In this disruptive time, a **business can improve its market share by efficient management of supply chains** like diversifying suppliers to avoid supply shocks, setting up control centre and proactive collaboration with suppliers, making inventory visible online, enabling pre-ordering, end-to-end sanitization, enabling work-from-home etc.
  - **Tax write backs** and interest free loans, particularly for small and medium enterprises can be announced.
- **Financial institutions:** IMF has estimated that emerging markets with limited domestic resources will need \$2.5 trillion to deal with the crisis.
  - **Non-Banking Finance Companies (NBFCs):** they are facing twin challenges of debt repayment and cash shortage because of risk-averse nature of Banks and difficulty in managing cash flows. So, access to additional bank lines/credit is needed.
  - **Banking:** risk aversion of Banks is likely to go up with rising NPAs. So, macro-prudential steps such as **lowering the counter-cyclical capital buffer for banks** could be announced.
  - **International financial institutions:** UNCTAD has cautioned that even while liquidity injections are critical, a wide-spread developing country debt crisis need to be avoided through measures like temporary standstills, debt relief programmes etc. It also argued for a **Marshall Plan for Health Recovery** by stating that donor countries should honor their collective commitment of providing 0.7% (of global national income) as Official Development Assistance (ODA) to developing countries.
- **Socio-economic welfare measures:** **Individual expenditure or consumption expenditure** would play an important role in reviving the growth in the economy.

- Relief package under PMGKY is just 0.9% of India's GDP as compared to USA's over 10%. Recently, **UN in its report on responding to COVID-19, has recommended a** double-digit percentage points stimulus package for the most vulnerable along with support to small- and medium-sized enterprises, decent work and education.
- **Reverse migration of informal labourers** witnessed recently should be dealt by improving rural infrastructure and focusing on light industries, especially in food processing (around 40% of fruits and vegetables produced get wasted).
- Recently, **International Labour Organisation (ILO) has recommended** to encourage flexible working arrangements, paid leave and access to quality emergency childcare. It also argued for consultations and collaboration among governments, workers and employers and their representatives.

**Note – We will be covering Post-Lockdown strategy and Global Impact/Geo-political implications in detail in April Current Affairs.**

## 3.2. TASK FORCE ON SUSTAINABLE PUBLIC PROCUREMENT (SPP)

### Why in news?

A Task Force on Sustainable Public Procurement (SPP) has been constituted by Department of Expenditure.

### The terms of reference for the Task Force:

- **Review international best practices** in the area of SPP
- **List the current status of SPP** in India across Government organizations
- Prepare a draft Sustainable Procurement Action Plan
- Recommend an initial set of product/service categories (along with their specifications) where SPP can be implemented

### Sustainable Public Procurement

- Sustainable Public Procurement is a process by which **public authorities seek to achieve** the appropriate balance between the **three pillars of sustainable development - economic, social and environmental** - when procuring goods, services or works at all stages of the project.
  - By promoting and using SPP, public authorities can provide industry with real incentives for developing green materials, technologies and products.
- In recent decades, governments across the world have become increasingly conscious about the adverse and undesirable impact of their purchases on society and environment, and are adopting SPP practices facilitated by legal reforms and policy guidelines.

### Objectives of SPP:

- **Reducing adverse environmental and social impacts** as a result of procurement decision.
- **Reducing air & water pollution** and waste generation.
- **Promoting health and safety** in communities
- Creating employment and business opportunities **for disadvantaged group, MSEs and local industries**
- Encouraging suppliers to foster a **commitment to local communities**.
- Encourage industry to prepare for **future clean and green market scenario**.

### Sustainable public procurement and India

- Currently, in India, there is no public procurement law at the national level. However, some public sector entities and government departments have started internalizing environmental and energy efficiency criteria in their procurement decisions.
- **Draft Public Procurement Bill-2012**, stated that procurement evaluation criteria may include the characteristics of the subject matter of procurement, such as the functional characteristics of goods or **works and the environmental characteristics of the subject matter**.
- Also, Thirteenth Finance Commission emphasized the need for incentivizing growth of India with lower environmental and resource footprint. In this respect, SPP is a necessary tool for fulfilling the stated commitment of the country towards a green and inclusive growth.
- The draft National Resource Efficiency Policy 2019 emphasizes on SSP as an action agenda.

## Challenges in implementing SPP

- **Lack of capacity and proper legal framework:** Procurement officials are often risk averse and could be hesitant to implement sustainable procurement without a clear legitimization and policy direction.
- **Consumers' consumption behavior:** Implementation of SPP, in practice, requires a change in consumers' attitude towards the sustainable consumption of products and services.
  - UJALA programme is successful because consumers understood the benefits of using LED.
- **Best value for money:** Unless there is explicit provision for considering the financial gains of environmental alternatives (though improved durability and lower operating costs) over the lifetime of a product, service or development, decisions will continue to be based on upfront costs and immediate benefits.
- **Production process-related elements in SPP:** Procurers have to draw a distinction between the environmental impact of a product and those linked to the process in which it is produced.
- **SPP can prevent the market proliferation of sustainable alternatives:** If SPP-demand for product A results in an increase to its retail price, this will discourage other purchasers from selecting it, who will then end up buying a less environmentally-preferable alternative.

## Way forward

In India, 30% of the GDP per annum is spent on public procurement. Given the massive size of public spending, public sector in India can be a prime driver towards sustainable production and consumption and can create environmental and economic benefits. For this-

- National policy on SPP with well-defined complementary actions, such as identifying priority areas, enhancing capacity and running awareness campaigns should be formulated at earliest.
- There is a need to convince various stakeholders such as policy-makers, suppliers, procurement officials and general public that sustainable goods are beneficial over a long-term.

## 3.3. CONSOLIDATION OF PUBLIC SECTOR BANKS

### Why in news?

Government has approved the amalgamation of ten Public Sector Banks (PSBs). At present, India has 18 state-owned banks compared with 27 in 2017. After the merger, the number will further come down to 12.

### Benefits of Bank Consolidation

- **Cost benefits** as larger banks offer better economies of scale, efficiency, cost of funding, risk diversification.
- **Revenue benefits** (economies and scope for large deals): **Banks' prudential norms limit the size of lending by banks as** banks take risks as per banks' size. Hence to invest in large projects, large banks with huge lending capacity are needed, to meet India's aspirations of a \$5 trillion GDP economy.
- The **adoption of technologies** across the amalgamating banks, access to a wider talent pool, and a larger database would lead PSB's to be in a position to gain **competitive advantage by leveraging analytics in a rapidly digitalising banking landscape**.
- Consolidation would help create banks with **scale comparable to global banks** and capable of competing effectively in India and globally enhancing their **competitiveness**.
- **Customer service:** Larger size of the Bank will help the merged banks to offer more products and services and help in integrated growth of the Banking sector.
- **Human Resource:** The wide disparities between the staff of various banks in their service conditions and monetary benefits will narrow down.
- **Improve regulation:** Monitoring and control of a smaller number of banks will be easier after mergers.

### Issues with Bank consolidation

- **Too big to fail:** When a big bank books huge loss or crumbles, there will be a big jolt in the entire banking industry. Its repercussions will be felt everywhere.
  - In fact, large global banks collapsed during the global financial crisis, while, small banks have survived the crisis due to their nimbleness and the niche areas they operate in.
- **May impact recovery of loans:** Merger of public sector banks raises a **considerable risk to the recovery process, which may differ from one bank to another**. In the case of stressed assets, the creditors' pool could

be common, which may include several of the merged public sector banks while their hierarchy in the list of creditors would vary.

- **Banks having different setup:** It brings with it issues not only of cultural and managerial alterations, but also various financial conflicts, that could affect lending as well as recovery. Conflicts might arise in the area of systems and processes too.
- **Not necessarily beneficial:** A study covering 20 years of bank consolidation in industrial countries found it “**beneficial up to a relatively small size**, but there is little evidence that mergers yield economies of scope, or gains in managerial efficiency”. **India’s past experience too has been mixed so far.**

#### Way Forward

- While **Narasimham Committee (1998)** on banking reforms had also recommended the merger of strong public sector banks and selective closure of weak ones, bank merger alone does not improve performance matrix. The **reform has to go hand in hand with other reform measures**. E.g. **EASE Index** which ranks PSBs on parameters such as responsible banking, financial inclusion, credit offtake and digitization.
- Also, to address issues arising during transition phase, it is necessary that resources be dedicated towards engaging competent teams to oversee and resolve issues arising out of such a transition phase.
- Consolidation should be done as **per requirements** to promote efficiency and competitiveness rather than just to merge under-performing banks with better performing ones.

### 3.4. BASEL III NORMS

#### Why in news?

Implementation of Basel-III were deferred by a year to January 2023, due to Covid-19 pandemic.

#### The Basel III accord

- **Basel III accord** is a set of **financial reforms** that was developed by the **Basel Committee on Banking Supervision (BCBS)**, with the aim of **strengthening regulation, supervision, and risk management** within the banking industry.
- Due to the impact of the **2008 Global Financial Crisis on banks**, Basel III was introduced to improve the banks’ ability to handle shocks from financial stress and to strengthen their transparency and disclosure.
- **Basel III norms were finalised in 2017**. Its implementation date has been postponed several times.
- The guidelines focus on four banking parameters: **capital, leverage, funding and liquidity**.
- **Basel-III norms:**
  - **Minimum capital requirements** for banks is 4.5% of common equity, as a percentage of the bank’s risk-weighted assets. (Currently 2% under Basel II).
  - **Leverage Ratio:** It is ratio of **Tier 1 capital by the average total consolidated assets of a bank**. Under this, banks are required to hold a leverage ratio in excess of 3%. It was introduced under Basel-III.
  - Basel III introduced two liquidity ratios. **Liquidity Coverage Ratio and the Net Stable Funding Ratio**.
    - ✓ The Liquidity Coverage Ratio requires banks to hold sufficient highly liquid assets that can withstand a 30-day stressed funding scenario as specified by the supervisors.
    - ✓ **Net Stable Funding Ratio (NSFR)** requires banks to maintain stable funding above the required amount of stable funding for a period of one year of extended stress.

#### About BASEL norms

- **Basel Committee on Banking Supervision** is an international committee formed in 1974 to develop standards for banking regulation.
- It consists of central bankers from 27 countries and the European Union. It is headquartered in the office of Bank for International Settlements (BIS) in Basel, Switzerland.
- It developed a **series of policy recommendations known as Basel Accords (Basel I Basel II and Basel III)**, which suggested minimum capital requirements to keep bank solvent during the times of financial stress.

### 3.5. MINERAL LAWS (AMENDMENT) BILL, 2020

#### Why in news?

Parliament recently passed The Mineral Laws (Amendment) Bill, 2020 for amendments in **Mines & Mineral (Development and Regulation) Act 1957** and **The Coal Mines (Special Provisions) Act, 2015**.

## Key Provisions

- **Composite license for prospecting and mining:** A new type of license, called prospecting license-cum-mining lease has been introduced.
  - Currently, separate licenses are provided for prospecting and mining of coal and lignite, called prospecting license, and mining lease, respectively. Prospecting includes exploring, locating, or finding mineral deposit.
  - The new type of license will be a composite license providing for both prospecting and mining activities.
- **Removal of restriction on end-use of coal:** Companies will be free to use extracted mineral both for captive use of end use plants (power, steel, cement etc.) and commercial sale in the open market.
- **Eligibility criteria for auction of coal and lignite blocks:** The companies which do not possess any prior coal mining experience in India but are financially strong and or have mining experience in other minerals or in other countries can now participate in auction of coal/lignite blocks
- **Reallocation after termination of the allocations:** Such mines may be reallocated through auction or allotment as may be determined by the central government. The central government will appoint a designated custodian to manage these mines until they are reallocated.
- **Prior approval of the central government is not required in granting of reconnaissance permit, prospecting license or mining lease in respect of the minerals, in certain cases:** These cases are-
  - an allocation order has been issued by the Central Government.
  - a notification of reservation of area has been issued by the Central Government or the State Government.
- **Advance action for auction:** State Governments have been allowed for taking an advance action for auction of the mining lease before the expiry of the lease period.
- **Transfer of statutory clearances to new bidders:** The various approvals, licenses, and clearances given to the previous lessee will be extended to the successful bidder for a period of two years.

### Related Information

- The MMDR Act regulates the overall mining sector in India.
- The CMSP Act provides for the auction and allocation of mines whose allocation was cancelled by the Supreme Court in 2014.

## Benefits

- **Broadening the playing field:** The act will enable companies, which do not have any mining experience or which are not engaged in a specified end-use, to make bids in auctions alongside the established players in the market.
- **Decrease in coal Imports:** The effective mining sector will lead India to use its own natural reserves, instead of importing coal.
- **Efficient process of allocation:** A bidding company may now bid for a prospecting licence-cum-mining lease for coal and lignite as well, thereby streamlining the process of allocation.
- **Removal of Superfluous Approvals:** Several approvals carried out by the Central Government at various stages in turn resulted in delays and repetition of the approval process.
- **Smoother Transitions:** Certain provisions have been introduced in the MMDR Act which will facilitate easy transfer of mining operations by the competent authority from one allottee to another.
- **Attracting Investment:** Companies having mining experience in other countries can now participate in auction of coal/lignite blocks.
- **Promoting Ease of Doing Business:** The act deregulates the mining sector and clearly focuses on making it more profitable.

## Issues

- **Dilution of Eligibility Criteria:** Mining sector is a very specific sector which requires expertise and by removing prior experience restriction the evaluation of bidders will become difficult.
- **Natural resources can be misused:** With removal of the end use restriction along with allowing 100% FDI can result in misuse by foreign players.
- **Could be detrimental for Environment:** Increasing usage of coal for energy or for manufacturing of power and over mining may result in environment degradation. Polluter's pay principle is also missing.
- **Future of Coal India Ltd. is in doubt:** Opening up of the sector for private players may end monopoly of Coal India and government may lose its strategic asset.



## Way forward

- Government should take measures to reduce import so that increased domestic production does not lead to increase in coal usage. Companies involved in auctions should be thoroughly evaluated prior to the auction.
- Coal use and production should be gradually decreased for a sustainable and greener growth.

## 3.6. ELECTRONICS MANUFACTURING

### Why in news?

Recently, Union Cabinet has approved three schemes for electronics sector namely:

- A production-linked incentive manufacturing scheme.
- Scheme for Promotion of manufacturing of Electronic Components and Semiconductors (SPECS).
- Electronics Manufacturing Clusters (EMC) 2.0.

### About the Schemes

- **Production-linked incentive manufacturing scheme**
  - It aims to **boost domestic production** and attract investment in mobile phone manufacturing, specified electronic components, including **assembly, testing, marking and packaging (ATMP)** units.
  - It shall extend **an incentive of 4% to 6%** on incremental sales (over base year) of goods manufactured in India and covered under target segments, to eligible companies, for a **period of five years** subsequent to the base year as defined.
  - As a result, the **domestic value addition for mobile phones** is expected to witness 35- 40% jump by 2025 from 20-25% now.
- **Scheme for Promotion of manufacturing of Electronic Components and Semiconductors (SPECS)**
  - It offers **financial incentive of 25% of capital expenditure** for the manufacturing of goods that constitute the supply chain of an **electronic product**.
  - The scheme is the successor of earlier incentive scheme namely **Modified Incentive Special Package Scheme (M-SIPS)**.
    - ✓ In order to compensate for disadvantages in domestic manufacturing, M-SIPS was launched which provides for **capital subsidy of 25% for Electronics Industry** located in non-SEZ area and 20% for those in SEZ areas.
  - The incentives will be **available for investment made within 5 years** from the date of acknowledgement of application.
  - The scheme is expected to bring **new investments** in Electronics Sector to the tune of at least **Rs. 20,000 crore**.
- **Electronics Manufacturing Clusters (EMC) 2.0.**
  - The Modified Electronics Manufacturing Clusters (EMC 2.0) Scheme would support setting up of both **Electronics Manufacturing Clusters (EMCs)** and **Common Facility Centers (CFCs)**.

#### National Policy on Electronics 2019

- Policy envisions positioning **India as a global hub** for Electronics System Design and Manufacturing (ESDM).
- It replaces the National Policy of Electronics 2012 (NPE 2012).

#### Salient Features of the Policy

- Create eco-system for globally competitive ESDM sector
- Provide incentives and support for manufacturing of core electronic components.
- Provide special package of incentives for mega projects which are extremely high-tech and entail huge investments, such as semiconductor facilities display fabrication, etc.
- Promote Industry-led R&D and innovation in all sub-sectors of electronics, including grass root level innovations and early stage Start-ups in emerging technology areas such as 5G, IoT/ Sensors, Artificial Intelligence (AI) etc.
- Provide incentives and support for significantly enhancing availability of skilled manpower, including re-skilling.
- Create Sovereign Patent Fund (SPF) to promote the development and acquisition of IPs in ESDM sector.
- Promote trusted electronics value chain initiatives to improve national cyber security profile.

#### Electronic Manufacturing Clusters (EMC)

- The scheme was created in 2012 with an objective to build and create requisite **infrastructure ecosystem for electronics manufacturing**.
- Under EMC scheme, 20 Greenfield EMCs and 3 Common Facility Centres (CFCs) have been approved across 15 states of the country.

- The scheme will provide **financial assistance up to 50% of the project cost** subject to ceiling of ₹70 crore per 100 acres of land for setting up of Electronics Manufacturing Cluster projects. For Common Facility Centre (CFC), financial assistance of 75% of the project cost subject to a ceiling of ₹75 crore will be provided.
- The schemes collectively are expected to attract **new investments worth at least ₹50,000 crore** in the sector, while generating more than **five lakh direct and 15 lakh indirect jobs**.

#### Need to boost electronics manufacturing

- **Target NET ZERO imports:** Electronics goods weigh heavily on the country's trade deficit and are one of the top three items imported in India.
- **Rapidly increasing demand:** Demand for electronic goods is increasing with a **Compound Annual Growth Rate (CAGR) of 22%** and is expected to touch 400 Billion USD by 2020.
- **Digital security:** Domestic manufacturing is essential for securing data which has implications both for privacy and national security.
- **Complement other schemes:** Domestic manufacturing plays a key role in boosting initiatives like BharatNet, Smart cities, National Knowledge Network (NKN) and also give a fillip to **'Make in India.'**

#### Status of Electronics Manufacturing in India

- India's electronics **production has increased** from Rs. 1.9 lakh crore in 2014-15 to Rs. 4.6 lakh crore in 2018-19, at a **CAGR of about 25%**.
- **India's share** in global electronics manufacturing grew from 1.3% (2012) to **3.0% (2018)**.
- The sector accounts for about **2.3% of India's GDP**.

#### Challenges to the sector

- **Unavailability of affordable credit:** Schemes like Electronic Development Fund (EDF) which aimed to increase availability of credit have not completely fructified.
  - **EDF** was set up as a **"Fund of Funds"** to participate in professionally managed "Daughter Funds" which in turn provided risk capital to companies developing new technologies in the area of electronics.
- **Product Standard:** There are gaps between global product standards and those manufactured in India.
- **Ancillary Infrastructure:** Outside the factory, infrastructure bottlenecks such as logistics, port capabilities etc. continue to trouble manufacturers.
- **Productivity Gap:** Prevalent skill gap in population translates to productivity gap in production cycle.

#### Way forward

In pursuance of National Policy on Electronics, 2019, these three schemes collectively aim to resolve aforesaid challenges by improving infrastructure (EMC 2.0), easing the credit flow (Production incentive scheme) and encouraging capacity expansion (SPECS).

These steps can be complemented by steps like Reviving and revising schemes like the Electronic Development Fund (EDF) to increase credit availability, considering industry demands like **waiver of collateral on loans** taken to setup **machinery** among others.

### 3.7. TAXING GLOBAL TECHNOLOGY COMPANIES

#### Why in news?

The government has expanded the scope of equalization levy to all overseas e-commerce transactions originating from India in the amended Finance Bill 2020.

#### More about news

- India will levy an **equalisation levy of 2% on sales** made by foreign e-commerce companies in the country. This will impact those companies that **don't have a base in India**, but sell their goods here.
  - Equalisation Levy is a **direct tax**, which is withheld at the time of payment by the service recipient

#### Taxing technology companies: A background

- In Finance Act, 2016, Government introduced an **"equalisation levy"** on certain non-resident businesses.
  - It was applied at a rate of 6% on **certain "specified services"**—such as online advertisement etc.
- In budget 2018, the government had proposed to get its fair share of tax from business-to-consumer transactions by introducing the concept of **Significant Economic Presence**.
  - The idea was to tax profits of those digital businesses that don't have a physical presence in India but **derive significant economic value from the country**.
  - In this year's budget, it was announced that SEP provisions have been **deferred to April 1, 2021**.

- The levy would be imposed on those companies that have a turnover or sales of **over Rs 2 crore in the previous year**
  - Also, the **compliance of the levy** has been **shifted** to the non-resident service provider.
- Now, expanded scope **stretches beyond goods and services** supplied to Indian residents and includes supplies to **any person using an Indian Internet Protocol (IP) address**.
  - For example, a foreign citizen availing services, whilst visiting India and using the Indian IP address is also covered.

#### Need for such rules

- **Uniqueness of digital e-commerce model**
  - Under the traditional model, an **MNC** is liable to pay tax in the jurisdiction of its' **Permanent Establishment** or the jurisdiction where the source of income exists.
  - However, digital service sectors derive the income from users located in different jurisdictions, and in most cases, these lack a physical presence in countries where customers are located.
- **Large User Base:** Foreign tech companies have a large number of users, and so a **significant economic presence (SEP)** in India. This in turn leads to revenue generation through data but these companies don't pay appropriate taxes on this revenue.
- **Revenue generation:** It is being hoped that this equalization levy will generate **almost \$ 100 billion** worth of global taxes.

#### Global Scenario

- **Australia**—Turnover tax called digital services tax is proposed to be introduced which may be levied on income of large multinationals providing advertising space, trading platforms, and the transmission of data collected about users.
- **New Zealand**—Amazon tax is proposed to tax books and goods bought online.
- **Uganda**—Tax on social media wherein users of WhatsApp, Twitter, Facebook will pay a fee.
- **OECD** has considered the **Action Plan 1** called "Addressing the tax challenges of the Digital Economy" as part of its **Base Erosion and Profit Shifting Project (BEPS)**.
- **France** has implemented tax on large technology companies with large annual global revenue called **GAFA (Google Apple Facebook Amazon) Tax**.

#### Challenges in implementation

- **Nexus:** Prevalence of nexus between the global tech giants and the lower tax jurisdictions.
- **Data:** The challenge is **how to estimate the value created** from the generation of data through digital products and services.
  - There seems to be no global consensus on how the global technology firms should be taxed.
- **Characterisation of profits:** As to how to determine and **attribute profit to India operations** of these technology firms, i.e. the profit that is earned from activities in India.
- **Compliances:** Unlike the earlier levy (on advertising), now the foreign e-commerce operator will be **required to make compliances** in India which could also raise potential challenges.
- **Possible legal challenges:** There are chances of legal challenges on extra-territoriality as the provisions seeks to cover non-resident to non-resident transactions which use India data. Also, the regulation may come in conflict with some bilateral and multilateral treaties.
  - The current Double tax avoidance treaties (DTAAs) override the amended definition of Business Connection that includes the concept of **Significant Economic Presence (SEP)**.

#### Way forward

Experts tracking the digital ecosystem have agreed that a comprehensive digital tax code which is consistent internationally has to be the solution in the long-term. Till such an ecosystem takes shape, continuous multi-stakeholder engagement encompassing governments as well as companies could be adopted.

## 3.8. DIRECT TAX VIVAD SE VISHWAS ACT, 2020

#### Why in New?

Parliament passed Direct Tax Vivad se Vishwas Act, 2020.

#### Key Features of the Act

- The Act provides an opportunity to taxpayers to **settle direct tax disputes** by paying due taxes with **complete waiver of interest and penalty** till June 30. (Earlier March 31, extended due to Covid-19 lockdown).

- It is **applicable to all the appeals/petitions** filed by taxpayers or the income tax department, with the following forums: Commissioner of Income-tax (Appeals); Income-tax Appellate Tribunal; High Court; or Supreme Court as on the 31st day of January, 2020 irrespective of whether demand in such cases is pending or has been paid.
  - Also, Income tax cases being arbitrated abroad are eligible under the Act.
- Pending appeal may be **against disputed tax, interest or penalty**.
  - In case of **disputed tax**, taxpayers shall be allowed a complete waiver of interest and penalty if they pay entire amount of tax in dispute up to June 30, 2020, after which amount payable shall be increased by 10% of disputed tax.
  - Where tax arrears relate to **disputed interest or penalty only**, then 25% of disputed penalty/interest shall have to be paid if payment is made by June 30, 2020, beyond which it shall be enhanced to 30%.
- **Once the dispute is settled under the Act**, taxpayer shall get the following immunities
  - Such cases **cannot be reopened** in any other proceeding by any tax authority or designated authority;
  - Opting for the scheme **shall not amount to conceding the tax position** and tax authority cannot claim that taxpayer has conceded to the decision on the disputed issue.
- **Disputes not covered** under the Act:
  - where prosecution has been initiated before the declaration is filed,
  - which involve persons who have been convicted or are being prosecuted for offences under certain laws (such as the Indian Penal Code), or for enforcement of civil liabilities, and
  - involving undisclosed foreign income or assets

#### Expected benefits of the Act

- **Fast-track dispute resolution:** The Act is expected to resolve 90% of **4.83 lakh direct tax cases worth Rs 9.32 lakh crore** that are currently locked up in various appellate forums.
- **To meet the shortfall in direct-tax collections:** The disputed direct tax arrears amount to ₹9.32-lakh crore. Considering that the actual direct tax collection in FY2018-19 was ₹11.37-lakh crore, the disputed tax value constitutes nearly one-year direct tax collection.
- **Save time, energy and resources:** Tax disputes consume copious amount of time, energy and resources both on the part of the Government as well as taxpayers. Moreover, they also deprive the Government of the timely collection of revenue. Therefore, there is an urgent need to provide for resolution of pending tax disputes.

### 3.9. FULLY ACCESSIBLE ROUTE FOR G-SECS

#### Why in news?

**Reserve Bank of India** has introduced a **separate channel** called **Fully Accessible Route (FAR)** to enable **non-residents** to invest in **specified Government of India dated securities**.

#### About Fully Accessible Route (FAR)

- Under this route, **non-resident investors** can invest in specified government securities without any **investment ceilings**.
- These securities attract **no foreign portfolio investor (FPI) limits**. FPI limit in all other G-secs is 6 per cent.
- Domestic investors can also invest in these.
- It was earlier announced in Union budget 2020-21.
- There are other two mechanisms for foreign investors:
  - **Medium-Term Framework** where FPI limit on G-sec is 6% and on SDLs is 2%.
  - **Voluntary Retention Route**, which allows investors easier rules in return for a commitment to remain invested for a longer period. It encourages Foreign Portfolio Investors to undertake **long-term investments** in Indian debt markets.

#### Government Security (G-Sec)

- A G-Sec is a **tradable instrument** issued by the **Central Government** or the **State Governments**. It acknowledges the **Government's debt obligation**.
- Such securities are either
  - **short term**
    - ✓ Called **treasury bills**
    - ✓ Maturities of **less than one year**.

- ✓ presently issued in three tenors, namely, 91-day, 182 day and 364 day
- ✓ There are also **cash Management Bills (CMBs)** which have a maturity of less than 90 days.
- **long term**
  - ✓ Called Government bonds or **dated securities**
  - ✓ Maturity of **one year or more**
- In India,
  - the **Central** Government issues **both treasury bills and bonds or dated securities** while,
  - the **State** Governments issue **only bonds or dated securities**, which are called the State Development Loans (SDLs).
- G-Secs carry practically **no risk of default** and, hence, are called **risk-free gilt-edged** instruments.
- Major players in the G-Secs market include commercial banks Primary Dealers, insurance companies, co-operative banks, regional rural banks, mutual funds, provident and pension funds.
- Retail investors including individuals are allowed participation on “non-competitive” basis in select auctions of dated Government of India (GoI) securities and Treasury Bills.

### 3.10. LLP SETTLEMENT SCHEME

#### Why in news?

Ministry of Corporate Affairs launched Limited Liability Partnership (LLP) settlement Scheme, 2020.

#### More on news

- LLP Settlement Scheme **allows a one-time condonation** of delay in filing statutorily required documents with the Registrar and to gain immunity from prosecution.
- The Scheme shall come into force on the 16th March, 2020 and shall remain in force up to 13th June, 2020. This is part of governments efforts to promote **ease of doing business**.

#### About LLP

- LLPs are a **flexible legal and tax entity** that allows partners to benefit from economies of scale by working together while also reducing their liability for the actions of other partners.
- LLPs are registered under the **Limited Liability Partnership Act 2008**.
- Mutual rights and duties of the partners within LLP are **governed by an agreement between the partners** and the LLP.
- LLP can **continue its existence** irrespective of changes in partners and no partner is liable on account of the independent or un-authorized actions of other partners.
- LLP **contains elements of both ‘corporate structure’ as well as ‘partnership firm structure’, hence called as hybrid** between company and partnership.
- A difference between LLP and joint stock company is that, the internal governance structure of a company is regulated by statute (i.e. Companies Act, 1956) whereas for LLP by contractual agreement between partners.

# 4. SECURITY

## 4.1. DRAFT DEFENCE PROCUREMENT PROCEDURE (DPP) 2020

### Why in News?

Ministry of Defence (MoD) released **draft Defence Procurement Procedure (DPP) 2020** which aims to **increase indigenous manufacturing and expedite procurement of defence equipment**.

### More on News

- **DPP will cover all Capital Acquisitions** undertaken by MoD and Service Headquarters (SHQ) both from indigenous sources and ex-import, **except for medical equipment**.
  - Defence Research and Development Organisation, Ordnance Factory Board and Defence Public Sector Undertakings will, however, continue to follow their own procurement procedure.
- **It will supersede DPP 2016**. The draft was finalised by a committee headed by Director General Acquisition, which was set up in August 2019.

### About Defence Procurement Procedure

- It was **first introduced in 2002** to provide probity, transparency and a structured procedure which would streamline the procurement of military hardware for the Armed Forces in a time bound manner.
- DPP has been a work in progress since its initiation in 2002 and through successive iterations in **2006, 2008, 2011, 2013, 2016** and finally in 2020.
- **DPP 2020**
  - Its aim is to **ensure timely procurement of military equipment** as required by Armed Forces in terms of performance, capabilities and quality standards, through optimum utilisation of allocated budgetary resources
  - In addition, **self-reliance in defence equipment production and acquisition** will be steadfastly pursued as a focus of the DPP with an ultimate aim to develop **India as a global defence manufacturing hub**.

### Key features and changes in DPP 2020

- **Indigenous Content (IC) ratio hiked**: In view of the experience gained by the domestic industry, the Draft proposes increasing the IC stipulated in various categories of procurement by about 10% to support the 'Make in India' initiative.
  - **Use of raw materials, special alloys and software incentivised** as use of indigenous raw material is a very important aspect of 'Make in India' and Indian Companies are world leaders in software.
- **New Category Buy (Global – Manufacture in India)** has been introduced with minimum 50% indigenous content on cost basis of total contract value.
  - Only the minimum necessary will be bought from abroad while the balance quantities will be manufactured in India.

### Why DPP is needed?

- **Complex and unique decision making**: Defence acquisition has certain unique features such as supplier constraints, technological complexity, foreign suppliers, high cost, foreign exchange implications and geo-political ramifications.
  - Therefore, a balance between competing requirements such as expeditious procurement, high quality standards and appropriate costs needs to be established through this DPP.
- **Shift focus on Self-reliance**: There is immense potential to leverage the manpower and engineering capability within the country for attaining self-reliance in design, development and manufacturing in defence sector.
- **Streamlining and simplifying process**: Defence Procurement involves long gestation periods and delay in procurement which impact the preparedness of our forces, besides resulting in opportunity cost.
  - DPP favours **swift decision making, provides for suitable timelines** and delegates powers to the appropriate authorities to ensure an efficient and effective implementation of the procurement process, by all stakeholders concerned.
- **Addressing the triremma**: India aspires to the acquisition of high-quality equipment, at low cost, in a short timeframe, when only two of these three are possible at any time.
  - Thus, critical decisions will need to be made to sacrifice either cost, quality, or speed of acquisition.
  - If clear decisions along these lines are not made, India could find itself in the worst of all worlds: spending high amounts belatedly for substandard quality equipment.
- **Defined role for Private sector**: Private investment will be a major contributor to the 'Make in India' initiative, accelerate manufacturing-led industrial growth and for capital and technology advancement.

- This would be in preference to the 'Buy Global' category as manufacturing will happen in India and jobs will be created in the country.
- **Leasing introduced as a new category** for acquisition in addition to existing 'Buy' & 'Make' categories to substitute huge initial capital outlays with periodical rental payments.
  - Leasing is permitted under two categories
    - ✓ **Lease (Indian)** where Lessor is an Indian entity and is the owner of the assets
    - ✓ **Lease (Global)** where Lessor is a Global entity.
  - This will be useful for military equipment not used in actual warfare like transport fleets, trainers, simulators, etc.
- **New Chapters introduced:**
  - for procurement of software and systems related projects
  - for Post Contract Management to facilitate and provide clear guidelines for issues arising during the contract period as typically Defence contracts last for a long period.
  - A comprehensive Chapter introduced for 'Make' to cover procurement from manufacturers in India including start-ups and innovators and from research projects of DRDO.

OVERALL ENHANCEMENT IN REQUIREMENT OF INDIGENOUS CONTENT (IC)		
Category	DPP 2016	Proposed
Buy (Indian-IDDM)	Min 40%	Min 50%
Buy (Indian)	Min 40%	Indigenous design - Min 40%, otherwise - Min 60%
Buy & Make (Indian)	Min 50% of Make	Min 50% of Make
Buy & Make	—	Buy & Min 50% of Make
Buy (Global-Mfr in India)	—	Min 50%
Buy (Global)	—	Min 30% for Indian vendors

## 4.2. FAKE NEWS

### Why in news?

Recently, misinformation circulating on social media, fuelling public fears around coronavirus, and the tendency of **mass-forwarding messages** without verifying content has once again brought the issue of fake news into the mainstream.

### About Fake News

- Fake news is defined as "information that is likely to be perceived as news, which has been **deliberately fabricated** and is disseminated with the intention to deceive others into believing falsehoods or doubting verifiable facts".
- A Microsoft study found that over 64% Indians encountered fake news online, the highest reported among the 22 countries surveyed.

### Causes responsible for developing fake news culture

- **Increasing mobile and internet penetration:** India has the most social media users, with 300 million users on Facebook, 200 million on WhatsApp and 250 million using YouTube.
- **Emphasis on likability enhancement of the news:** Social media algorithms are geared to appeal to people's habits and interests and the emphasis is on **likeability, and not accuracy**.
- Fake news is being used as an extension of propaganda and advertising. Unlike the traditional process, there are **no editorial controls or quality-assurances**.
- **Lack of comprehensive legislation:** There is **no specific law to deal with fake** newsmakers which allows miscreants to take undue advantage of the situation as authorities mostly remain confused as to the actionable wrong.

### Challenges posed by the Fake News

- **Weakens the democracy:** Fake news poses a serious challenge to this proposition as it misleads the consumers of information, poses a threat to a democratic society as it can give a handle to the state to interfere with the functioning of media.
  - **For instance,** Facebook took a hammering over Russia's interference in the 2016 U.S. election. It conceded the following year that up to 10 million Americans had seen advertisements purchased by a Russian agency.
- **Affecting choices and behaviours:** These platforms are predominant source of news and a critical mass of misinformation leads to mis-directed behaviours filled with fake news and disinformation aimed at influencing choices ranging from day to day life to political choices made during the Indian elections.

- **Threat of infodemic:** The WHO warns that societies around the world are facing an “infodemic”—an “overabundance” of information that makes it difficult for people to identify truthful and trustworthy sources from false or misleading ones.
- **Give rise to various crimes:** Crimes that includes communal riots, mob lynching, mass hysteria, etc. are many times the product of fake news being shared by the people.
- **Violates rights of the citizen:** The boundless dissemination of fake news on the social media induces crime against humanity and infringement of citizens’ right to unbiased and truthful news and reports.
- **Affecting the economy at large as we witnessed that how** the misinformation pandemic has also pervaded industries altogether unrelated to COVID-19 infection, such as **poultry and seafood sector**.
- **Spread hatred and mistrust:** False information propagated through fake news have helped people developing racist and xenophobic sentiments against people of Asian origin around the world, as we saw in the case of Corona epidemic. Such messages can often be a means of **reinforcing existing prejudices**.
- **Influences the mainstream information dissemination mechanism:** Fake news disrupt the traditional or official chain of information.
  - For instance, the official agency, Press Information Bureau has also drawn criticism for advocating treatments offered by alternative medicine systems without any supporting **scientific evidence and or clinical testing data**.

#### Measures taken to curb the menace of Fake News:

- **Legislations:**
  - **Section 505(1) of Indian Penal Code, 1860-** whoever by making, publishing or circulating any statement, rumour or report which may cause fear or alarm to the public, or to any section of the public shall be punished with imprisonment which may extend to three years, or with fine, or with both.
  - **Section 66D of Information Technology Act, 2000-** Whoever, by means for any communication device or computer resource cheats by personating shall be punish with the imprisonment of either description for a term which may extend to three years and shall also be liable to fine which may extend to one lakh rupees.
  - **Section 54 of the Disaster Management Act, 2005:** Whoever makes or circulates a false alarm or warning as to disaster or its severity or magnitude, leading to panic shall be punishable with the imprisonment which may extend to one year or with fine.
- **By the Government:**
  - In the current wake of Corona epidemic, Government initiatives like **the introduction of an official chatbot on WhatsApp** named ‘**MyGov Corona News Desk**’ which answers queries about the virus with an aim to prevent spreading of rumours during this pandemic.
  - The Press Information Bureau (PIB) has created a fact checking unit in order to tackle the fake news on social media targeting the government and the work being done by it.
- **Initiatives taken by social media intermediaries:**
  - Facebook has developed **an Artificial Intelligence system that can investigate** and deactivate fake accounts disseminating fake news.
  - **Facebook's fact checking program**, under which content rated false is downgraded in news feeds so that fewer people see it.
  - WhatsApp recently partnered with the World Health Organisation (WHO), United Nations Children’s Fund (UNICEF), and United Nations Development Programme (UNDP) to launch **WhatsApp Coronavirus Information Hub**.
- **By the Election Commission of India**
  - In the **lead-up to the elections**, the ECI, summoned the top executives of Facebook and Twitter to discuss the crisis of coordinated misinformation, fake news and political bias on their platforms.
  - Facebook recently had announced a ban on about 1,000 fake news pages targeting India. They included pages directly associated with political parties.
- **Supreme Court on Fake News:**
  - As per the court, media should maintain **a strong sense of responsibility**, while disseminating news and should ensure that unverified and fake news is not published.



- In case of recent Corona epidemic, as per Supreme Court, media should refer to and publish the official version about developments regarding coronavirus threat, the court said, while maintaining that it does not intend to interfere with the “free discussion” about the pandemic.
- **Role of Media:** Various media outlets are taking initiatives to fact check the information being shared.

#### Way Ahead

- **Promoting the culture of self-verification:** Where people who consume the data on an everyday basis educate themselves and acquire the skills to tackle it. Thus, there is a need to shift towards a system where self-verification of information is an ‘internet skill’ and an important duty.
  - This can be done simply by a quick search on Google, or checking for that information or visiting the official websites to verify the accuracy of the data.
- **Responsible citizenry:** Consumers who play the central role in the spread of misinformation, are also the **most efficient and effective in debunking the various myths and fake news**. This skill can be taught via:
  - creating **awareness** on television and social media, or
  - innovative initiatives like ‘Fake News Classes’ introduced in government schools in Kerala, where they teach students how to identify and spot misinformation.
  - by **asking questions** like “What is the source of that (post/forward)?”



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# 5. ENVIRONMENT

## 5.1. ILLEGAL WILDLIFE TRADE

### Why in news?

With the recent outbreak of Corona virus epidemic, speculations around the link between illegal wildlife trade and zoonotic diseases are doing rounds, which has brought the **issue of illegal wildlife trade into the limelight**.

### Background

- As per Worldwide Fund for nature, "illegal wildlife trade is estimated to reach \$20 billion per year, which makes **wildlife trafficking the world's fourth largest illicit trade**, after narcotics, human trafficking and trade in counterfeit goods.
- There are **variety of products which are demanded by the trade and poaching** includes Exotic pets and Luxuries, Bush meat, Traditional Medicines, Clothing & Jewellery made from animal fur, tusks, fins, shells, skins, horns and internal organs.
- **Impacts of illegal wildlife trade**
  - Threat to conservation of species
  - Risks to human health
  - negatively impacts a country's natural resources and local communities

### IWT in India: A brief overview

- India is only 2.4 % of world's land area, but contributes about 8 % of known global wildlife, including over 45,000 species of plants and 91,000 species of animals.
- In India, the **illegal wildlife trade includes diverse products** including mongoose hair; snake skins; Rhino horn; Tiger and Leopard claws, etc.
- **State of India's Environment 2017** highlights a 52 % spike in poaching and wildlife crimes between 2014 and 2016.
  - In 2018, **TRAFFIC India** released a study which revealed that at least 5,772 **pangolins** were captured in India from 2009 to 2017 for illegal trade.
- The **main reason for the unabated wildlife trafficking across India** is its porous international land borders.
- The **main consumer markets** are China and South East Asia, but wildlife is also smuggled to the Gulf, Europe and Northern America. Beyond India, the main transit countries are Nepal, Bangladesh, Bhutan, Sri Lanka and Myanmar.

### Steps taken in India to counter IWT

- **Constitutional safeguard:** Under **Article 51A (g)**, it is a fundamental duty of every citizen of India to protect and improve natural environment including forests, lake, rivers and wildlife and to have compassion for living creatures.
- **Laws and Government Initiatives:**
  - Trade in over 1800 species of wild animals, plants and their derivative are prohibited under **the Wildlife (Protection) Act, 1972**.
  - **The Prevention of Cruelty to Animals Act 1960** empower authorities to penalize and jail those who harm wildlife.
  - **Indian Penal Code, 1860:** Section 428 and Section 429 reads that killing, poaching, maiming, poisoning or torturing an animal is a cognizable offence and the punishment for such act is rigorous imprisonment which may extent to five years or fine or both.

### International Organizations for control of Wildlife Trafficking:

- **TRAFFIC**, established in 1976, is a wildlife trade monitoring network and a **joint programme of WWF and IUCN**.
  - It works closely with the National and the State Governments and various agencies to help study, monitor and influence action to curb illegal wildlife trade and bring wildlife trade within sustainable levels.
- **CITES**, (the Washington Convention), signed in 1973 provides a mechanism to regulate the trade in wildlife. Under its guidance, governments all over the world have taken steps to prevent this illegal trade and bring it under control.
  - **India is a member.**
- **IFAW:** The International Fund for Animal Welfare is one of the largest animal welfare and conservation charities in the world. The organization works to rescue individual animals, safeguard populations, preserve habitat, and advocate for greater protections.

- **Wildlife Crime Control Bureau (WCCB)** is a statutory multi-disciplinary body established by the Government under the Ministry of Environment and Forests, to combat organized wildlife crime in the country, under **Wild Life (Protection) Act, 1972**.
- **Other initiatives:**
  - **Participation of local community:** Five crore, people living around national parks and sanctuaries are working as partners in environment conservation.
    - ✓ A **15-year National Wildlife Action Plan (2017-31)** with a special focus on peoples' participation has been launched.
  - **Demand-reduction campaigns:** In May 2019, the WCCB launched a campaign in collaboration with the UN Environment named '**Not all animals migrate by choice**' campaign launched to raise awareness on **illegal wildlife trade** at airports across India.
    - ✓ Tiger, Pangolin, Star Tortoise and Tokay Gecko featured in the campaign.

### Way Ahead

- **There is an urgent need for knowledge and action** to bring legal wildlife trade within sustainable levels and stop all illegal wildlife trade that has threatened and even pushed many species towards extinction.
- **Need for greater investment in wildlife forensic science as a discipline to deal with the enormity of the crime so that** evidence get evaluated quickly, accurately scientifically, strongly.
  - For example, wildlife forensic scientists in the U.K., have developed techniques that can lift fingerprints off feathers and eggshells.
- Unless **governments and civil societies work together** to alter mindsets, the world's biodiversity will continue to dwindle, thus collaboration is needed, along with **community participation**.
- The **need for the effectiveness of IWT investments** to be better **monitored and evaluated**, and for investments to be aligned more clearly with **defined needs** identified on a country-by-country basis.

## 5.2. DRAFT ENVIRONMENT IMPACT ASSESSMENT NOTIFICATION 2020

### Why in news?

The Ministry of Environment, Forest and Climate Change (MoEFCC) has proposed a draft Environmental Impact Assessment (EIA) notification to replace the current EIA notification 2006.

### Background

- All projects that fall under the purview of the Environment Protection Act (EPA), 1986, require an environmental clearance (EC) for running its operations. They are usually given before a project commences.
- **EIA notification 2006** issued under EPA regulates EC given by government for projects such as dams, mining, thermal power plants, infrastructure projects like highways, ports, airport and big construction projects etc.
- The new notification is being brought in order to make the process **more transparent and expedient** by implementation of an online system, further delegation, rationalisation and standardisation of the EIA process.
- The **notification incorporates several scattered amendments** that the government made from time to time since the 2006 notification for streamlining the process, decentralization and implementation of the directions of Courts and National Green Tribunal (NGT).

### Salient Features of the Draft EIA Notification and their Analysis

- **Definition Clause:** The 2006 notification did not have any definitions clause, which made it difficult to ascertain the meaning of various terms used in the notification.
  - 2020 draft defines several terms (such as severely Polluted Area, Public Consultation, Protected Areas etc.) which were **previously not properly defined**, giving the law on EIA some much needed clarity.
- **Categorization of projects and activities:** While 2006 notification categorises all projects and activities broadly into two categories- Category A and Category B, the draft EIA notification divides all projects and activities into **three categories** - 'A', 'B1', and 'B2' based on **potential social and environmental impacts** and **spatial extent** of these impacts.
  - All projects under Category 'A' shall require prior-EC from the MoEFCC.
  - No EIA report shall be required for the projects listed under Category 'B2'.
  - Draft brings certain projects for the first time under the EIA processes. E.g. "bridges and elevated roads" would now come under the ambit of green assessment.

- **Public Consultation Process**
    - Public consultation is made **mandatory for category 'A' and category 'B1' projects**.
    - The Draft proposes to **expand the list of projects exempted** from public consultation before they seek environment clearance.
      - ✓ **Public consultation is exempted** for projects including modernisation of irrigation projects, area development projects, inland waterways, expansion or widening of national highways, all projects concerning national defence and security or involving **“other strategic considerations”** as determined by the central government, all linear projects like pipelines in border areas and all the off-shore projects located beyond the 12 nautical miles.
      - ✓ As **Strategic Projects are not defined**, it will give **wide discretionary powers to the government** which can designate any other projects as of strategic importance in name of energy security etc. to steer it clear of any public consultation and push the project.
  - **Time period for Public Consultation:**
    - It provides for a **reduction of time period** from 30 days to 20 days for the public to submit their responses during a public hearing for any application seeking EC.
    - It also requires that the **public hearing process be completed in 40 days** – compared to 45 days under the 2006 notification.
      - ✓ However, **lack of adequate time** for preparation of views, comments and suggestions to those who would be affected by the project, would render such public hearings worthless (as noted by Delhi high court in the Samarth Trust Case).
  - **Monitoring Mechanism:** In an **Investor-friendly compliance mechanism**, project owners are to submit environmental compliance reports (after getting clearance) **every year** against the earlier every 6 months under the EIA notification 2006.
    - During this period, certain **irreversible environmental, social or health consequences** of the project **could go unnoticed** because of the extended reporting time.
    - Further, the compliance mechanism requires the promoters to file the documents on which the environmental impact is to be assessed. This leaves a lot of room for promoters to pick and choose the data and information which is to be supplied.
  - **Dealing of Violation cases:**
    - It is a **new section** in the draft notification. **Draft defines “Violation”** as cases where projects either start the construction or excavation or undertake expansion without prior EC or prior- Environment Permission (EP).
    - The draft also **lays out a procedure for dealing with non-compliance** with conditions stipulated in the environmental clearance by projects.
- Stages in the Prior Environment Clearance (EC) or Prior Environment Permission (EP) Process**

  - **Stage (1): Scoping** means the process of determining the Terms of Reference by Regulatory Authority for preparation of EIA Report.
  - **Stage (2): Preparation of Draft EIA Report** by the project proponent through Accredited Environment Impact Assessment Consultant Organization (ACO).
  - **Stage (3): Public Consultation** means the process by which concerns of local affected persons and others, who have plausible stake in the environmental impact of the project, are ascertained with a view to appropriately take into account all such material concerns while designing the project
  - **Stage (4): Preparation of Final EIA**
  - **Stage (5): Appraisal** means detailed scrutiny of the application in prescribed form(s) and all documents including final EIA report, outcome of the public consultations by the Appraisal Committee for grant of Prior EC.
  - **Stage (6): Grant or Rejection of Prior Environment Clearance.**

**The draft EIA 2020 also proposes new committees and procedures. It includes**

  - Expert Appraisal Committee (EAC) at the Centre, State/UTs and district levels,
  - State Level Environment Impact Assessment Authority (SEIAA) or Union Territory Level Environment Impact Assessment Authority (UTEIAA)
  - **Technical Expert Committee (TEC)** shall undertake categorization or re-categorization of projects on scientific principles including any streamlining of procedures, other tasks assigned to the committee for the purpose this notification, by the MoEFCC from time to time.

- In March 2017, the Central government had come out with a notification that provided industrial projects with a chance to regularise such violation cases. It was supposed to be a one-time chance. However, present draft allows projects to seek **post facto approvals in perpetuity**, defeating the very purpose of prior approvals.

### Conclusion

An EIA is considered an important tool to achieve sustainability. The Supreme Court has observed in Vellore Citizens Welfare Forum case that companies are vital for countries' development, but having regard to pollution, the doctrine of 'sustainable development' must be adopted by them as a balancing concept. EIA seeks to provide that balance.

### Related News

- In April 2020, in a case of 3 industrial units running without prior EC, the **Supreme Court held** that the concept of an **ex post facto EC is in derogation of the fundamental principles of environmental jurisprudence** and is an anathema to the EIA notification 1994. It is detrimental to the environment and could lead to irreparable degradation.
- The **Violation clause in present draft** is also being termed as **institutionalising ex post facto EC mechanism**.

## 5.3. ECO-SENSITIVE ZONES

### Why in news?

The Ministry of Environment, Forest and Climate Change (MoEF&CC) declared the National Chambal Sanctuary in Madhya Pradesh as eco-sensitive zone (ESZ).

### More on News

- The MoEF&CC notified an **area to an extent of zero to two kilometres** around the boundary of National Chambal Sanctuary as the National Chambal Sanctuary ESZ.
- The MoEF&CC has also directed the Madhya Pradesh government to prepare a **Zonal Master Plan**, which shall provide for restoration of denuded areas, conservation of existing water bodies, management of catchment areas, watershed management, groundwater management, soil and moisture conservation, needs of local community and such other aspects of the ecology and environment that need attention.

### National Chambal Sanctuary

- National Chambal Sanctuary, also known as National Chambal Gharial Sanctuary, was declared a national sanctuary in 1979 and sits across three states: Madhya Pradesh, Uttar Pradesh and Rajasthan.
- It was formed to **protect the Chambal river eco-system**. It is home to naturally living population of **75% of gharial**. The sanctuary also harbours national aquatic animal - the freshwater **Gangetic dolphins**, 9 species of **freshwater turtles** and more the 290 species of migratory birds.
- National Chambal Sanctuary is the first and only tri-state riverine protected area in India for breeding population of Gharial.

### About Gharial

- **Native Extant (resident):** Bangladesh; India; Nepal
- **Threats:** Habitat destruction due to Dam, barrages, Sand mining and water abstraction, entanglement in fishing nets, Egg harvesting for subsistence food use by riparian residents
- **Conservation Status:** Listed in **Schedule I of Wildlife (Protection) Act, 1972** and as **Critically Endangered** on IUCN Red List.

### Eco Sensitive Zones (ESZ)/ Eco-Sensitive Area (ESA)

- **National Wildlife Action Plan (NWAP) (2002-2016)** advocated the region around the Protected Areas (PAs) to be very vital in preventing the isolation of patches. Such zones would also form the important '**ecological corridors**' and should be regulated to let the biodiversity survive in the long run.
  - The **NWAP** indicates that all identified areas around PAs and wildlife corridors to be declared as **ecologically fragile** under the **Environment (Protection) Act, 1986**.
- ESZs are declared around PAs through Notification **under the provisions of Environment (Protection) Act, 1986** and Rules made thereunder.
- MoEF&CC has issued "**Guidelines for Declaration of ESZ around National Parks and Wildlife Sanctuaries**" in 2011 with consultations among the states/UTs. It **prescribes general procedures** to be followed while considering declaration of an ESZ.
- **Nature of Activities in ESZ:** 2011 Guidelines specify activities that are to be prohibited, regulated and permissible in the ESZ -
  - **Prohibited-** commercial mining, polluting industries, major hydroelectric projects etc.

- **Restricted with safeguards (Regulated)** - Felling of trees, Establishment of hotels and resorts, Drastic change of agriculture system, widening of roads, introduction of exotic species etc.
- **Permissible-** Rain Water Harvesting, Organic farming, Ongoing Agricultural Practices etc.
- **Parameters considered to declare ESZs:** In general, following parameters are considered for declaring ESZs: Details of the Protected Area; Proposed ESZ Area and Extent; Available Biodiversity, Flora, Fauna in the Area; List of villages in ESZ.
- As per 2011 Guidelines, **proposal for ESZ should be prepared by the states** considering various parameters and forwarded to the MoEF&CC for further processing and notification.
- **Extent of ESZ:** The width of the ESZ and type of regulations would differ from one PA to other. However, as a general principle the width of the ESZ could go up to 10 kms around a PA (may not be uniform all around it) as provided in the Wildlife Conservation Strategy-2002.
  - In case where sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkages, are even beyond 10 kms width, these should be included in the ESZ.
  - Further, Supreme Court ordered that **in case of non- declaration of ESZ** around a PA, a minimum of 10 km buffer around a PA would be treated as ESZ.
- **Monitoring Mechanism:** The activities in the ESZ are monitored by a **Monitoring Committee**, chaired by the District Collector as the chairman and the Deputy Conservator of Forests (DCF) of the concerned National Park/Sanctuary as the Member Secretary.

#### Challenges associated with ESZ Declaration

- A survey of the implementation of ESZs in the Jim Corbett National park in Uttarakhand revealed that not only is the **conception of ESZs ill-conceived**—it is an **exclusionary mode of conservation** that **displaces local communities** and **denies them their livelihoods**—but also **largely redundant** as buffer zones already exist between forests and wildlife sanctuaries and human settlements.
- People who are living in biodiversity rich areas are mostly **excluded from consultation process** to identify the ESZ. However, they are the one who will be directly affected by regulated or restricted activities.
- Though **ESZ does not affect the ownership rights of people** on land resources, **it restricts land-use change**. The tribal people who mostly reside in these areas are affected as their livelihood mostly depend on forest products.
  - Recently the residents of 17 villages in Kanyakumari district protested the proposed ESZ in continuation with the planned Kanyakumari wildlife sanctuary in the district. They fear losing right to collect forest produces and thus their livelihood.
- States like Tamil Nadu, Andhra Pradesh, Jharkhand and Goa etc. **kept the mining areas out of ESZs**, irrespective of their ecological value. Besides, **no ground investigation** has been done in most proposals.
- States hesitate to finalize ESZ as it might **hamper their finances** due to closure of industries and tourism activities.
- There are **no quantifiable criteria defined** for including or excluding an area in the ESZ, leaving it to the forest officials to **arbitrarily** take decisions.
- In case of **PAs in urban areas** such as Guindy National Park in Chennai and Sanjay Gandhi National Park in Mumbai, **ESZ loses relevance** as the provisions of ESZ would apply on heavily populated areas. This forces to limit the extent of ESZ to few meters only. Moreover, it will adversely affect development of cities.

## 5.4. UN WORLD WATER DEVELOPMENT REPORT

### Why in news?

Recently, the United Nations World Water Development Report 2020 titled, '**Water and Climate Change**' was released.

### About UN World Water Development Report (WWDR)

- It is a comprehensive review that gives an overall picture of the state, use and management of the world's freshwater resources and aims to provide decision-makers with tools to formulate and implement sustainable water policies.
- It is published by UNESCO on behalf of the **UN-Water**.

### United Nations Water (UN-Water)

- It coordinates the efforts of UN entities and international organizations working on water and sanitation issues.
- **Members-** UN agencies, programmes and funds with a water-related mandate.
- **Partners-** international organizations, professional unions, associations or other civil-society groups that are actively involved in water
- Its members and partners inform about water and sanitation policies, monitor and report on progress, and coordinate two annual global campaigns on **World Water Day** and **World Toilet Day**.

- The UNESCO World Water Assessment Programme (UNESCO WWAP) coordinates the work of 31 UN-Water members and partners in the World Water Development Report (WWDR).
- The 2020 edition of the UN World Water Development Report addresses the critical linkages between water and climate change in the context of sustainable development.
- Report finds that **“water” rarely appears in international climate agreements**, even though it plays a key role in issues such as food security, energy production, economic development and poverty reduction.
- It concludes that **reducing both the impacts and drivers of climate change will require substantial changes** in the way we use and reuse the Earth’s limited **water resources**.

### Key themes and recommendations

Theme	Issues/ Challenges	Recommendations
<b>Water availability, infrastructure and ecosystems</b>	<ul style="list-style-type: none"> <li>● <b>Increased risks to water, sanitation and hygiene (WASH) infrastructure</b>, such as damaged sanitation systems or flooding of sewer pumping stations.</li> <li>● <b>Increased risks to water storage infrastructure</b>, such as safety and sustainability of dams.</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Use of Unconventional sources</b> like coastal reservoirs, water desalination, atmospheric moisture harvesting etc.</li> <li>● <b>Increase wastewater reuse</b> in agriculture and other sectors</li> <li>● <b>Restoration of wetlands</b>, which can help in flood and drought mitigation, water purification, and biodiversity.</li> </ul>
<b>Water-related extremes and risk management</b>	<ul style="list-style-type: none"> <li>● Around <b>74% of all-natural disasters</b> between 2001 and 2018 were <b>water-related</b>.</li> <li>● During the past 20 years, Floods and droughts affected over three billion people, and caused total economic damage of almost US\$700 billion</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Hard measures</b> such as enhanced water storage, climate-proof infrastructure, and crop resilience improvements through the introduction of flood and drought-resistant crop varieties.</li> <li>● <b>Soft measures</b> such as flood and drought insurance, forecasting and early warning systems, land use planning, and capacity building (education and awareness).</li> </ul>
<b>Agriculture and food security</b>	<ul style="list-style-type: none"> <li>● Falling levels of and <b>salt intrusions into groundwater</b>.</li> <li>● <b>High frequency of cyclones</b>, floods, droughts affecting cropping cycles.</li> </ul>	<ul style="list-style-type: none"> <li>● Need to <b>‘decarbonize’ agriculture</b> through climate mitigation measures for e.g. Carbon sequestration.</li> <li>● <b>Climate Smart Agriculture (CSA)</b> practices like retaining soil structure, organic matter and moisture under drier conditions.</li> </ul>
<b>Energy and industry</b>	<ul style="list-style-type: none"> <li>● Water stress can put a halt to manufacturing or energy generation.</li> <li>● Wastage of water.</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Industrial circular water management</b>- use of water changes from a linear process with increasing contamination (becoming wastewater) into a circular one where water recirculates and loops back for continual use</li> </ul>
<b>Human Settlements</b>	<ul style="list-style-type: none"> <li>● Physical infrastructure for delivery of water and sanitation facilities can also be disrupted, leading to contaminated water supplies and the discharge of untreated wastewater and stormwater into living environments.</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Effective water pricing</b>, retaining the commitment to provide a basic amount of water to all.</li> <li>● <b>Shared benefits from regional water resources</b> to all the stakeholders.</li> <li>● <b>Develop water sensitive cities</b>.</li> </ul>
<b>Technological innovation</b>	<ul style="list-style-type: none"> <li>● To promote the generation of new tools and approaches through advanced research and development.</li> <li>● To accelerate the implementation of existing knowledge and technologies across all countries and regions.</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Satellite-based earth observation</b> can help identify trends in precipitation, evapotranspiration, snow and ice cover/ melting, as well as runoff and storage, including groundwater levels.</li> <li>● <b>Citizen science and crowdsourcing</b> have the potential to contribute to early warning systems.</li> </ul>
<b>Water governance for resilience to climate change</b>	<ul style="list-style-type: none"> <li>● <b>Sectoral fragmentation and bureaucratic competition</b> may pose serious challenges for the integration across scales</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Greater public participation</b> to discuss and manage climate risk;</li> <li>● <b>Prioritizing risk reduction for socially vulnerable groups</b>.</li> </ul>

### Way Forward

There is a need for an equitable, participatory, multi-stakeholder approach to water governance in the context of climate change.

- On the one hand, it is imperative that the climate change community, and climate negotiators in particular, give greater attention to the role of water and recognize its central importance in addressing the climate change crisis.
- On the other hand, it is equally (if not more) essential that the water community focuses its efforts to promote the importance of water in terms of both adaptation and mitigation, develop concrete water-related project proposals for inclusion in nationally determined contributions (NDCs), and strengthen the means and capacities to plan, implement and monitor water-related activities in NDCs.

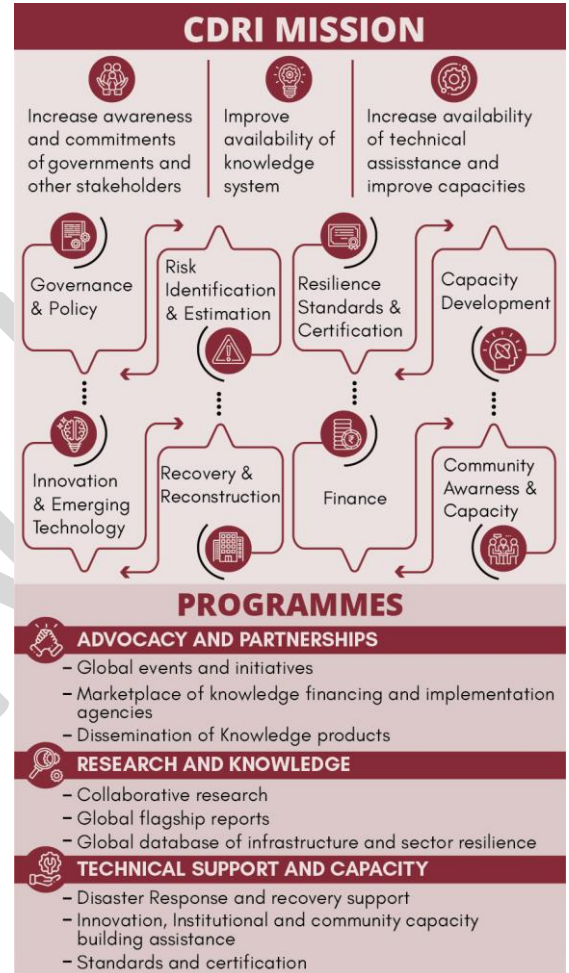
## 5.5. COALITION FOR DISASTER RESILIENT INFRASTRUCTURE

### Why in News?

Recently, **UK was confirmed as the first co-chair of the Governing Council** on the India-led global Coalition for Disaster Resilient Infrastructure (CDRI).

### About CDRI

- It was **announced by India's PM** at the **UN Climate Action Summit 2019** held in USA and first mooted as an idea in November 2016, while inaugurating an **Asian ministerial conference on Disaster Risk Reduction**.
  - Its other founding members include: Australia, Bhutan, Fiji, Indonesia, Italy, Japan, Maldives, Mexico, Mongolia, Rwanda, Sri Lanka and the UK.
- It is a **voluntary international grouping**, linking governments, UN agencies, banks, private sector groups, and academia to develop the resilience of infrastructure systems to climate and disaster risks.
- It is second **major coalition launched by India outside the UN**, after the International Solar Alliance which already has 80 member nations as partners. Its secretariat is in New Delhi.
- CDRI will set **targets for member countries to bring down disaster deaths, economic losses** and strive to achieve the **Sustainable Development Goal**.
  - It will also work at the intersection of the **Sendai Framework for Disaster Risk Reduction** and the **Paris Climate Agreement**.
- Governing Council is the **highest policy-making body** of CDRI.
  - It is **co-chaired by India** and a representative of another national government nominated by rotation **every two years**.
- As a road map for the coalition, the group will look at
  - risk assessment for infrastructure;
  - improvements in standards and regulation for infrastructure sectors;
  - role of finance in promoting disaster resilience of infrastructure;
  - mechanisms for supporting recovery in infrastructure.
- The grouping will support collaborative research, knowledge sharing as well as mutual technical assistance among coalition partners along these four areas.



### CDRI and International Solar Alliance (ISA)

- While it is not envisioned to take the shape of a treaty-based organisation, CDRI **can be seen as complementing ISA's efforts**.
- **ISA is about climate change mitigation** — deployment of more solar energy would bring down the reliance on fossil fuels, thereby reducing greenhouse gas emissions.
  - **CDRI, on the other hand, is about adapting to climate change**, a need that is inevitable.
- India hosts ISA, with its headquarters in Gurgaon. The CDRI secretariat too would be based in New Delhi supported by the UN Office for Disaster Risk Reduction (UNDRR).
- With these two initiatives, **India is seeking to obtain a leadership role, globally, in matters related to climate change.**



- CDRI will uphold the UN Agenda 2030 principle of leaving no one, no place, and no ecosystem behind, focusing on the most vulnerable regions and populations, while enabling inclusive and deliberative processes that recognize national and local efforts as primal.

#### What is Disaster Resilient infrastructure?

- Infrastructure that can stand any huge damage from any kind of natural disaster is known as Disaster Resilient Infrastructure. It encompasses **structural and non-structural measures**.
  - **Structural Measures** involve adjusting engineering designs and standards to reflect disaster risk such as flood control systems, protective embankments, seawall rehabilitation, and retrofitting of buildings.
  - **Non-structural measures** refer to risk-sensitive planning, enabling institutional frameworks, hazard mapping, ecosystem-based management, and disaster risk financing.
- In recent weather and climate-related disasters, up to 66% of public sector losses were related to infrastructure damage.
- Hence, resilient infrastructure is **critical for peoples' well-being, quality of life, and economic prospects**.

## 5.6. LIVING ENTITY

### Why in news?

Punjab and Haryana High Court recently declared that Sukhna Lake in Chandigarh is a **“living entity”** or **“legal person”** with rights, duties and liabilities of a living person.

### More details

- The court observed that Sukhna Lake is required to be declared as a legal entity for its survival, preservation and conservation.
- It also declared all **citizens of Chandigarh as loco parentis (in the place of a parent)** to save the lake from extinction.
- The Chandigarh administration has been directed to declare it a wetland within a period of three months.
- States of Punjab and Haryana failed to take precautionary measures to save the catchment area of Sukhna lake and it is their duty to restore the catchment area. Moreover, they are bound to pay exemplary-penal damages under the doctrine of ‘Polluter Pays’.

#### About Sukhna Lake

- The **man-made Sukhna Lake was built in 1958 by Le Corbusier**, the architect of Chandigarh.
- Located in the foothills of the **Shivalik Hills**, it was designed to collect runoff water from the Hills.
- It also has a nearby **Sukhna wildlife sanctuary** that is home to sambar, pangolin, wild boars etc.

#### Related information

- In common law jurisprudence, there are two types of persons — **natural persons** or human beings and artificial person, which are also known as **juristic persons**, juridical entity or a legal person other than a natural person.
- #### Living entity status in past
- **New Zealand** was first in world to declare **“Whanganui river”** as a person having living status.
  - In 2017, the Uttarakhand High Court ruled that the rivers **Ganga and Yamuna as living entities**, which was later stayed by Supreme Court.
  - In 2019, The Punjab and Haryana High Court accorded the status of **“legal person or entity” to animals** in Haryana.

### About the status

- By declaring legal entities, lake have same legal rights as a person in eyes of the law and polluting the lake would amount to harming a human being.
- **Any person declared as loco parentis would be able to sue for the protection** of such entities' rights.
- It also **ensures legal responsibility** to the appointed guardians or “loco parentis” to protect the nature.
- **Any fine imposed** for polluting or damaging the water body **would go to the water body's restoration directly**; instead of those aggrieved from the damage.
- Environmentalists also argue that the status of a living person would enable water bodies, through their representatives to enter into contracts with third parties in matters of constructions that could affect the body- such as hydroelectric projects, canals, dams, etc.

### Challenges in implementing these orders

- Prescribing rights and duties **without specifying the ambit of such rights** would not lead to the desired impact of the decisions.
- It is possible that the **person endorsed with the responsibility to protect the body fails in his duty** and enters into contracts that later prove to be detrimental to the river or lake ecosystem's interest.

- In the case of environment, **the state is vested with the duty to protect** and preserve the environment, taking into account the principles of sustainable development.
  - It is unclear whether vesting environmental bodies with rights would mean something beyond the already prescribed duties for the states and individuals.

## Conclusion

In times of a global climate crisis, we need to protect the environment even at the cost of development. A rights-based framework has the capacity to ensure this- but only if further clarity is infused in its understanding.

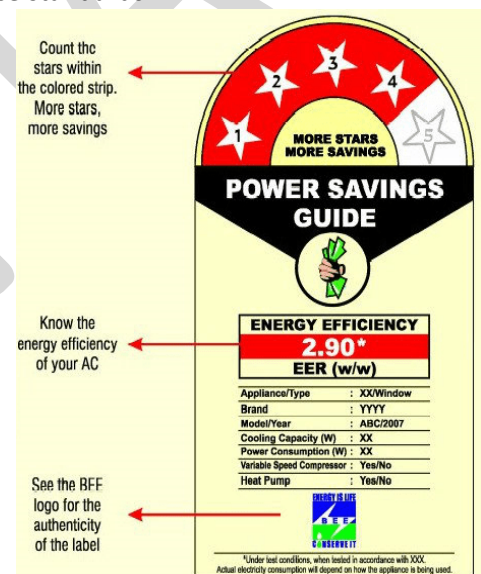
## 5.7. BEE: STAR RATING PROGRAMME

### Why in news?

Bureau of Energy Efficiency (BEE) launched star rating programme for Deep Freezer and Light Commercial Air Conditioners (LCAC).

### Standards and Labelling Programme (Star Labelling)

- Star Labelling Programme was formulated in 2006 by the **Bureau of Energy Efficiency**, under the **Energy Conservation Act, 2001**.
- It provides **informed choice** to consumers through display of energy performance labels on high energy use equipment & appliances and lays down minimum energy performance standards.
- A star rating, **ranging from 1 to 5 in the ascending order of energy efficiency** is provided to products registered with the Bureau. An endorsement label is also provided for some products.
- It seeks to **improve energy efficiency and also lower energy cost** of appliances/equipment for the consumers.
- Labels also provide a **common energy-efficiency benchmark** that can work in association with other policy measures such as procurement programs, financial incentives etc.
- Through launch of these two new appliances under voluntary regime, 26 appliances would now be covered under this programme.
- **10 mandatory appliances:** Room Air Conditioners, Frost Free Refrigerators, Tubular Florescent Lamp, Distribution Transformer, Room Air Conditioner (Cassettes, Floor Standing), Direct Cool Refrigerator, Colour TV, Electric Geysers, Variable Capacity Inverter Air conditioners, LED Lamps.
- **Voluntary appliances:** Induction Motor, Pump Sets, Ceiling Fans, LPG -Stoves, Washing Machine, Computer (Notebooks/Laptops), Ballast (Electronic/ Magnetic), Office equipment's (Printer, Copier, Scanner, MFD's), Diesel Engine Driven Mono-set Pumps, Solid State Inverter, DG Sets, Chillers, Microwave Oven, Solar Water Heater.



### Related news: Urja Dakshata Information Tool (UDIT)

- It is a first ever initiative taken by **BEE** with World Resources Institute (WRI), to **facilitate a database on energy e-fficiency**.
  - WRI is global research non-profit organization based in USA.
- It is a user-friendly platform that explains the **energy efficiency landscape of India** across industry, appliances, building, transport, municipal and agriculture sectors.
- It will also **showcase the capacity building and new initiatives** taken up by the Government across the sectors in the increase energy efficiency domain.

# 6. SOCIAL ISSUES

## 6.1. INTERNAL MIGRATION

### Why in news?

The recent exodus (during the 21-day lockdown) of large number of migrants (in some parts of the country) to reach their hometowns has highlighted the prevalent migrant problem.

### Who are these migrants?

- **Seasonal Migrants:** Economic Survey of India 2017 estimates that there are 139 million seasonal or circular migrants in the country.
- They dominate the **low-paying, hazardous and informal market jobs** in key sectors in urban destinations, such as construction, hotel, textile, manufacturing, transportation, services, domestic work etc.
- Seasonal or circular migrants have markedly different labor market experiences and integration challenges than more permanent migrants but precise data and systematic accounting of their experiences are unavailable.

### Why Internal Migration happens?

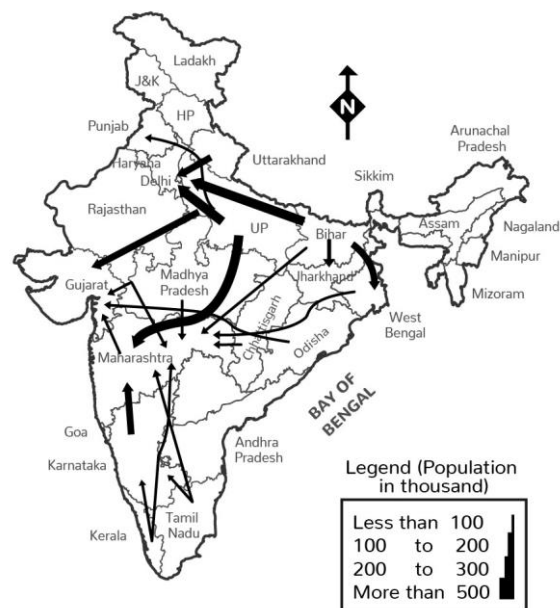
- **Unemployment in hinterland:** An increasing number of people do not find sufficient economic opportunities in rural areas and move instead to towns and cities.
- **Marriage:** It is a common driver of internal migration in India, especially among women.
- **Pull-factor from cities:** Due to better employment opportunities, livelihood facilities etc cities of Mumbai, Delhi, and Kolkata are the largest destinations for internal migrants in India.

### Issues that Internal Migration creates

- **Non-portability of entitlements** for migrant labourers (such as the Public Distribution System) which further gets aggravated due to **absence of identity documentation.**
- **Absence of reliable data:** The current data structure **lacks** realistic statistical account of **their number** and an understanding of the **nature of their mobility.**
  - Data on internal migration in India is principally drawn from two main sources – Census and the surveys carried out by the National Sample Survey Office.
    - ✓ One of the main lacunae of both the Census and NSS surveys is their failure to adequately capture seasonal and/or short-term circular migration.
- A **large majority** of migrants hail from historically **marginalized groups such as the SCs and STs**, which adds an additional layer of vulnerability to their urban experiences.

### Migrant

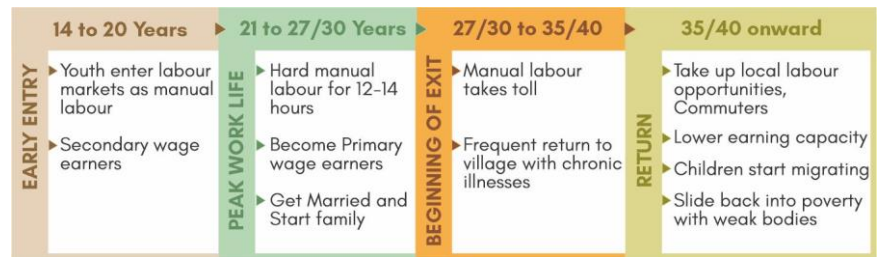
- The Census defines a migrant as a **person residing in a place other than his/her place of birth** (Place of Birth definition) or one who has changed his/ her usual place of residence to another place (change in usual place of residence or UPR definition).
- The number of internal migrants in India was **450 million** as per the most recent **2011 census.**



### Additional issues due to COVID-19

- **Uncertainty and desperation:** The crisis has further fueled uncertainty. This has resulted in many migrants leaving by foot, or on overcrowded buses and vans.
- **Lack of Quarantine facilities:** Absence of adequate medical infrastructure like testing facilities, quarantine facilities could drastically aggravate the situation.
- **Disrupting the Agricultural Cycle:** Many seasonal migrants usually head home just before June in preparation for the sowing season.
- **Apprehensions from source regions:** For example, there are already reports of people in villages in West Bengal who don't want these workers coming back, particularly from Maharashtra and Kerala.
- **Increasing unemployment:** According to ILO, about 400 million people working in the informal economy in India are at risk of falling deeper into poverty. Loss of jobs will result in loss of livelihoods of these migrants.

- **Exploitation by Employers and Contractors (Middlemen):** in the form of Non-payment of wages, physical abuse, accidents. The existing legal machinery is not sensitive to the nature of legal disputes in the unorganized sector.
- **Lack of Education:** The issue of lack of access to education for children of migrants further aggravates the intergenerational transmission of poverty.
- **Housing:** Migration and slums are inextricably linked, as labor demand in cities and the resulting rural-to-urban migration creates greater pressures to accommodate more people.
- **Social Exclusion:** Since the local language and culture is different from that of their region of origin they also face harassment and political exclusion.
  - Due to migrant's mobile nature, they don't find any place in the manifestos of trade unions.
- **Stuck in the cycle of poverty:** Most migrants are generationally stuck in a vicious cycle of poverty. (See infographic.)



#### What can be done?

- **Universal foodgrain distribution:** There are 585 lakh tonnes of grains stored in Food Corporation of India godowns, which could be proactively distributed.
- **Direct cash transfers:** Mechanisms could be evolved to deliver cash directly into the hands of people, instead of routing it through bank accounts.
- **Inter-state coordination committee** could be formed to ensure safe passage of migrants to their villages.
- **Legal cell at the central and state levels** could be created to protect wages. As there have been claims of non-payment of wages, forced leaves and retrenchments.
- **Mapping of migrant workers:** There is a need to create a database to map migrant workers scattered across the country.
  - Government is planning to map migrant workers which would be first comprehensive exercise to map migrant workers scattered across sectors.

#### Way forward

The challenges of the migrant problem are complex, also lack of recognition for migrants is still to be fully addressed. But if policy makers are able to recognize migrant workers as a dynamic part of a changing India, migration instead of being part of the problem will start becoming part of the solution.

## 6.2. SWACHH BHARAT MISSION (GRAMIN) [PHASE II]

#### Why in News?

Ministry of Jal Shakti recently launched the **second phase of Swachh Bharat Mission (Grameen)**, which has a total outlay of **₹1,40,881 crore**.

#### About Swachh Bharat Mission (Gramin) [Phase II]

- It will focus on **sustaining the gains made under the programme** in the last five years in terms of toilet access and usage, ensuring that no one is left behind.
- It will ensure that **effective solid and liquid waste management (SLWM)** is instituted in every Gram Panchayat of the country.
- It will focus on **Open Defecation Free Plus (ODF Plus)**, which includes ODF sustainability and Solid and Liquid Waste Management (SLWM).
  - **SLWM component of ODF Plus**, will be monitored on the basis of **output-outcome indicators** for four key areas:
    - ✓ **plastic waste management**,
    - ✓ **bio-degradable solid waste management** (including animal waste management),

- ✓ greywater management
- ✓ faecal sludge management.

- It will be implemented **from 2020-2021 to 2024-2025** in a **mission mode**.
- It will **continue to generate employment** and provide **impetus to the rural economy** through the construction of household toilets and community toilets, as well as **infrastructure for solid and liquid waste management (SLWM)** such as compost pits, soak pits, waste stabilisation ponds, material recovery facilities etc.
- **Funding for the project:** It will be a novel model of convergence between different verticals of financing.
  - **₹52,497 crore** will be allocated **from the budget** of Department of Drinking Water and Sanitation.
  - The **remaining amount** will be dovetailed from the funds being released under the **15th finance commission, MGNREGS and revenue generation models particularly for SLWM**.
- **Provisions**
  - Provision for incentive of **Rs.12,000/- for construction of Individual Household Toilet (IHHL)** to the newly emerging eligible households as per the existing norms will continue.
  - Funding norms for SLWM have been rationalized and changed to per capita basis in place of number of households.
  - **Financial assistance to the Gram Panchayats (GPs)** for construction of Community Managed Sanitary Complex (CMSC) at village level has been **increased from Rs.2 lakh to Rs.3 lakh per CMSC**.
  - **Fund sharing pattern** between Centre and States will be 90:10 for North-Eastern States and Himalayan States and UT of J&K; 60:40 for other States; and 100:0 for other Union Territories, for all the components.

#### Swachh Bharat Mission (SBM) – Gramin

- **SBM- Gramin is a sub mission** of SBM and is being implemented **by Ministry of Jal Shakti**.
- It has following objectives –
  - Bring improvement in the general quality of life by promoting cleanliness, hygiene and eliminating open defecation.
  - Accelerate sanitation coverage in rural areas to achieve Swachh Bharat Vision.
  - Motivate communities and Panchayati Raj Institutions to adopt sustainable sanitation practices and facilities through awareness creation and health education.
  - Encourage cost effective technology
  - Develop community managed sanitation systems focusing on scientific solid waste management.
  - Create significant positive impact on gender and promote social inclusion by improving sanitation especially in marginalized communities

**SBM (G) Phase I Success Report - More than 10 crore individual toilets** were constructed since the launch of SBM and, as a result, rural areas in all states declared themselves as having achieved ODF status as on October 2, 2019.

#### Related information

##### Swachh Manch web portal

- It is a **web-based platform** launched under the SBM which aims to bring together **every stakeholder contributing** to the Swachh Bharat Mission under a **common platform**.
- The platform will allow stakeholders to **create/invite/participate in volunteering opportunities** around neighbourhoods.
- It will **enable uploads of pictorial evidence** of citizens and organizations participating in the initiatives, as well as **record the number of hours volunteered**, as acknowledgement of citizens'/organisations' efforts and contributions to the cause of 'swachhata'.
- It will also be **integrated with the existing Swachhata App** to act as a citizens' grievance redressal platform.

#### Empowerment of Gram Panchayat vis-s-vis SBM(G)

- Gram panchayats across the country will have **access to more funds and guidelines to use these funds** more efficiently for activities under the second phase of the union government's flagship Swachh Bharat Mission (SBM).
- It will be **mandatory for gram panchayats to use half the funds allocated** to them under the 15<sup>th</sup> Finance Commission.
- An **additional Rs 5 lakh is allocated to each gram panchayat** for solid and liquid waste management under the **Mahatma Gandhi National Rural Employment Guarantee Scheme**.

### 6.2.1. ODF+ AND ODF++

#### Why in News?

A report by the **Parliamentary Standing Committee on Urban Development** was tabled in the Lok Sabha recently which talked about the progress of phase 2 of SBM (Urban).

### What is ODF, ODF+ and ODF++ Status?

- Swachh Bharat Mission (SBM), launched in 2014, had one of its stated objectives as the achievement of **Open Defecation Free (ODF) status** in all the **Urban Local Bodies (ULBs)**.
- Swachh Bharat Mission (Urban) Phase 1 under **Ministry of Housing and Urban Affairs (MoHUA)** had two primary components of implementation:
  - Achieving 100% open defecation free (ODF) status,
  - Putting in place systems to achieve 100% solid waste management – in all ULBs in the country
- Under **Phase 1** of SBM (U), **99 per cent of the cities became ODF** in December 2019.
- With target completion in sight, it was time to **consolidate the ODF achievements** to make it sustainable, and address the issue of holistic sanitation, by addressing the entire **sanitation value chain**. The **SBM ODF +** and **SBM ODF ++** protocols are geared towards this objective.
- While the **SBM ODF +** protocol focuses on **sustaining community/ public toilet usage** by ensuring their functionality, the **SBM ODF ++** focus on achieving sanitation sustainability by addressing **complete sanitation value chain**.
- However, in the recent report, it was noted that the progress of **work on Open Defecation-Free Plus (ODF+) and ODF++ under Phase 2** of the Swachh Bharat Mission (Urban) has **been slow**.

ODF	ODF+	ODF++
<ul style="list-style-type: none"> <li>• The ODF protocol states that “A city/ward is notified as ODF city/ward if, at any point of the day, <b>not a single person is found defecating in the open.</b>”</li> </ul>	<ul style="list-style-type: none"> <li>• The ODF+ protocol says that a city, ward or work circle could be declared ODF+ if, “at any point of the day, not a single person is found <b>defecating and/or urinating in the open</b>, and all community and <b>public toilets are functional and well-maintained.</b>”</li> </ul>	<ul style="list-style-type: none"> <li>• The ODF++ protocol adds the condition that “<b>faecal sludge/septage and sewage (FSSS)</b> is safely managed and treated, with <b>no discharging and/or dumping of untreated faecal sludge/septage and sewage in drains, water bodies or open areas.</b>”</li> </ul>
<ul style="list-style-type: none"> <li>• ODF focuses solely on <b>toilets.</b></li> </ul>	<ul style="list-style-type: none"> <li>• ODF+ focuses on toilets with <b>water, maintenance and hygiene.</b></li> </ul>	<ul style="list-style-type: none"> <li>• ODF++ focuses on toilets with <b>sludge and septage management.</b></li> </ul>

### Status of ODF + and ODF ++

- According to MoHUA, the cities that had been **certified ODF at least once**, on the basis of the ODF protocols, **are eligible to declare themselves as SBM-ODF+ & SBM-ODF++**.
- Under Phase 1 of SBM (U), close to **65.81 lakh individual household toilets** had been constructed against the targeted 59 lakh and **5.89 lakh seats of community / public toilets** were constructed against the target of 5.08 lakh seats.
- **Waste processing** has gone up more than three times, **to 60% currently**.
- Sanitation (Eradication of Open Defecation in all ULBs)
  - 35 States/UTs declared ODF in their urban areas
  - 4137 ULBs certified ODF out of 4320 cities declared ODF
  - 1276 cities ODF +
  - 411 cities ODF ++ means that less than 10 per cent cities are certified as ODF++ so far.
  - 100% scientific Solid Waste Management in all ULBs
- MoHUA stated that **additional funds will be required to sustain** the ODF status and ensure complete faecal sludge management.
- Also, work on three protocols under the next phase of **Swachh Bharat Mission (Urban-2) — ODF+, ODF++ and Water Plus** — is to be completed by 2024.
  - **Water Plus:** Announced in 2019, it aims to **sustain toilets by treating and reuse of water.**

## 6.3. REPORT ON PROGRESS OF BEIJING DECLARATION

### Why in news?

- A report “**A New Era for Girls: Taking stock on 25 years of progress**” was released by **UNICEF, Plan International and UN Women**.
- In 1995, the world adopted the **Beijing Declaration and Platform for Action**, the most comprehensive policy agenda for gender equality, with the vision of ending discrimination against women and girls. The report takes a stock of progress made since then.

## Key findings of the report

- **Education**
  - The **number of girls out of school** worldwide dropped by 79 million between 1998 and 2018.
    - ✓ Still at the primary level, 5.5 million more girls than boys are out of school worldwide.
- **Employment:** Despite improved educational opportunities **female youth labour force participation declined** from 47 per cent in 1995 to 33 per cent in 2020.
  - In more than five of six countries with available data, **girls aged 10–14 years are more likely to spend 21 or more hours on household chores per week** than boys of the same age. This is due to **domestic responsibilities** as women's and girls' work including cooking, cleaning and caring for others etc.
- **Gender-based violence and harmful practices**
  - **Son preference and access to prenatal sex determination** technologies has led **unfavourable child sex ratio** for girls. E.g. East Asia, Central Asia and South Asia etc.
  - **Child marriage has declined globally** from one in four in 1995 to approximately one in five today.
  - The prevalence of **Female genital mutilation (FGM)** has declined over the past 25 years but **one in three adolescent girls aged 15–19 years** in 31 practising countries with national data on prevalence are still affected by FGM.
- **Health and nutrition**
  - Shift from traditional diets to processed, unhealthy foods doubled **overweight and obesity among girls from aged 5-19 9% in 1995 to 17% in 2016**, while underweight share is 8%.
  - **The adolescent birth rate has declined** globally from 60 births per 1,000 girls aged 15–19 years to 44 births.
    - ✓ Yet, its prevalent in Sub Saharan Africa and **remains cause for mortality** among adolescent girls due to reasons like haemorrhage, sepsis and obstructed labour.

- **UN Women, the United Nations Entity for Gender Equality and the Empowerment of Women**, was created by UN General Assembly in 2010.
  - It is dedicated to gender equality and the empowerment of women.
- **Plan International** is an **independent development and humanitarian organisation**, based in England that advances children's rights and equality for girls.

## Suggestions made in the report

- **No decisions for girls, without girls**-Expanding opportunities for **girls to be the changemakers**, by actively engaging their voices and opinions in their communities and political processes.
- **More targeted investment in adolescent girls**, with interlinked vulnerabilities, opportunities and perspectives is needed.
- Developing adolescent girls' education and skills for the Fourth Industrial Revolution.
- Ending gender-based violence, child marriage and FGM and ensuring girls have **accurate, timely and respectful health** information and services.
- Needed to drive **evidence-informed policy** and programme decisions for adolescent girls and to further accountability.

## 6.4. POCSO RULES 2020

### Why in news?

Central government has notified the **Protection of Children from Sexual Offences (POCSO) Rules, 2020** which gives effect to amendments made to POCSO Act in 2019.

### POCSO Amendment Act 2019

POCSO Act was brought in 2012 to address the heinous crimes of sexual abuse and sexual exploitation of children through less ambiguous and more stringent legal provisions. Following amendments were made in 2019.

- **Increases the minimum punishment** (including death penalty) for penetrative sexual assault, aggravated penetrative sexual assault.
- Adds **assault resulting in death of child**, and **assault committed during a natural calamity**, or in any similar situations of violence into **Aggravated penetrative sexual assault**.
- **Pornographic purposes:** Defines child pornography as any visual depiction of sexually explicit conduct involving a child including photograph, video, digital or computer-generated image indistinguishable from an actual child.
- **Storage of pornographic material:** Includes two other offences (i) failing to destroy, or delete, or report pornographic material involving a child (ii) transmitting, displaying, distributing such material except for the purpose of reporting it.

## Key Provisions of The Rules

- **Mandatory police verification of staff** in any institution housing children or coming in regular contact with children like schools, care homes, sports academies etc.
- State Governments to **formulate a child protection policy** based on the principle of zero-tolerance to violence against children, which shall be adopted by all institutions, organizations, or any other agency working with, or coming in contact with children.
- Central Government and State Governments shall
  - **Provide periodic training** (like sensitization workshops etc.) to all persons, coming in contact with the children, to sensitize them about child safety and protection.
  - Prepare **age-appropriate educational material and curriculum for children**, informing them about personal safety, emotional and mental wellbeing, reporting mechanisms including Childline helpline services (toll free number-1098) etc.
- **Orientation programme and intensive courses for police personnel and forensic experts** for building their capacities in their respective roles on a regular basis.
- **Any person who has received any pornographic material** involving a child or any information regarding such pornographic material **shall report** the contents.

## 6.5. CHILDREN'S RIGHT AND THEIR FUTURE

### Why in News?

World Health Organization, The Lancet medical journal and UNICEF jointly launched a report titled 'A future for the world's children?'

### About Report

- Report assesses threat to health and future of every child and adolescent from ecological degradation, climate change and exploitative marketing practices.
- The report tries to estimate overall well-being of a child through a **Flourishing Index and a Sustainability Index**.
- **Flourishing Index** is a geometric mean of two indices on **surviving and thriving of child**.
  - The **parameter of Surviving** considers maternal survival, survival in children younger than 5 years old, suicide, access to maternal and child health services, basic hygiene, sanitation, and lack of extreme poverty.
  - The **parameter of Thriving** considers educational achievement, growth and nutrition, reproductive freedom, and protection from violence.
  - **India's rank is 131<sup>st</sup> among 180 countries.**
  - Norway, Republic of Korea topped while Chad and Central African Republic were at the bottom.
- **Sustainability Index** ranks countries based on their 'excess CO2 emissions relative to 2030 targets' as per 2015 Paris Climate Agreement.
  - **India's rank is 77<sup>th</sup> among 180 countries.**
  - Burundi, Chad, Somalia topped while Trinidad and Tobago and Qatar were at the bottom.
- **Not a single country** performed well on **all three measures of child flourishing** (calculated using Flourishing Index), **sustainability** (calculated using Sustainability Index), and **equity** (calculated using Income based **Gini-coefficient**).
- **Specific recommendations given:** stopping CO2 emissions with utmost urgency; children and adolescents centric policies, a new Optional Protocol to the UN Convention on the Rights of the Child.

## 6.6. TECH FOR TRIBALS

### Why in news?

TRIFED launched 'Tech for Tribals' program to develop Tribal entrepreneurship.

### About 'Tech for Tribals'

- It is an initiative of **TRIFED** supported by **Ministry of Micro, Small and Medium Enterprises**.



- It aims at **capacity building and imparting entrepreneurship skills** to tribal forest produce gatherers enrolled under the **Pradhan Mantri Van Dhan Yojana (PMVDY)**.
- It was launched in **collaboration** with IIT-Kanpur, IIT-Roorkee, IIM Indore, Kalinga Institute of Social Science, Bhubaneshwar etc.
- Under this, **courses will be developed** with content relevant to **entrepreneurship in value addition** and processing of forest produces.
- This will help their business run with marketable products with quality certifications.

#### TRIFED

- The **Tribal Cooperative Marketing Development Federation of India (TRIFED)** is a national-level organization functioning under the **Ministry of Tribal Affairs** came into existence in 1987.
- Its objective is socio-economic development of tribal people by **marketing development of the tribal products including minor forest produce**.
- Its activities involve **capacity building of the tribal people** through sensitization, formation of Self-Help Groups (SHGs) and imparting training to them in a more systematic and scientific manner

#### About PM Van Dhan Yojana

- Launched in 2018, the scheme is implemented through **Ministry of Tribal Affairs** as Nodal Department and **TRIFED** as Nodal Agency at central level.
- Under this, **Van Dhan Vikas Kendras** will be established, to provide skill upgradation and capacity building training and setting up of primary processing and value addition facility.
- **Van Dhan Vikas Kendras** form a cluster of 10 Self Help Groups comprising of 30 tribal Minor Forest Produce gatherers each.
- It seeks to create **processing facilities** at primary, secondary and tertiary level, involving big corporates under **PPP model**.
- First model Van Dhan Vikas Kendra was set up in **Bijapur District of Chattisgarh**. A total 799 Van Dhan Vikas Kendra in the 24 states have been opened since the launch.



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# 7. SCIENCE AND TECHNOLOGY

## 7.1. COVID-19

### Why in news?

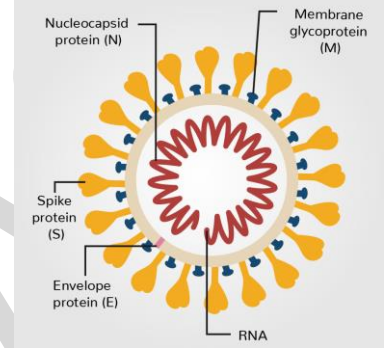
There is a large scale outbreak of COVID-19 (Coronavirus Disease 2019) across the world.

### Coronavirus and its origin

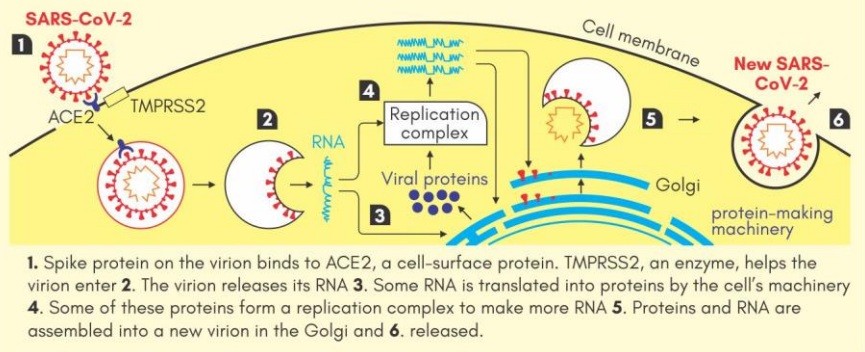
- Coronaviruses are a large family of viruses that **circulate among a range of animals**, such as bats, cats, and birds. Sometimes these viruses make a jump over from animals to humans (known as **Spill over**) causing diseases known as **Zoonotic diseases**.
  - This spill over happens **due to factors such as mutations in the virus or increased contact between humans and animals**.
- The virus **causes respiratory and gastrointestinal symptoms** in humans with **infectious diseases ranging from common cold to more severe diseases** such as severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS) and CoVID-19.
- While the **SARS coronavirus is thought to have evolved from infecting bats to civet cats to humans** in the Guangdong province of southern China in 2002, the **MERS evolved from bats to camels to humans** in Saudi Arabia in 2012.
- Research suggests that the **original source of the virus that caused COVID-19 was bats, and pangolins might have acted as intermediaries**. The mutation and natural selection might have taken place either inside pangolins or in humans after transfer from pangolins. This virus was **first identified in Wuhan (Hubei province), China in 2019**.

### Role of Live animal markets

- Live animal markets (**also known as 'wet markets'** in parts of Asia, such as the Huanan Seafood Market in Wuhan China) are an **important risk factor for zoonotic disease spread**.
- In the Huanan Seafood Market in China, live fish, meat and wild animals are sold putting people and live and dead animals - dogs, chickens, pigs, snakes, civets, and more - in constant, close contact. That makes it easy for a virus to jump from animal to human.



### How SARS-CoV-2 replicates itself in the cells of those infected



### Structure and physiology of the virus

- Coronaviruses are spherical shaped and consist of a core of genetic material (**RNA**) surrounded by an **envelope with mushroom shaped protein spikes**. These spikes binds and fuses to human cells allowing the virus to gain entry and replicate itself inside the body.
- Each virus particle is just between 50–200 nanometres in diameter (human hair is 80000nm in diameter).
- The **protein spikes gives the appearance of a crown or a halo around the Sun**. Crown in Latin is called as “Corona” and this is how the virus also got its name.
- COVID-19 is caused by SARS-CoV-2 also known as novel coronavirus (n-CoV)**, as it is very similar to the one that caused SARS in 2002.
- The spike protein of the novel coronavirus shares **98% sequence identity with the spike protein of the SARS coronavirus**.

### DNA VIRUSES



### RNA VIRUSES

DNA viruses refer to viruses whose genetic information is stored in the form of DNA	RNA viruses refer to viruses whose genetic information is stored in the form of RNA
Contain DNA as their genetic material	Contain RNA as their genetic material
Most are double-stranded	Most are single-stranded
Replicated inside the nucleus of the host cell	First transcribed and then replicated in the cytoplasm
Viral DNA is first transcribed into RNA, and then mRNA is translated into viral proteins	Can bypass transcription during protein synthesis since they already contain RNA in the genome
Stable due to the lower mutation rate	Unstable due to the higher mutation rate
Shows an accurate replication	Shows an error-prone replication
Contain a large genome	Contain a small genome
Newly-synthesized viral DNA is packed into a pre-formed capsid called procapsid	Newly-synthesized viral RNA is not packed in a procapsid
Smallpox, herpes, and chickenpox are diseases of DNA viruses	Aids, Ebola hemorrhagic fever, SARS, common cold, etc. are some diseases of RNA viruses

- SARS-CoV-2 has spike proteins which contain a receptor-binding domain (RBD). The **RBD facilitates the virus' entry into target cells by binding with the cellular receptor called angiotensin-converting enzyme-2 (ACE-2)** found in heart, lungs, kidneys and the gastrointestinal tract.
- Once inside, it hijacks the cell's reproductive machinery to produce more copies of itself, before breaking out of the cell again and killing it in the process.
- **However, unlike in the case of SARS, the spike protein of the novel coronavirus binds to the cell receptor with much higher affinity** — 10-to 20-fold higher. The RBD's bonding affinity is increased due to mutation within the virus.
- This stronger bonding affinity **partly explains the apparent high human-to-human transmissibility** and COVID-19's faster spread as compared to SARS epidemic in 2002-2003 across 29 countries.

#### Primary case and Index case in a disease outbreak

- The term **primary case can only apply to infectious diseases** that spread from human to human, and **refers to the person who first brings a disease into a group of people**—a school class, community, or country. For many outbreaks, the primary case will never be known—the worldwide HIV epidemic is one example.
- The **index case (sometimes referred to as patient zero) is the first documented patient** infected by a viral or bacterial disease in an outbreak within a population.
  - The index case may or may not indicate the source of the disease, the possible spread, or which reservoir holds the disease in between outbreaks, but may bring awareness of an emerging outbreak.
  - Even **outbreaks of disease that is not spread from human to human, might have an index case.**
  - Currently, **we do not know the patient zero in the COVID-19 outbreak.** The hypothesis that the outbreak started at the Chinese market and could have been **transmitted from a living animal to a human host** before spreading human-to-human is still considered the most likely, according to the World Health Organization (WHO).
- In some instances, the primary case is also the index case, but often they are not the same. **Identifying who these people are can help address crucial questions about how, when and why it started.** These can then help to prevent more people from getting infected now or in future outbreaks.

### 7.1.1. EPIDEMIOLOGY OF SARS-COV-2

Viral epidemiology is the **scientific discipline concerned with the study of the incidence and spread of viruses** in populations over time the **ultimate goal of which is to devise intervention strategies.**

<b>Geographic distribution</b>	COVID-19 cases have been <b>reported in all continents, except for Antarctica</b> , and have been steadily rising around the world.
<b>Route of transmission —</b>	<ul style="list-style-type: none"> <li>• <b>mainly via respiratory droplets of an infected person.</b></li> <li>• <b>through aerosols</b> in the air.</li> </ul>
<b>Reproduction Number</b> (the number of additional cases that likely result from an initial case)	<ul style="list-style-type: none"> <li>• <b>R<sub>0</sub> (R-naught)</b>, also called the basic reproduction number, is the rate at which a virus is transmitted.           <ul style="list-style-type: none"> <li>○ R<sub>0</sub>= new infections/existing infections; or the average number of new infections over an infectious period.</li> <li>○ It indicates the average number of people who will contract the virus from an infected person, in a population that does not have immunity (herd immunity or vaccination) for the said disease.</li> <li>○ R<sub>0</sub>=1 indicates constant number of infected people, below 1- transmission to fewer people, above 1- transmission to higher numbers.</li> </ul> </li> <li>• According to WHO, COVID 19 reproduction number is understood to be between 2 and 2.5 (may also be as high as 5).</li> </ul>
<b>Incubation period</b> (the time between catching the virus and beginning to have symptoms of the disease)	<ul style="list-style-type: none"> <li>• <b>14 days following exposure</b>, with most cases occurring approximately four to five days after exposure.</li> <li>• <b>An infected person can transmit the virus during this period</b> i.e. in asymptomatic period.</li> </ul>
<b>Symptoms</b>	<ul style="list-style-type: none"> <li>• <b>fever, cough, shortness of breath</b> are the classical symptoms.</li> <li>• loss of either smell or taste may also be an early warning sign of COVID-19</li> <li>• <b>may present with mild, moderate, or severe illness</b>; the latter includes severe pneumonia, ARDS [Acute Respiratory Distress Syndrome], sepsis and septic shock.</li> </ul>

	<ul style="list-style-type: none"> <li>○ <b>Sepsis is an organ dysfunction</b> caused by the body's immune system overreacting in response to an infection and can be triggered by a variety of pathogens including viruses, bacteria, fungi or parasites.</li> </ul>
<b>Fatality rate</b> (the proportion of deaths a disease causes within a group of people who have the disease)	Individuals of any age can acquire severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, but the fatality rate <b>increases with the age and with pre-existing medical conditions</b> such as cardiovascular disease and diabetes.
<b>Period of infectivity</b> (The interval during which an individual with COVID-19 is infectious)	<ul style="list-style-type: none"> <li>• Determined by evaluating viral RNA detection from respiratory and other specimens after symptom onset and later in the illness.</li> <li>• It is currently <b>uncertain for COVID-19</b>.</li> </ul>
<b>Seasonality of the virus</b> (Season/weather during which the virus remains most active)	<ul style="list-style-type: none"> <li>• Coronaviruses in animals are not always seasonal but have historically been so in humans for reasons that are not fully understood.</li> <li>• There is however <b>no evidence so far about the novel coronavirus's seasonality</b>.</li> </ul>

## 7.1.2. DIAGNOSIS

Currently following tests are available for identifying coronavirus infection in a person:

<b>Serological Tests/Rapid Antibody Detection Tests:</b>	<ul style="list-style-type: none"> <li>• These are <b>blood/serum/plasma test carried out to determine whether an individual's body has IgM and IgG antibodies</b> developed against the SARS-CoV-2. <ul style="list-style-type: none"> <li>○ <b>Immunoglobulins</b>, also known as antibodies, are glycoprotein molecules produced by plasma cells (white blood cells). They act as a critical part of the immune response by specifically recognizing and binding to particular antigens, such as bacteria or viruses, and aiding in their destruction.</li> <li>○ IgM is the first antibody that the body makes when it fights a new infection and it does not stay for long while IgG can take time to form after an infection or immunization thus indicating an old infection.</li> </ul> </li> <li>• <b>If antibodies are present</b> in the sample, these bind to the antigen immobilised on the test strip and give a coloured reaction.</li> <li>• These are carried out for symptomatic individuals and have to be confirmed by molecular tests.</li> <li>• It is also <b>helpful tool for scientist to determine</b> the extent to which a disease has spread and how many have developed immunity to it.</li> </ul>
<b>Molecular Test/ Reverse-Transcription Polymerase Chain Reaction (RT-PCR) test:</b>	<ul style="list-style-type: none"> <li>• This <b>identifies the presence of virus itself based on its genetic fingerprint</b>.</li> <li><b>RT-PCR Test:</b> <ul style="list-style-type: none"> <li>• When a person is suspected to be suffering from COVID-19, an oral/nasal swab is taken.</li> <li>• <b>Viral Ribonucleic Acid (RNA)</b> is isolated from these swabs using a variety of chemicals.</li> <li>• Enzymes are then added to transcribe the RNA into DNA. This DNA is put into a real-time PCR (RT-PCR) machine that xeroxes the DNA, making thousands of copies of any genetic material in the samples.</li> <li>• Scientists then <b>use sets of DNA fragments</b> that complement fragments found in the coronavirus.</li> <li>• <b>If any viral genetic material is present, these fragments will bind to it.</b></li> <li>• Chemical markers attached to the DNA release fluorescence when this DNA binding occurs.</li> <li>• It's these flashes of fluorescence that scientists use to determine whether the virus is present in a sample.</li> </ul> </li> </ul>
<b>Pool Testing Method</b>	<ul style="list-style-type: none"> <li>• Developed by German Red Cross Blood Donor Service in Frankfurt</li> <li>• It involves <b>simultaneously testing a combined sample from multiple people</b> from a household or a local cluster to widen reach and speed up results. <b>Suitable for expanded testing in larger population groups.</b></li> <li>• In the case of a positive mini-pool result, individual testing is carried out in previously reserved samples. In the case of a negative result, all included samples have a reliable negative result.</li> <li>• It was <b>earlier used during large outbreaks and invisible community transmission, such as of HIV.</b></li> </ul>

### India's Approach

- ICMR's **initial strategy was of testing those with a travel history and showing symptoms**, and those who have come in contact with persons having a travel history.
- Lately it was **revised to test all pneumonia patients** for novel coronavirus, hospitals across the country have taken to testing all patients admitted with severe respiratory illnesses.

- The new guidelines state **asymptomatic direct and high-risk contacts of a confirmed case should be tested** once between Day 5 and Day 14 of coming in to the contact of infected person.
- The testing strategy is reviewed and updated by the constituted National Task Force along with a member of the government think-tank, NITI Aayog.
- In India, it has been recommended by ICMR to conduct Rapid Antibody Detection tests **in areas reporting clusters of COVID-19 cases, in large migration gatherings and evacuee centres.**
  - **HLL Lifecare Limited, a Central Government Enterprise under Ministry of Health and Family Welfare** is the first public sector company in India to get approval from ICMR for manufacturing and supplying the Rapid Antibody kit for COVID-19 detection.
- Positive Test results from Rapid Antibody tests are confirmed by RT-PCR tests.
  - **Pune based molecular diagnostic company Mylab developed indigenous RT-PCR based diagnostic test kits.** It can test 100 samples and costs 1,200 rupees (a quarter of the 4,500 rupees that India pays to import COVID-19 testing kits from abroad).
- Indian Council of Medical Research (ICMR) allowed all national research laboratories including those under the Council of Scientific and Industrial Research (CSIR) to conduct testing for the novel coronavirus.
- ICMR has suggested Pool Testing Method for the low prevalence areas, where the positive case rate is less than 2 percent. Here, about five samples are clubbed together for a single test. It is to be avoided in all areas where the positive case rate exceeds five percent.
- ICMR introduced Rapid Antibody and Pool Tests to Speed-Up Coronavirus Testing in India

### 7.1.3. TREATMENT

To date, there is **no vaccine and no specific drug to treat COVID-2019.** The most effective measure has been to isolate people who have tested positive, quarantine them and increase social distancing to contain the spread of virus.

#### Proposed and potential drugs:

**WHO has recommended four drugs and their combination under its Solidarity trial initiative** to find out whether any can treat infection. Those are:

- **Remdesivir:** It was **previously tested as an Ebola treatment** and generated promising results in animal studies for MERS and SARS.
- **Chloroquine and hydroxychloroquine:** are very closely related and **used to treat malaria and rheumatology conditions respectively.**
- **Ritonavir/lopinavir:** It is a **licensed treatment for HIV.**
- **Ritonavir/lopinavir with Interferon beta-1a:** **Interferon beta-1a** is a molecule involved in **regulating inflammation in the body** and is used to treat multiple sclerosis.

#### Convalescent Plasma Therapy:

The US Food and Drug Administration (FDA) approved use of blood plasma from recovered patients to treat severely critical COVID-19 patients.

- **About plasma therapy**
  - It **seeks to make use of the antibodies developed in the recovered patient** against the coronavirus.

#### Genome sequencing of the coronavirus

- **India has shared nine whole genome sequence data of the novel coronavirus (SARS-CoV-2)** with the **Global Initiative on Sharing All Influenza Data (GISAID).** The sequences were shared **by the Pune-based National Institute of Virology.**
- Genome sequencing is **figuring out the order of DNA nucleotides, or bases, in a genome that make up an organism's DNA.** The human genome is made up of over 3 billion base pairs. 30,000 base have been identified in the genome of coronavirus.
- Genetic research would **help scientists understand** the nature and the evolution of the novel coronavirus, origin of the virus and how the virus has spread. This information will thus **help in development of a vaccine and efficient treatment** methodology.
- Since the coronavirus may be mutating and developing into new strains, it has been suggested that India needs to sequence more strains to understand it better.
- **Global Initiative on Sharing All Influenza Data (GISAID)**
  - It is a **platform started by WHO in 2008** and **hosted by the German government in partnership with nonprofit organization Friends of GISAID.**
  - It **promotes the international sharing of** all influenza virus sequences, related clinical and epidemiological data associated with human viruses, and geographical as well as species-specific data associated with avian and other animal viruses,.
  - The Initiative **through its database named EpiFlu** ensures that open access to data is provided free-of-charge and to everyone to help researchers understand how the viruses evolve, spread and potentially become pandemics.

- The whole blood or plasma from such people is taken, and the plasma is **then injected in critically ill patients so that the antibodies are transferred and boost their fight** against the virus.
- Either a **blood fractionation process** is used to separate the plasma from the donated blood or a special machine called **apheresis machine** can be used to extract the plasma directly from the donor.
- **WHO guidelines(2014) for plasma therapy:**
  - ✓ **Donor's permission is mandatory** before extracting plasma.
  - ✓ Plasma from **only recovered patients** must be taken,
  - ✓ Donation must be done **from people not infected with HIV**, hepatitis, syphilis, or any infectious disease.
  - ✓ If plasma needs to be collected again from the same person, it must be done after 12 weeks of the first donation for males and 16 weeks for females.
- **Previous usage of this therapy**
  - ✓ The United States used plasma of recovered patients to treat patients of **Spanish flu (1918-1920)**.
  - ✓ Hong Kong used it to treat **SARS patients** in 2005.
  - ✓ In 2009, **H1N1 patients** were treated with plasma.
  - ✓ Democratic Republic of Congo and Guinea used it to treat **Ebola patients in 2014**.
  - ✓ In 2015, plasma was used for **treating MERS patients**.

#### WHO Solidarity Trial Initiative

- It is an **international clinical trial to help find an effective treatment for COVID-19**, launched by the World Health Organization and partners.
- It **will compare four treatment options** against standard of care, to assess their relative effectiveness against COVID-19.
- Enrolling patients in one single randomized trial will help facilitate the rapid worldwide comparison of unproven treatments. This will overcome the risk of multiple small trials not generating the strong evidence needed to determine the relative effectiveness of potential treatments.

#### India's approach

- Indian government has declared **Hydroxychloroquine (HCQ) as a schedule H1 drug**, that can be sold on prescription only as per the Drugs and Cosmetics Rules, 1945.
- ICMR has advised use of **HCQ for high risk individuals** like health workers and the asymptomatic household contacts of lab-confirmed cases to shield them from the infection.
- **India has never used the Plasma Therapy before** though India has facilities for removing 500 ml of plasma from a donor using apheresis. India is soon to begin two clinical trials of Convalescent plasma therapy.

### 7.1.4. VACCINE DEVELOPMENT

- There are more than 20 vaccines currently in development with two in clinical trial phase involving human testing.
- **Vaccines developed by Moderna and Oxford university are amongst eight candidates selected and funded by Coalition for Epidemic Preparedness Innovations (CEPI)**, the world body coordinating the efforts against COVID 19.
- Other than the eight CEPI-funded vaccines, there are also 14 other institutions including two from India: **Pune-based Serum Institute of India and Ahmedabad based Zydus Cadila**, which are engaged in developing vaccine for this infectious disease.
- A Phase I safety trial of a recombinant adenovirus vaccine candidate manufactured by CanSino Biologics Inc. (Tianjin, China), called **Ad5-nCoV**, began in China.

#### Challenges with vaccines development in case of Pandemics

- **Before a vaccine is available the pandemic will probably have peaked and declined.**
- **As soon as a vaccine is approved, it's going to be needed in vast quantities.**
- **In case of a pandemic, countries also have to compete with each other for medicines. The challenge is to make sure the vaccine gets to all those who need it.**
- Because pandemics tend to hit hardest those countries that have the most fragile and underfunded healthcare systems, there is **an inherent imbalance between need and purchasing power** when it comes to vaccines. During the 2009 H1N1 flu pandemic, for example, vaccine supplies were snapped up by nations that could afford them, leaving poorer ones short.

#### Vaccine Development Process

There are six stages of vaccine development which takes around 12-15 years to complete.

- **Exploratory:** This research-intensive phase of the vaccine development process is designed to identify “natural or synthetic antigens that might help prevent or treat a disease.”
- **Pre-clinical:** During this phase, researchers — usually in private industry — use tissue-culture or cell-culture systems and animal testing to determine whether the candidate vaccine will produce immunity. Many candidate vaccines don’t move on to the next stage of development because they fail to produce that immunity or prove harmful to test subjects.
- **Clinical development:** At this point, a sponsor, usually a private company, submits an application for to an authorising agency like FDA of USA. This summarizes findings to date and describes how the drug will be tested and created. An institution that will host the clinical trial holds a review board for approval of the application. Once the proposal has been approved, the vaccine must pass three trial stages of human testing:
- **Regulatory review and approval:** If a vaccine passes through all three phases of clinical development, the vaccine developer submits a Biologics License Application (BLA) to the authorizing agency.
- **Manufacturing:** Major drug manufacturers provide the infrastructure, personnel and equipment necessary to create mass quantities of vaccines. They also reap the profits of successful or widely distributed drugs.
- **Quality control:** Stakeholders must adhere to procedures that allow them to track whether a vaccine is performing as anticipated. Multiple systems — including Phase IV trials (optional studies that can be conducted following the release of a vaccine), the Vaccine Adverse Event Reporting System (VAERS) and the Vaccine Safety Datalink — are designed to monitor the performance, safety and effectiveness of an approved vaccine.

### Types of Vaccines

- **Live Attenuated Virus (LAV):**
  - Uses a weakened (or attenuated) form of the germ that causes a disease.
  - Because these vaccines are so similar to the natural infection that they help prevent, they create a strong and long-lasting immune response. Just 1 or 2 doses of most live vaccines are enough to give a lifetime of protection against a germ and the disease it causes.
  - **Used in case of Measles, Rubella (MMR combined vaccine), Tuberculosis, Rotavirus, Oral Polio Vaccine (OPV), Yellow fever etc.**
- **Inactivated vaccines:**
  - Uses the killed version of the germ that causes a disease.
  - These vaccines usually don’t provide immunity that’s as strong as live vaccines so several doses over time (booster shots) is needed to get ongoing immunity against diseases.
  - **Used in case of Polio (IPV), Pertussis, Hepatitis A etc.**
- **Subunit and Recombinant vaccines**
  - use only part of a target pathogen like its protein, sugar, or capsid (a casing around the germ) presenting it as an antigen on its own to provoke a response from the immune system.
  - It can also be created via genetic engineering. A gene coding for a vaccine protein is inserted into another virus, or into producer cells in culture. When the carrier virus reproduces, or when the producer cell metabolizes, the vaccine protein is also created. **The end result of this approach is a recombinant vaccine:** the immune system will recognize the expressed protein and provide future protection against the target virus.
  - **Used in case of Haemophilus Influenza type B(Hib). The Hepatitis B vaccine currently used in the United States is a recombinant vaccine.**
- **Conjugate vaccines**
  - Similar to recombinant vaccines but are made using pieces from the coats of bacteria. These coats are chemically linked to a carrier protein, and the combination is used as a vaccine.
  - Conjugate vaccines are used to create a more powerful, combined immune response: typically the “piece” of bacteria being presented would not generate a strong immune response on its own, while the carrier protein would.
  - The vaccines **currently in use for children against pneumococcal bacterial infections** are made using this technique.
- **Toxoid vaccines**
  - Uses a toxin (harmful product) made by the germ that causes a disease.

- They create immunity to the parts of the germ that cause a disease instead of the germ itself.
- booster shots are needed to get ongoing protection against diseases.
- **Used in case of Tetanus and Diphtheria.**
- **RNA vaccine**
  - Unlike a normal vaccine, RNA vaccines **work by introducing an mRNA sequence (the molecule which tells cells what to build) which is coded for a disease specific antigen**, once produced within the body, the antigen is recognised by the immune system, preparing it to fight the real thing.
  - RNA vaccines are **faster and cheaper to produce than traditional vaccines**, and an RNA based vaccine is also safer for the patient, as they are not produced using infectious elements.
  - Production of RNA vaccines is **laboratory based, and the process could be standardised and scaled**, allowing quick responses to large outbreaks and epidemics.
  - Most **current research is into RNA vaccines for infectious diseases and cancer.**
  - **No vaccine made from genetic material – RNA or DNA – has been approved till date.**

### 7.1.5. STEPS TAKEN BY INDIA TO DEAL WITH THE OUTBREAK

Indian government took multi-pronged and timely actions as the virus spread from China to many parts of the world.

#### Quarantine, Lockdown, Social Distancing and Awareness Generation

- **Suspending visas and quarantining** all incoming travelers with **subsequent International travel ban.**
- **Restrictions on International traffic through land borders.**
- **21-day nationwide lockdown** (Extended by 19 more days) involving closure of all non-essential public places, suspension of railways, intercity bus services and urban metros.
- **Cluster containment strategy** adopted in the states with high threat of community transmission. The strategy is to contain the virus in a defined geographic area, and help detect the cases at an early stage, break the chain of transmission and prevent its spread to new areas.
- **Increasing awareness on importance of social distancing practices.**
- **Guidelines were issued on use of masks by public and self-quarantine measures.**
- **Information, Education, & Communication (IEC) material (posters and pamphlets)** regarding coronavirus (COVID-19) are being prominently displayed for awareness of the general public in local languages at railway stations and in trains and are also being distributed to patients visiting hospitals and in railway colonies.
- **Dedicated TV and Radio Spots (English & Hindi) disseminating information and precautionary measures for public.**
- **Comic book “KIDS, VAAJU and CORONA” for children** by Ministry of Health and Family Welfare (MoHFW) to provide correct information about COVID-19.
- **Awareness material specifying Do’s and Don’ts during COVID-19 outbreak by MoHFW in English and Hindi.**

#### Significance of 21 Days Lockdown strategy

- There is a **scientific basis and epidemiological meaning to this number.**
- Its **calculations are based on the incubation period of the virus** in a human host. i.e. the time between the entry of virus to the onset of symptoms.
- **The first 14 days is observed as the incubation period. The next 7 days is added for the residual infection to die out.**
- As per the public health experts, this is the **most effective way of preventing the spread of the infection** from those already infected into the community and thus **critical to break infection chain** of Coronavirus.
- A recent study inferred that the **median incubation period for COVID-19 is just over five days** and 97.5% of people develop symptoms within 11.5 days of infection.
- A lockdown period also **creates awareness** of the situation, **disinfection of all buildings, vehicles and surfaces** are carried out in this period and the period **allows hospitals to prepare for the next phase of operations.**
- Such a quarantine period has been **discussed even in the context of Ebola.**

#### Legislative Actions For Better Coordination With States

- **Disaster Management Act 2005** under which powers conferred on Union Home Secretary were delegated to Secretary, Ministry of Health and Family Welfare to enhance preparedness and containment of the disease.



**COVID-19 was declared as a "notified disaster"** enabling states to spend a larger chunk of funds from the State Disaster Response Fund (SDRF) to fight the pandemic.

- **Epidemics Diseases Act of 1897**, under which states were allowed to take appropriate measures that are needed to implement the prevention of infection, and anyone contravening the provisions is amenable to prosecution.
- **Essential Commodities Act, 1955** under which masks (2ply & 3ply surgical masks, N95 masks) and hand sanitisers were declared as essential commodities to regulate their production, quality, distribution and logistics and to ensure prevention of hoarding, black marketing and profiteering of these items.
  - An advisory was also issued under the **Legal Metrology Act, 2009** for States to ensure that these items are not sold for more than their MRP.
- **High level multi-disciplinary Central teams were deputed** by Ministry of Health and Family Welfare to assist the States and State Health Department in activities pertaining to cluster containment plan and hospital preparedness (ICU & Ventilator management for COVID-19 patients).
- **Emergency Response and Health System Preparedness package** to the states aimed at boosting national and state health systems to support the procurement of essential medical equipment and drugs, and the strengthening of surveillance activities.
- **Lifeline UDAN** an initiative of Ministry of Civil Aviation for air transport of medical cargo and essential supplies across India amid lockdown.
- **11 Empowered groups were set up** for ensuring a comprehensive and integrated response to the COVID-19 pandemic.

#### **Protecting Marginalized And Vulnerable Sections**

- Under the **National Food Security Act (NFSA), 2013** government announced distribution of 5 kg of wheat or rice and one kg of preferred pulses free-of-cost every month over the next three months to 80 crore poor across the country **to ensure availability food to poor people during lockdown** due to COVID-19.
- **Wage rates for unskilled manual workers was hiked** across all states and Union territories under the **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)** for the financial year 2020-21.
- **Prime Minister's Garib Kalyan package** of Rs. 1.7 lakh crore for a range of measures **to alleviate the economic, health, and food-related distress of India's poor** in the wake of the **national lockdown** to combat the spread of the novel coronavirus. *(Details are covered under Schemes in news section.)*
- **Rs 50 lakh insurance cover per person for frontline health workers** involved in managing the Coronavirus (COVID-19) outbreak would include sanitation staff, doctors, Asha workers, paramedics and nurses.
- **Free cooking gas cylinders** for 8.3 crore families living below the poverty line
- **Ex-gratia amount** was announced for 3 crore senior citizens, the disabled and widows amongst the poor.

#### **Leveraging the Use of Technology**

- **PM Innovate challenge** inviting applications from individuals, startups and companies to provide innovative technological solutions to fight the virus.
  - For the first time, the government has released data sets for researchers, including those on genome sequencing, epidemiological data repository by Johns Hopkins University Center, Genetic Sequences related to COVID-19, etc.
- Fight Corona IDEathon a **2-day online ideathon** to find accessible and affordable technological solutions that can contain the rapid spread of COVID-19 was held.
  - It was organised by **All India Council for Technical Education** and MHRD Innovation Cell and other partners.
- Proposals were invited by Science & Engineering Research Board (SERB) as part of its **Intensification of Research in High Priority Areas (IRHPA) scheme** to ramp up national R&D efforts for new antivirals, vaccines, and affordable diagnostics.
- **'Samadhan' challenge** launched by the Innovation Cell of the Ministry of Human Resource for student innovators, researchers, educators and startups to invite ideas and innovations that can help fight against the coronavirus outbreak.

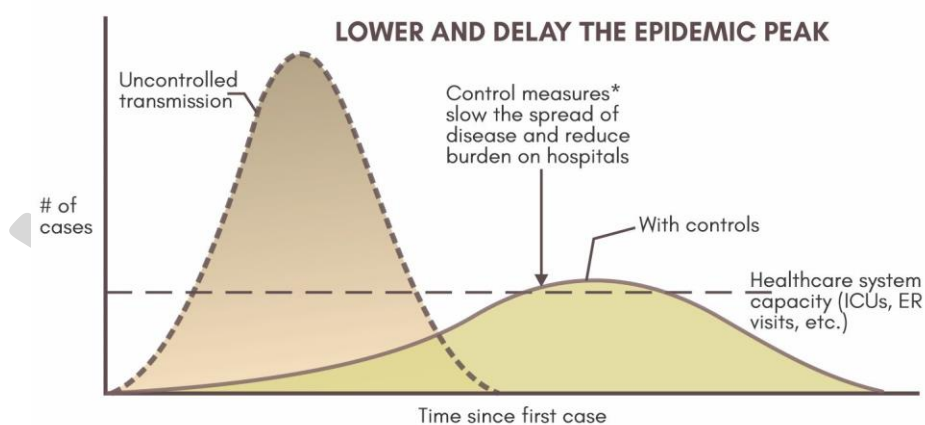
- **Centre for Augmenting WAR with COVID-19 Health Crisis (CAWACH)** initiative of Department of Science and Technology to extend timely support to potential start-ups by way of the requisite financial assistance and fund deployment targeting innovations to control COVID-19 that are deployable in the market within next 6 months.
- COVID-19 National Teleconsultation Centre (CoNTeC) is a **Multi-modal Telemedicine Hub established by AIIMS, New Delhi**, wherein expert **doctors from various clinical domains will be available 24x7** to answer the multifaceted questions from specialists from all over the country for treatment of the COVID-19 patients.
  - It has been conceptualised by the Ministry of Health & Family Welfare.

#### OTHER STEPS

- To provide relief to the affected, a public charitable trust under the name of 'Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund' (PM CARES Fund)' was set up.
- **Evacuations of Indians from various COVID-19 affected countries.**
- **Ban on the exports** of personal protective equipment, including surgical masks, gloves and N95 respirators.
- **Exemptions from basic customs duty and health cess** on the import of ventilators, face masks, surgical masks, personal protection equipment (PPE), COVID-19 test kits.
- **Incentive scheme** to boost domestic manufacturing of active pharmaceutical ingredients (APIs),
- **Allowing 'high quality' private labs to test** for COVID-19 to increase testing capacity in India
- **Quarantine facilities were set up by Indian Defence Forces.**
- **30% pay cut for all members of Parliament and suspension of the Member of Parliament Local Area Development (MPLAD) fund** for two years thus sending a message that the country should be ready for sacrifices in its fight against the COVID-19 pandemic and using these funds to strengthen the government's efforts in managing the challenges and adverse impact of COVID-19 in the country.

#### CONCEPT OF FLATTENING THE CURVE

- The WHO has repeatedly underlined the importance of "flattening the curve" in order to tackle the coronavirus outbreak, calling on countries around the world to impose sweeping public health measures.
- **This approach is saving lives and buying time for the development of vaccines and treatments.**
- In epidemiology, the **curve refers to the projected number of new cases** over a period of time.
- The idea of flattening the curve is **to stagger the number of new cases over a longer period, so that people have better access to care.**
- It **explains why so many countries are implementing draconian policies**, such as social-distancing guidelines, "shelter in place" orders, restrictive travel measures and asking citizens to work or engage in schooling from home.



- The above chart shows two curves with two very different virus reproduction rates.
- **In the steepest curve, the virus reproduces quickly in a short period of time.** In this scenario, emergency rooms, intensive care units and other parts of the health care system are overwhelmed. In an overwhelmed system, mortality rates can be high and those infected may not get the treatment they need.
- **In the second, flatter curve, controls help slow the spread of the virus.** Infections occur, but over a longer period of time. Since health care workers and facilities are not overwhelmed, those infected receive better treatment and fewer deaths occur.

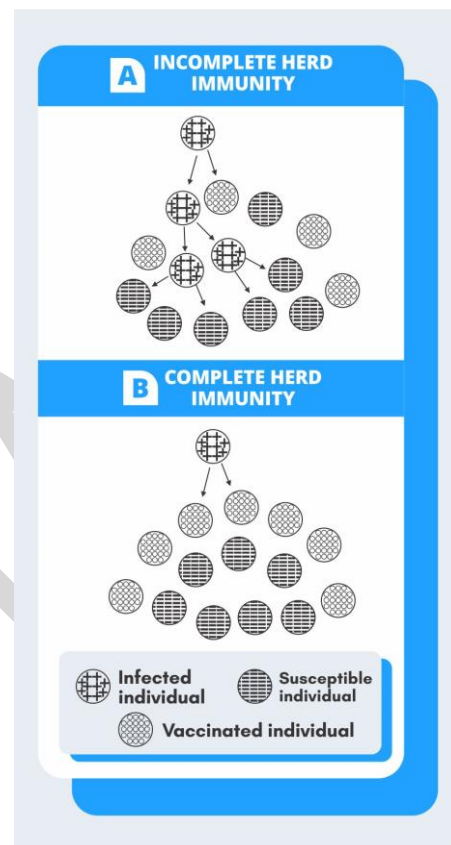
## 7.1.6. HERD IMMUNITY

### Why in news?

Natural herd immunity was **advocated for some time by the UK government as a strategy to contain the COVID-19 pandemic** in their country.

### About the concept

- It is the **indirect protection from a contagious infectious disease** that happens when a population is immune **either through vaccination or immunity developed through previous infection**.
- **Vaccinated or immune people act as a buffer** between the infected persons and people who aren't vaccinated, or in whom the vaccine doesn't trigger immunity.
- Once herd immunity has been established for a while, and the **ability of the disease to spread is hindered**, and can eventually be eliminated.
- Mass vaccination has been highly successful in inducing herd immunity for many diseases, protecting those that are unable to build up immunity, such as people with immune deficiencies or whose immune systems are being suppressed for medical reasons.
- Herd immunity was **recognized as a naturally occurring phenomenon in the 1930s during the measles outbreak**.
- It **does not apply to all diseases, just those that are contagious**, meaning that they can be transmitted from one individual to another. **Tetanus, for example, is infectious but not contagious, so herd immunity does not apply.**

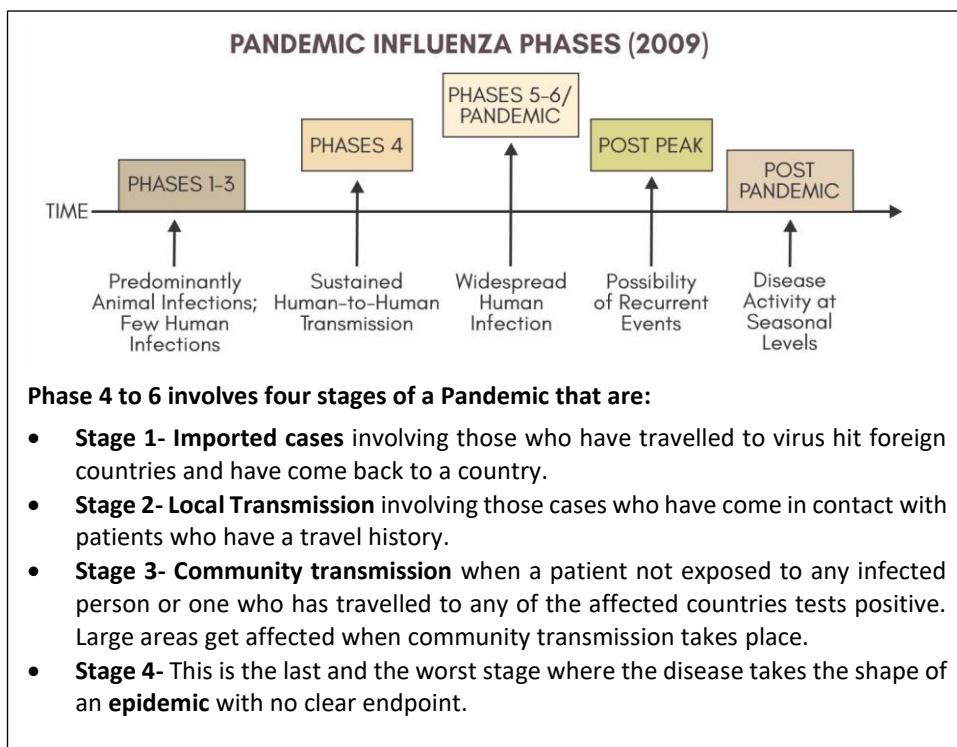


### Challenges in creating Herd Immunity



- **Percentage of immune population**
  - The **more infectious a disease, the greater the population immunity needed** to ensure herd immunity.
  - For example, measles is highly contagious and one person with measles can infect up to 18 other people. In this case around 95% of people need to be immune in order for the wider group to have herd immunity.
  - The new coronavirus has a lower infection rate than measles, with each infected person passing it on to two or three new people, on average. For this, herd immunity should be achieved when around 60% of the population becomes immune to COVID-19.
- **Natural herd immunity**
  - It is **achieved through infection rather than vaccination**.
  - It can be challenging to induce it through unchecked infection as there would be a very high rate of serious illness and death, with health systems overwhelmed well beyond their surge capacity, even in high-income countries.
  - This is why herd immunity is generally pursued through vaccination programmes.
- **Mutation within the organism**
  - Even when vaccines are available, it is **not always possible to achieve herd immunity for very long**.
  - Some viruses, such as seasonal flu, mutate frequently, evading the body's immune response.
  - So immunity doesn't always last forever, which is why the flu shot is necessary every single year.
- **Free Riders Problem**
  - When herd immunity is well established, however, some people choose to behave as **'free riders', essentially benefitting from everyone else getting vaccinated**, while abstaining from vaccination either because they choose not to or are actively anti-vaccination.
  - When a population has too many of these free riders, the overall immunity level is compromised and herd immunity can be lost, putting everyone at risk.

## 7.1.7. PANDEMIC DISEASE

- In March, 2020 WHO publicly characterized **COVID-19 as a pandemic**:
- According to the World Health Organization, a **pandemic is declared when a new disease for which people do not have immunity spreads around the world and between people sustainably beyond expectations.**



- Declaring a pandemic has nothing to do with changes to the characteristics of a disease, but is instead associated with concerns over its geographic spread.
- The use of this term highlights the importance of countries throughout the world working cooperatively and openly with one another** and coming together as a united front in efforts to bring the situation under control. However, if declaring a pandemic triggers global panic, this can defeat the purpose of trying to raise awareness.
- There is no threshold, such as a certain number of deaths or infections, or number of countries affected, that needs to be met in order to declare a disease as pandemic.** For example, the SARS coronavirus, identified in 2003, was not declared a pandemic by the WHO despite affecting 26 countries. However, its spread was contained quickly, and only a handful of nations were significantly affected, including China, Hong Kong, Taiwan, Singapore and Canada.
- COVID-19 is the first pandemic known to be caused by the emergence of a new coronavirus.** In the past century, there have been four pandemics caused by the emergence of novel influenza viruses. As a result, most research and guidance around pandemics is specific to influenza.
- The **last pandemic declared was in 2009 during the outbreak of H1N1 flu**, commonly known as the swine flu which killed up to 575,000 people in the past decade.
- Pandemics of the past century were influenza-related** and charted in six phases WHO used to make recommendations based on the severity of a disease's spread.

EPIDEMIC VERSUS ENDEMIC	
	
<b>EPIDEMIC</b>	<b>ENDEMIC</b>
A widespread occurrence of an infectious disease in a community at a particular time	A regularly found disease among particular people or in a certain area
Cause a significant damage to the living organisms within a short period of time	Prevalent in a certain region or population
Rate of infection continuously increases	Rate of infection is constant
Ex: smallpox, H1N1, black plague	Ex: malaria, tuberculosis, chicken pox, etc.

### Public health emergency of international concern (PHEIC)

- Earlier in January 2020, the World Health Organization declared the COVID-19 outbreak a **"public health emergency of international concern" (PHEIC)**.
- PHEIC is a formal declaration by the International Health Regulations Emergency Committee** of World Health Organization (WHO) of "an extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response", formulated when a situation arises that is "serious, sudden, unusual or unexpected".
- It is **not only confined to infectious diseases**, and may cover an emergency caused by a chemical agent or a radio nuclear material.

- Under the **2005 International Health Regulations (IHR)**, states have a legal duty to respond promptly to a PHEIC.
- **Emergency Committee (EC)** under the IHR was developed following the SARS outbreak of 2002–03.
- **PHEIC declarations so far:** Since 2009 there have been six PHEIC declarations: the 2009 H1N1 (or swine flu) pandemic, the 2014 polio declaration, the 2014 outbreak of Ebola in Western Africa, the 2015–16 Zika virus epidemic, the ongoing 2018–20 Kivu Ebola epidemic, and the ongoing 2019–20 coronavirus pandemic.
- **The recommendations are temporary and require reviews** every three months.

## 7.2. ONE HEALTH

### Why in news?

There has been an increased focus across the world on one health approach in the light of global outbreak of COVID-19.

### About the concept

- The term ‘One Health’ was **first used in 2003–2004, in association with the emergence of severe acute respiratory disease (SARS)** in early 2003 and subsequently by the spread of highly pathogenic avian influenza H5N1, and by the series of strategic goals known as the ‘**Manhattan Principles**’.
- It is a **collaborative, multisectoral, and transdisciplinary approach** — working at the local, regional, national, and global levels — with the goal of achieving optimal health outcomes **recognizing the interconnection between people, animals, plants, and their shared environment**.
- Successful public health interventions **require the cooperation of Professionals in human health** (doctors, nurses, public health practitioners, epidemiologists), **animal health** (veterinarians, paraprofessionals, agricultural workers), **environment** (ecologists, wildlife experts) along with other relevant players including law enforcement agencies, policymakers, agriculture, communities, and even pet owners.
- **One Health issues include** zoonotic diseases, antimicrobial resistance, food safety and food security, vector-borne diseases, environmental contamination, and other health threats shared by people, animals, and the environment.

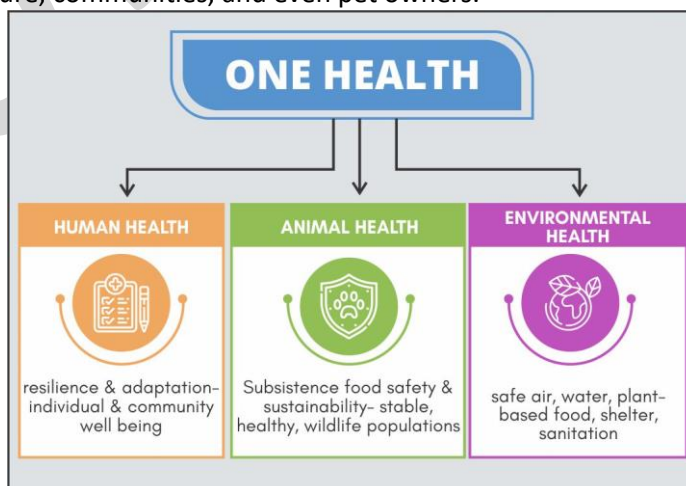
### Manhattan Principles

- These were **derived at a meeting of the Wildlife Conservation Society in 2004**, which clearly recognised the link between human and animal health and the threats that diseases pose to food supplies and economies.
- These are **the set of 12 principles** as a vital step in recognising the critical importance of collaborative, cross-disciplinary approaches for responding to emerging and resurging diseases, and in particular, for the inclusion of wildlife health as an essential component of global disease prevention, surveillance, control, and mitigation.

### Relevance of one health

In recent times, many factors have changed interactions between people, animals, plants, and our environment and have led to the spread of existing or known (endemic) and new or emerging zoonotic diseases:

- **Climate and land use change:** The earth has experienced changes in climate and land use, such as deforestation and intensive farming practices. Disruptions in environmental conditions and habitats can provide new opportunities for diseases to pass to animals.
  - **Animals also share our susceptibility to some diseases and environmental hazards.** Because of this, they can sometimes serve as early warning signs of potential human illness. For example, birds often die of West Nile virus before people in the same area get sick with West Nile virus infection.
- **Geographic expansion of human habitats:** Human populations are growing and expanding into new geographic areas. As a result, more people live in close contact with wild and domestic animals, both livestock and pets.



- **Role of animals:** Animals play an important role in our lives, whether for food, fiber, livelihoods, travel, sport, education, or companionship. Close contact with animals and their environments provides more opportunities for diseases to pass between animals and people.
  - As per the studies, **60% of known human infectious diseases have their source in animals** (whether domestic or wild).
- **Increased global interactions:** International travel and trade has led to the unprecedented flow of commodities, people and animals. This gives pathogens of all kinds of opportunities to spread and multiply around the world.

#### Systemic challenges that must be addressed to implement one health

- **Institutions:** The creation of One Health organizations at various levels, with integrated missions to improve human, animal, and environmental health, would improve global health.
- **Funding and capacity:** This need to be addressed by creating more schools of veterinary medicine, both domestically and globally.
- **Education, and Jobs:** Few qualified veterinarians are pursuing careers in livestock and wildlife health, probably because limited jobs are available. Successfully implementing One Health also requires a global network of qualified individuals.

## 7.3. TELEMEDICINE GUIDELINES

### Why in news?

**Ministry of Health and Family Welfare** issued guidelines for telemedicine. The guidelines were prepared in collaboration with **NITI Aayog and Medical Council of India**.

### About Telemedicine

- **World Health Organization defines telemedicine** as the delivery of health-care services by health-care professionals using **information and communications technologies** for diagnosis, treatment and prevention of disease and injuries, with the aim of advancing the health of individuals and communities.
- Telemedicine comprises **remote diagnosis and treatment of patients by means of telecommunications such as video, phone, chatting apps, etc.**

### Key features of guidelines

- Only registered medical practitioners (RMPs) under the **Indian Medical Council Act 1956**, are entitled to provide telemedicine consultation, after completing an online course.
- Telemedicine **consultations should not be anonymous**, both patient and doctor should know each other's identity.
- It provides provisions for protecting **privacy and confidentiality** of the patients.
- It **mentions platforms** that can be used for diagnosis and treatment and how the technology can be integrated to provide robust healthcare services. The government has also listed out certain drugs that cannot be prescribed through telemedicine.
- It **provides norms and protocols** relating to physician-patient relationship; issues of liability and negligence; evaluation, management and treatment; continuity of care; referrals for emergency services; privacy and security of the patient records and exchange of information; prescribing; and reimbursement; health education and counseling.

### Advantages of Telemedicine

- **Increased access of healthcare:** Telemedicine can overcome geographic barriers to healthcare, especially for specialized providers. Telemedicine can be particularly beneficial for patients in medically underserved communities and those in rural geographical locations where clinician shortages exist.
- **Reduced healthcare costs:** Telemedicine can **increase efficiency** of care delivery, **reduce expenses** of caring for patients or transporting to another location, and can even keep patients out of the hospital.
- **Enhances traditional face-to-face medicine:** With telemedicine care providers **can continue to care for patients in-person care** while still providing the **flexibility and convenience** of seeing patients remotely for follow up visits, check-ups, and education when appropriate or necessary.

- **Improved patient engagement and satisfaction:** Telemedicine makes it easier and convenient for patients to stay engaged in their health care. The convenience, flexibility and real-time care with their providers enhances overall quality of health.

### Challenges of Telemedicine

- **Accessibility to technology:** Due to cost, low digital literacy, lack of awareness, non-availability in local languages- make telemedicine inaccessible to the vulnerable and those in rural areas.
- **Privacy Concerns:** Telemedicine services be a gateway to security and privacy issues, while accessing patient data over the Internet.
- **Patient preference,** as patients still prefer **in-person exams over virtual visits**, due to various reasons like, concerns related to privacy, technological literacy etc. Also, patients might prefer telehealth visits with physicians they know.

### Conclusion

Telemedicine guidelines are a much-needed step in right direction. Rapid advancements in connected care technology, big data and analytics will move telemedicine into the mainstream. The **proliferation of smart devices coupled with democratization of the internet** poised to make teleconsultations much more convenient, accessible.

## 7.4. PHARMACEUTICAL AND MEDICAL DEVICES INDUSTRY IN INDIA

### Why in news?

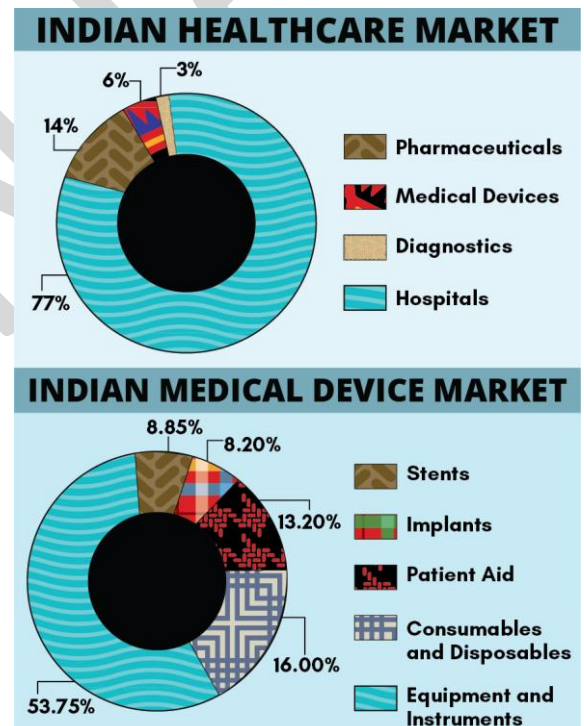
Recently, **Cabinet approved** a series of Schemes to give an impetus to the Pharmaceutical and Medical Devices Industries in India.

### Background

- India is the **largest provider of generic medicines globally**, occupying a 20% share in global supply by volume, and also supplies 50% of global demand for vaccines. (Leader in Global Supply of **DPT** (Diphtheria, Tetanus, Pertussis), **BCG** (Bacillus Calmette–Guérin) and **Measles Vaccine**)
  - India **ranks 3rd worldwide for production by volume** and 13th by value.
  - India is the source of 60,000 generic brands and manufactures more than **500 different Active Pharmaceutical Ingredients (APIs)**.
  - The pharmaceutical industry was **valued at \$ 36.7 bn in 2018** and is expected to reach \$ 55 bn over 2015-20.
  - **100% Foreign Direct Investment (FDI)** is allowed under the automatic route for greenfield pharma.
  - The Department of Pharmaceuticals aims to make the country a hub for end-to-end drug discovery under its **‘Pharma Vision 2020’**.

- **Medical Device is also growing sector** and its potential for growth is the highest among all sectors in the healthcare market.

- It is valued at Rs. 50,026 crores for the year 2018-19.
- Medical devices are **segregated into different major segments**, of which equipment and instruments (surgical and non-surgical) form the largest portion.
  - ✓ Other segments include Consumables and Disposables; Patient Aid; Implants; Stents etc.



### About API and KSM

- **Active pharmaceutical ingredient (API)**, is biologically active component of a drug product (e.g. tablet, capsule).
  - Drug products are usually composed of several components. The aforementioned API is the primary ingredient.
  - 70% of India's API imports are imported from China.
- **KSM** (key starting material) are the building block for the API.

- India depends on **imports up to an extent of 85% of total domestic demand of medical devices**. In some specific bulk drugs, the import dependence is 80 to 100%.

### Challenges of Pharmaceutical and Medical Devices Industry

- **Global factors:** Globally, following aspects have led to a severe impact on exports in manufacturing, which have also brought a slowdown in the domestic market. These include-
  - higher level of customer consolidation,
  - increased competition & number of products approvals,
  - decreased value from new product launches
  - increased pricing control & protectionism.
- **Generic Drugs sector facing challenges:** Our strong position as a global supplier of high quality, affordable and accessible generic medicines has been impacted due to **recent compliance challenges and low productivities**.
- **Evolving regulatory landscape:** Several interventions over the years have had an impact across the value chain- from development, manufacturing and supply chain to pricing and customer engagement.
  - Compliance issues are affecting the reliability of supply as while many Indian companies have fared well in regulatory audits others continue to face challenges.
- **Import dependency:** India continues to rely on imports of key starting materials, intermediates and API's for, China. This potentially exposes us to **raw material supply disruptions and pricing volatility**.
  - The industry should therefore, also explore **alternate sourcing locations (such as Vietnam, Indonesia)** while indigenous capabilities & capabilities ramp up.
  - Recent lockdown in China due to COVID 19 had caused disruption in Indian pharmaceutical industry.
- **Inadequate R&D:** The Indian pharma industry faces lack of research components and real time good manufacturing practices.
  - The government should promote incubators' establishment to establish small scale, raw material manufacturing units/ incubators in all states of the country.
- **Manufacturing disability:** The medical device sector suffers from a cost of manufacturing disability of around 12 to 15 %, vis-a-vis competing economies, among other factors, on account of
  - lack of adequate infrastructure,
  - domestic supply chain and logistics,
  - high cost of finance,
  - limited design capabilities
- **Medical devices,** are dependent on a mix of technologies such as engineering, electronics, material sciences and information technology. However, India has not been able to bridge the gap between investments, skilled resources and innovation to fully capitalize on these opportunities.

### Medical Devices Sector: Growth Drivers

- **Nascent industry:** Importing more than 90% of sophisticated devices, the domestic industry has a huge scope for R&D capacity.
- **Demographics:** Ageing population, life expectancy to cross 70 years by 2022, thereby requiring home-based healthcare devices.
- **Increasing disposable income:** 8% Indians could earn more than \$ 12,000 p.a. by 2026
- **Industrial Parks:** 4 medical devices parks in India are under-development.
- **Government commitment:** New rules and regulatory processes for the medical devices sector, 100% FDI allowed etc.

### Pharmaceutical Industry: Growth Drivers Demand-side Factors

- **Accessibility:** Over\$200 Billion to be spent on medical infrastructure in the next decade.
- **Affordability:** Rising income could drive 73 million households to the middle class over the next 10 years.
- **Epidemiological Factors:** Patient pool expected to increase over 20% in the next 10 years, mainly due to the rise in population, New diseases & lifestyle changes.

### Supply-side Factors

- **Patented Drugs:** Following the introduction of product patents, several multinational companies are expected to launch patented drugs in India
- **Medical Infrastructure:** Pharma companies have increased spending to tap rural markets and develop better medical infrastructure. Hospitals' market size is expected to increase by 2024.
- **Cost Efficiency:** India's cost of production is nearly 33 % lower than that of the US and almost half of that of Europe.
- **Generics Market:** India's generics drug market accounts for around 70% of the India pharmaceutical industry.
- **Talent Pool:** India has a skilled workforce as well as high managerial and technical competence in comparison to its peers in Asia.



In the light of above challenges the Union government has therefore, approved these New Schemes to boost Manufacturing of Medical Devices as well as Bulk Drugs production in India:

#### About the Schemes

- **Promotion of Medical Device Parks:** It aims to promote Medical Device Parks in the country in partnership with the States. A maximum grant-in-aid of Rs.100 crore per park will be provided to the States.
  - It will be implemented by a State Implementing Agency (SIA).
  - The target is to provide financial assistance for Common Infrastructure Facilities for 4 Medical Device parks.
- **Production Linked Incentive Scheme for promoting domestic manufacturing of medical devices:** Incentive @ 5% of incremental sales over base year 2019-20 will be provided on the segments of medical devices identified under the Scheme.
  - It will be implemented by a Project Management Agency (PMA) to be nominated by Department of Pharmaceuticals.
  - The target is to aid **about 25-30 manufacturers** under the following categories of medical devices: -
    - ✓ **Cancer care/Radiotherapy** medical devices,
    - ✓ **Radiology & Imaging medical devices** and Nuclear Imaging Devices,
    - ✓ **Anaesthetics & Cardio-Respiratory** medical devices
    - ✓ **All Implants** including implantable electronic devices like Cochlear Implants and Pacemakers.
- **Promotion of Bulk Drug Parks: Under this scheme,**
  - Decision is to develop **3 mega Bulk Drug parks in India** in partnership with States.
  - Government of India will give **Grants-in-Aid to States** with a maximum limit of Rs. 1000 Crore per Bulk Drug Park.
  - Parks will have common facilities such as **solvent recovery plant**, distillation plant, power & steam units, common effluent treatment plant etc.
  - A sum of Rs. **3,000 crores** have been approved for this scheme **for next 5 years**.
  - It will be implemented by State Implementing Agencies (SIA) to be set up by the respective State Governments.
- **Production Linked Incentive Scheme for promotion of domestic manufacturing of critical KSMs/Drug Intermediates and APIs**
  - Financial incentive will be given only to eligible manufacturers of identified 53 critical bulk drugs on their incremental sales over the base year (2019-20) for a period of 6 years.
  - A sum of **Rs. 6,940 crores** have been approved for **next 8 years**.
  - The scheme will be implemented through a **Project Management Agency (PMA) to be nominated by the Department of Pharmaceuticals**.

#### Significance of the Schemes

- **Providing affordable healthcare.**
- **Way to achieve self-reliance.**
- **Role of China:** China supplies around two-thirds of India's pharmaceutical raw materials, and in certain segments like antibiotics, the proportion is as high as 90%. The issue gains significance after the novel coronavirus epidemic shut down factories in China, which in turn hit supplies of raw materials.
- **Achieving economy of scale.**
- **Attracting investment.**
- **Providing hand-holding support to the manufacturers.**
- **Generate an additional employment of 33,750 jobs over a period of five years.**

## 7.5. NEW REGULATORY BODIES TO COVER TRADITIONAL MEDICINE

### Why in News?

Recently, Rajya Sabha passed the **National Commission for Indian Systems of Medicine (NCISM) Bill, 2019** and the **National Commission for Homeopathy Bill, 2019** for setting up separate commissions for Indian traditional systems of medicine and homoeopathy respectively.

### Indian Systems of Medicine

India has recognized **six systems of medicine viz. Ayurveda, Unani, Siddha, Yoga, Naturopathy and Homoeopathy.**

#### Related news: Ayush Grid

- Recently, **Ministry of AYUSH** has conceptualized this new project for digitization of AYUSH sector.
- It is a nationwide **digital platform which aims to bring onboard all AYUSH facilities** including hospitals and laboratories and to promote traditional systems of healthcare.

- **Ayurveda**
  - As per the fundamental basis of Ayurveda, **all objects and living bodies are composed of five basic elements, called the Pancha Mahabhootas**, namely: Prithvi (earth), Jal (water), Agni (fire), Vayu (air) and Akash (ether).
  - The treatment approach in the Ayurveda system is holistic and individualized having preventive (Svasth-Vritta), curative Aushadhi (drugs), Ahara (diet) and Vihara (life style), mitigative, recuperative (Rasayana) and rehabilitative aspects.
- **Unani**
  - **Originating in Greece (Yunan)**, it was introduced in India by the Arabs and Persians around the eleventh century.
  - Unani system of medicine **described four mode of treatment viz.**, Ilaj-bil-Tadbir (Regimenal Therapy), Ilaj-bil-Ghidha (Dietotherapy), Ilaj-bilDawa (Pharmacotherapy) and Ilaj-bil-Yad (Surgery).
- **Siddha**
  - The Siddha System of medicine in India having **its close relation with Dravidian culture**.
  - The term Siddha means achievements and Siddhars are those who have achieved perfection in medicine.
  - **Eighteen Siddhars are said to have contributed towards the systematic development of this system** and recorded their experiences in Tamil language.
- **Yoga**
  - It is primarily a way of life, first **propounded by Maharshi Patanjali in systematic form Yogsutra**. The discipline of Yoga consists of eight components namely, restraint (Yama), observance of austerity (Niyama), physical postures (Asana), breathing control (Pranayam), restraining of sense organs (Pratyahar), contemplation (Dharna), meditation (Dhyan) and Deep meditation (Samadhi).
  - The United Nations General Assembly had declared **June 21st as the International Yoga Day on December 11, 2014**.
- **Naturopathy:**
  - Naturopathy is a **cost effective drugless, non-invasive therapy** involving the use of natural materials for health care and healthy living.
  - It is based on the theories **of vitality, boosting the self healing capacity of the body and the principles of healthy living**.
  - Naturopathy promotes healing by stimulating the body's inherent power to regain health with the help of five elements of nature – Earth, Water, Air, Fire and Ether.
- **Homoeopathy:**
  - "Homoeopathy" was introduced as a scientific system of drug **therapeutics by a German Physician, Dr. Christian Frederick Samuel Hahnemann in 1805**.
  - **Hahnemann postulated** the key principle of Homoeopathy, the **Law of Similars**, logically evolving it **as an experimental science**, according to the method of inductive reasoning after exact observation, correct interpretation, rational explanation and scientific construction

#### **Why are these systems of medicines required?**

- **Shortage of Doctors:** The doctor patient ratio in India is 1:1800 if only allopathic doctors are considered, but if the AYUSH practitioners are added, this ratio can reach the WHO recommended ratio of 1:1000.
- **Increase in Lifestyle related Disorders:** It is increasingly understood that no single health care system can provide satisfactory answers to all the health needs of modern society. Evidently there is a need for a new inclusive and integrated health care regime that should guide health policies and programmes in future.
- **Potential for Medical Tourism:** India is one of the most sought after destinations for medical tourism. The Medical Tourists undergo health restorative treatments of a combination of Ayurveda, Yoga, acupuncture, herbal oil massage, nature therapies, and some ancient Indian healthcare methods -such as Vedic care, an alternate healthcare service.
- **New drug development:** Traditional knowledge can provide valuable guidance in selecting and obtaining plant material of potential therapeutic interest.
  - Traditional medicines are the source of some modern antimalarial drugs.

## Background and Necessity of the Bills

- **Indian Medicine Central Council Act, 1970 and Homoeopathy Central Council Act, 1973** have not kept pace with time.
- **Various bottlenecks with these medicine systems are**
  - **Irregularities in regulation** of AYUSH medical institutions.
  - **Ineffective role of members** and Executive Committee.
  - **Lack of standard curriculum** and education.
  - **Absence of ethics** in practice of Indian System of Medicine and Homeopathy.
  - **Failure to provide transparent system** of inspection.
  - **Alleged irregularities in grant of recognition & de-recognition of education system** have crept into the system with serious detrimental effects on medical education and by implication on delivery of quality health services.

### 7.5.1. NATIONAL COMMISSION FOR INDIAN SYSTEMS OF MEDICINE (NCISM) BILL, 2019

- **It repeals Indian Medicine Central Council Act, 1970** and provides for a medical education system which ensures:
  - Availability of adequate and high quality medical professionals of Indian System of Medicine.
  - Adoption of the latest medical research by medical professionals of Indian System of Medicine.
  - Periodic assessment of medical institutions
  - An effective grievance redressal mechanism.
- **Key features of the Bill:**
  - **Constitution of the NCISM:** for development and regulation of all aspects relating to education, medical profession and medical institutions of Indian System of Medicine.
  - **Functions of the NCISM** include:
    - ✓ **Framing policies** for regulating medical institutions and medical professionals of Indian System of Medicine.
    - ✓ **Assessing the requirements** of healthcare related human resources and infrastructure
    - ✓ **Ensuring compliance** by the State Medical Councils of Indian System of Medicine of the regulations made under the Bill
    - ✓ **Ensuring coordination** among the autonomous boards set up under the Bill.
  - **Autonomous boards:** The Bill sets up certain autonomous boards under the supervision of the NCISM. These boards are:
    - ✓ Board of Ayurveda
    - ✓ Board of Unani, Siddha, and Sowa-Rigpa
    - ✓ Medical Assessment and Rating Board for Indian System of Medicine
    - ✓ Ethics and Medical Registration Board
  - **Advisory Council for Indian System of Medicine:** It will be the primary platform through which the states/union territories can put forth their views and concerns before the NCISM. Further, the Council will advise the NCISM on measures to determine and maintain the minimum standards of medical education.
  - **Entrance examinations:** There will be a uniform National Eligibility-cum-Entrance Test for admission to under-graduate education. The Bill also proposes a National Teachers' Eligibility Test for postgraduates of each discipline of Indian System of Medicine who wish to take up teaching that particular discipline as a profession.

### 7.5.2. NATIONAL COMMISSION FOR HOMEOPATHY BILL, 2019

- The Bill seeks to repeal the Homoeopathy Central Council Act, 1973 and provide for a medical education system which ensures:
  - Availability of adequate and high quality homoeopathic medical professionals,
  - Adoption of the latest medical research by homoeopathic medical professionals
  - Periodic assessment of medical institutions
  - An effective grievance redressal mechanism.

- **Key features of the Bill include:**
  - **Constitution of the National Commission for Homoeopathy (NCH):** for development and regulation of all aspects relating to education, medical profession and medical institutions of Homoeopathy.
  - **Functions of the NCH** include:
    - ✓ Framing policies for regulating medical institutions and homoeopathic medical professionals
    - ✓ Assessing the requirements of healthcare related human resources and infrastructure.
    - ✓ Ensuring compliance by the State Medical Councils of Homoeopathy of the regulations made under the Bill.
    - ✓ Ensuring coordination among the autonomous boards set up under the Bill.
  - **Constitution of three Autonomous Boards:** Homoeopathy Education Board, Medical Assessment and Rating Board and the Board of Ethics and Registration.
  - **Advisory Council for Homoeopathy:** Under the Bill, the central government will constitute an Advisory Council for Homoeopathy. The Council will be the primary platform through which the states/union territories can put forth their views and concerns before the NCH. Further, the Council will advise the NCH on measures to determine and maintain minimum standards of medical education.
  - **Entrance examinations:** There will be a uniform National Eligibility-cum-Entrance Test for admission to under-graduate homoeopathy education. The Bill proposes a common final year National Exit Test for the students graduating from medical institutions to obtain the license for practice.

## 7.6. SUPREME COURT LIFTS CURBS ON CRYPTOCURRENCIES

### Why in News?

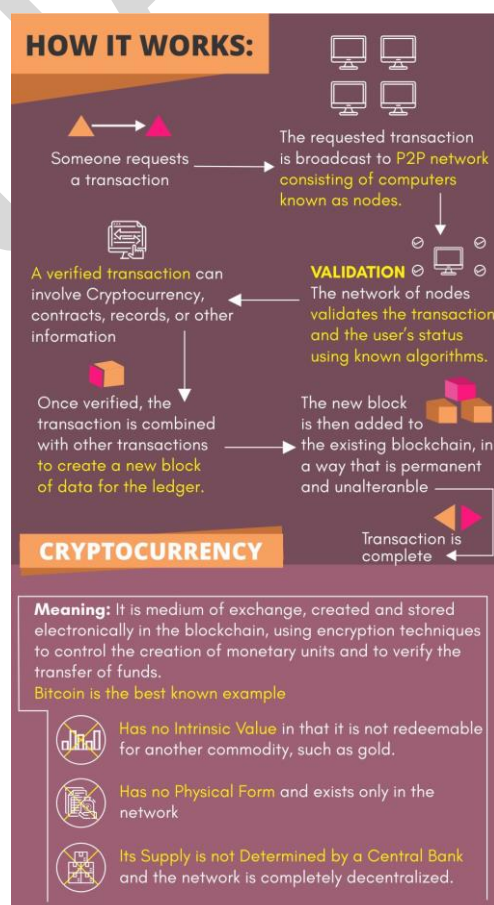
Recently, Supreme Court has set aside an RBI's April 2018 circular banning regulated financial institutions such as Banks and NBFCs from trading in virtual currency/cryptocurrency.

### What is Cryptocurrency?

- Cryptocurrency is a **type of digital currency that uses cryptography** for security and anticounterfeiting measures.
- It is normally **not issued by any central authority**, making it **immune to government interference** or manipulation.
- The control of each cryptocurrency works through distributed ledger technology called **blockchain**.
- **Examples** include Bitcoin, Ethereum, Ripple etc.
- **Various benefits of cryptocurrencies include:**
  - **Difficult to counterfeit** as compared to physical currency.
  - **There aren't usually transaction fees** for cryptocurrency exchanges because the miners are compensated by the network.
  - **Benefits for customers:** The rise of cryptocurrencies offers ordinary people the rare opportunity to choose among multiple currencies in the marketplace.
  - Blockchain technology can be used for **enhancing the efficiency of the financial system**.

### Arguments for banning of cryptocurrencies by RBI

- **Financial stability: Lack of any underlying fiat and excessive volatility** in their value was seen as an immediate threat to financial stability. Its far-reaching **potential impact on the effectiveness of monetary policy itself was unknown**.
- **Investor protection and security risks:** There were risks and concerns about **data security, consumer protection** and their use for speculation.
  - Theft of cryptocurrencies from exchanges soared in the first half of this year to three times the level seen for the whole of 2017.




- **Use in illegal activities:** Concerns were raised that anonymous nature and lack of a central regulator in cryptocurrency transactions can lead to funding of a host of illegal activities such as child pornography, drug dealing, gun supplies etc.
  - Their **anonymous nature** goes against global money-laundering rules.
- **International examples:** Countries like China have also unleashed a regulatory crackdown.

#### Why ban was Challenged?

- Virtual Currencies are **not legal tender but tradeable commodities and therefore that they fell outside the RBI's regulatory ambit.**
- Even assuming VCs were amenable to regulation by the RBI, **RBI's directive violates the freedom of business, trade and profession under Article 19(1)(g).**
  - Petitioner had argued that trading in cryptocurrencies in the absence of a law banning those was a "legitimate" business activity under the Constitution and RBI could not have denied them access to banking channels to carry on such business.

#### Supreme Court Observation






- Supreme Court held that **Virtual Currencies eluded precise definition so ban did not pass the "proportionality" test** and lifted the curbs imposed by the RBI on regulated entities.
  - Doctrine of Proportionality postulates that the nature and extent of the State's interference with the exercise of a right must be proportionate to the goal it seeks to achieve.
- Also, bench noted that the rules governing the matter would depend on what Parliament decides, based on the currently pending draft **Banning of Cryptocurrency and Regulation of Official Digital Currency Bill, 2019.**
- It added that the RBI and the central government would have a monopoly on the creation and circulation of any official digital currency whenever such a situation arose.
  - The bench, however, said that virtual currencies are neither good nor commodities and can't be regarded as real money.
  - Once virtual currencies are accepted as valid payments for the purchase of goods and services, the activity falls squarely within the RBI's purview.



### What is Blockchain?

A database or a ledger that maintains a continuously growing list of data records or transactions.

**So, it's a Spreadsheet, like Excel?**  
In a way yes, but it has special qualities that make it better than traditional databases.

- 
**Shared Publicly:** Servers, or nodes, maintain the entries (known as blocks) and every node sees the transaction data stored in the blocks when created.
- 
**Automated:** The software is written so that conflicting or double transactions do not become written in the data set and transactions occur automatically.
- 
**Secure:** The database is an immutable and irreversible record. Posts to the ledger cannot be revised or tampered with - not even by the operators of the database.
- 
**Trusted:** Distributed nature of the network requires computer servers to reach a consensus, which allows for transactions to occur between unknown parties.
- 
**Decentralized:** There is no central authority required to approve transactions and set rules.

## 7.7. EMPOWERED TECHNOLOGY GROUP

### Why in news?

Government has set up the **Empowered Technology Group**, headed by the Principal Scientific Advisor.

### About 'Empowered Technology Group'

- It is **12-Member group** including the chairmen of the Atomic Energy Commission, the Space Commission and the Defence Research and Development Organisation and the secretaries of the IT, telecommunications and science & technology ministries.
- It is **mandated** to render timely policy advice on latest technologies; mapping of technology and technology products; commercialisation of dual use technologies; developing an indigenisation road map for selected key technologies; facilitate cross-sector collaboration and selection of appropriate R&D programs leading to technology development.
- The group seeks to address problems such as:
  - **silos-centric approaches** to development of technology
  - **technology standards either not developed** or applied, leading to sub-optimal industrial development
  - **dual use technologies** not being optimally commercialised
  - R&D programs not aligned to efforts at technology development

- need for mapping of **technologies important for applications in society** and industry.
- Under this **all ministries are to include technological implications of their proposals** along with the interministerial comments in their Cabinet notes. For this govt also modified the handbook on preparation of Cabinet notes.
- ‘Technology Group’ will **evaluate all department proposals exceeding Rs 500 crore** for the procurement of technology/products before they are submitted to Expenditure Finance Committee.

## 7.8. INFLIGHT WIFI

### Why in news?

Union government recently issued a notification to announce that all airlines operating in India can now provide in-flight wi-fi services to its passengers.

### More on the news

- The Civil Aviation Ministry specified that the availability of the Wi-Fi during flights will be broadly subjected to two conditions:
  - The **main captain will have the authority to switch on or switch off the Wi-Fi in flights**, and the captain will be required to follow certain guidelines on this matter. For example, Wi-Fi would be switched on only when the plane is at the cruising speed and not during take-off or landing.
  - **Each plane that offers in-flight Wi-Fi will have to be certified by DGCA** for this purpose before fliers in it can enjoy connectivity.

### How does Inflight Wifi work?

There are two operating systems for airplane WiFi:

#### Air-to-ground WiFi System

- It works in a similar way to a cell phone.
- Airplanes have an antenna located underneath their body, which links up with cell towers on the ground.
- As the aircraft travels, it simply connects to the nearest transmitter/towers on a rolling basis.
- The airplane becomes a hotspot, so passengers can access internet.
- However, this system can't work when the plane is flying over large expanses of water or particularly remote terrain, like on transatlantic routes.

#### Satellite based WiFi System

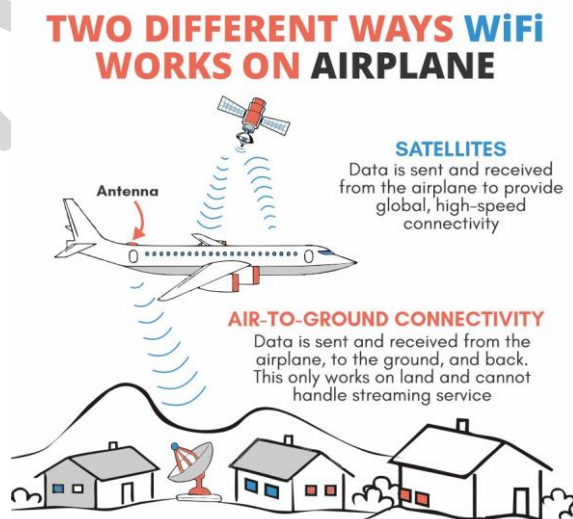
- It uses a network of orbiting satellites to allow a connection.
- Information is passed between the ground and the plane via the satellite.
  - The satellite is linked to ground stations.
  - The airplane connects to the satellite using a satellite antenna on the top of the fuselage.
- Wi-Fi signal is distributed to plane passengers via an on board router.
- The plane uses whichever satellite is nearest as it travels and thus can operate over large expanses of water or remote terrain as well.
- Satellite WiFi operates on two different bandwidths: narrowband and broadband. Both allow passengers full Internet access, although the narrower options are less suitable for streaming movies.

#### Wi-fi

- The term Wi-Fi stands for wireless fidelity.
- It is a **radio transmission technology** and is built upon a set of standards that allow high-speed and secure communications between a wide variety of digital devices, access points, and hardware.
- The typical range of a standard Wi-Fi network can reach up to 100 meters in the open air.
- They transmit at frequencies of 2.4 GHz or 5 GHz.

#### Hotspot

A hotspot is a physical location where people can access the Internet, typically using Wi-Fi, via a wireless local area network (WLAN) with a router connected to an Internet service provider.



## 7.9. SUN SPOT CYCLE

### Why in news?

Researchers from IISER Kolkata identified Sunspots that herald the start of a **new Sun Spot cycle**.

### What are Sun Spots?

- Sunspots are areas that **appear dark** on the surface of the Sun and are cooler than other parts of the Sun's surface.
- They form at areas where **magnetic fields are so strong** that they keep some of the heat within the Sun from reaching the surface.

### What is Sun Spot cycle?

- Sun Spot's number waxes and wanes as the amount of magnetic flux that rises up to the Sun's surface varies with time in a cycle called the **solar cycle**. This cycle which lasts 11 years on average is referred to as the **sunspot cycle**.
- So far, astronomers have documented 24 such cycles, the last one ended in 2019. Recent observations point to the signs that 25<sup>th</sup> cycle has just begun.
- Solar activities affect space weather, which can have an impact on space-based satellites, GPS, power grids and so on.
- Sunspot Cycle was discovered in 1843 by German astronomer **Samuel Heinrich Schwabe**.

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# 8. CULTURE

## 8.1. RAJKUMARI AMRIT KAUR

### Why in news?

Rajkumari Amrit Kaur was mentioned in TIME magazine's list of the 100 most powerful women who defined the last century.

### About Rajkumari Amrit Kaur

#### Early Life

- Amrit Kaur was born in 1889, to the royal family of Kapurthala.
- She grew up in a Christian household as her father converted to Christianity before she was born, and her mother was a Bengali Christian.
- She was educated in Oxford and **returned to India in 1918**, and began to be drawn towards the work and teachings of MK Gandhi.

#### Involvement in Social work

- She was a champion to the cause of women's rights and **worked towards eradication of the purdah system, child marriage, child illiteracy, and the devadasi system.**
- In 1927, she **helped in founding All India Woman's Conference along with** Margaret Cousins.
  - She also founded the Delhi Women's League (the Delhi branch of AIWC) alongwith Rameshwari Nehru.
- She believed that the welfare state included economic betterment and provision of certain minimum standards of living essential for a healthy life for all people.
- She ensured that maternity and child welfare centres were set up all over the country.
- She **campaigns to prevent malaria** post independence, likely saving hundreds of thousands of lives.

#### Participation in India's Freedom Struggle

- She took an **active part in the salt campaign and was arrested for her participation in the Dandi March.**
- She became a **secretary to Mahatma Gandhi in 1930, serving him for 16 years**, and moved to Gandhiji's ashram in 1934.
- **She condemned the Communal Award** and moved a resolution against it at the All India Women's Conference held in 1932.
- She was appointed a member of the Advisory Board of Education by the British government but resigned in 1942 in support of the **Quit India Movement**

#### Contribution to Constitution Making

- She was **elected to the Constituent Assembly from Central Provinces and Berar and was one of the 15 women Constituent Assembly Members.**
- She was a member of two crucial committees:
  - **Sub-Committee on Fundamental Rights**
  - **Sub-Committee on Minority Rights**
- She contributed to the establishment of constitutional '**equality**' of men and women which is guaranteed under Articles 14, 15, and 16.
- She also played a crucial role in the inclusion of **Uniform Civil Code as a part of Directive Principles of the State Policy.**

#### Achievements post-Independence

- She was the **only woman in the Independent India's first Cabinet**, thus becoming the **first woman to hold a cabinet rank** in free India.
  - She was appointed as the **Health Minister** and remained in that position for **10 years.**
- She was a co-founder of **Indian Council of Child Welfare** in 1952.
- She **introduced the AIIMS Bill, 1956 (which set up AIIMS, Delhi)** in both the houses and was instrumental in the passing of the Bill as an Act.



- She later became the **first president** of the institute and ensured that it faced minimal governmental intervention and was autonomous to ensure excellent quality.
- She also **laid the foundation of the Lady Irwin College** and initiated the **Tuberculosis Association of India** and the **Central Leprosy Teaching and Research Institute in Madras**.
- In 1950, she also became the **first female and first Asian president of the World Health Assembly** and also led India's delegation to the World Health Organization several times.
- She was also the **Chairperson of the Indian Red Cross for fourteen years**.

## 8.2. WORLD HERITAGE LIST FOR THE YEAR 2020

### Why in news?

Government of India has submitted two nomination dossiers namely '**Dholavira: A Harappan City**' and '**Monuments and Forts of Deccan Sultanate**' for inclusion in the World Heritage List for the year 2020.

### Dholavira: A Harappan City

**Location:** Khadir Island of the Rann of Kutchch, Gujarat

### More details

- It is a fortified quadrangular Harappan city set which was saw occupation for 1200 years (3000 BCE-1800 BCE) and had an access to the sea prior to decrease in sea level.
- It is one of the two largest Harappan sites in India, and 5th largest in the subcontinent.
  - Mohenjo-daro, Harappa and Ganweriwala (all in Pakistan) and Rakhigarhi and Dholavira (both in India).
- It lay between two seasonal streams, the Mansar in the north and Manhar in the south, and had three distinct zones-
  - **Upper Town or the citadel:** It consists of enclosures identified as a castle and a bailey and is surrounded by massive mud-brick walls.
  - **Middle Town:** It has an area identified as the ceremonial ground or stadia, a distinct street-pattern and a large scale enclosure. It also served as a transition from the citadel to the middle.
  - **Lower Towns:** It is the area where commoners or the working population lived.
- The site demonstrates the ingenuity of Harappan people to evolve a highly organised system of town planning with perfected proportions, interrelation of functional areas, street-pattern and an **efficient water conservation system**. It adopted excellent water conservation strategy by building dams, reservoirs and pipelines.

### Monuments and Forts of Deccan Sultanate

It includes Indo Islamic monuments at 4 sites in Gulbarga, Bidar, Bijapur and Hyderabad, namely:

- **Bahmani Monuments at Gulbarga, Karnataka :** Theses monuments were built in **14th century** and primarily comprise of:
  - **The Gulbarga Fort and Great Mosque in the Fort**
    - ✓ Gulbarga was the **first capital of the Bahmani dynasty**, and thus had an elliptical fort.
    - ✓ It was initially constructed on the remains of a Warangal fort built by Raja Gulchand, and then completely overhauled and reconstructed later by **Alauddin Bahmani**.
  - **The Haft Gumbad complex with seven tombs**
    - ✓ The Haft Gumbaz tombs include that of Mughahid Shah, Daud Shah, Ghiyath al-Din Shah and Shams al-Din Shah of the Bahmani dynasty.
- **Bahmani and Barid Shahi Monuments at Bidar, Karnataka**
  - These were built from late 15th to the early 16<sup>th</sup> centuries and comprise of Bidar Fort, Madrasa Mahmud Gawan, Bahamani tombs at Ashtur and Barid Shahi tombs.

### United Nations Educational, Scientific and Cultural Organization (UNESCO)

- It is a **specialized agency** of the UN with headquarters in **Paris, France**.
- It seeks to build peace through international cooperation in Education, the Sciences and Culture.

### World Heritage Sites

- UNESCO identifies World Heritage sites which must be of outstanding universal value and meet at least one out of **ten selection criteria** set by UNESCO.
- It helps in protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity.
- It is based on **UN's Convention Concerning the Protection of the World Cultural and Natural Heritage of 1972**.
- India has **38 World Heritage Sites, including 30 Cultural properties, 7 Natural properties and 1 mixed site**.
- Most recent addition to the list was the **Pink City Jaipur**.

- **Adil Shashi Monuments at Bijapur, Karnataka**
  - The Adil Shahi monuments at Bijapur date from late **15th to the late 17th centuries**.
  - These are an ensemble of 80 small and big monuments including the fortifications, gates, water systems and tanks, several mosques and tombs and palatial structures.
  - The most remarkable monuments within the fort is **Gol Gumbaz** that is the 2nd largest dome in world history and is the tomb of Muhammad Adil Shah.
- **Qutb Shahi Monuments at Hyderabad, Telengana**
  - The landmarks that symbolize the Qutb Shahi Dynasty are Golconda Fort, Qutb Shahi Tombs and Charminar.
  - ✓ Charminar is a ceremonial Gateway built to celebrate the foundation of Hyderabad in 1591 A.D.

### 8.3. CHAPCHAR KUT

#### Why in news?

Recently Chapchar Kut, festival of Mizos, was celebrated across **Mizoram**.

#### About Chapchar Kut

- Chapchar Kut is a **festival held during the period when the bamboos and trees that have been cut down are being awaited to dry to be burnt for jhumming**.
  - Jhum cultivation, also known as the slash and burn agriculture, is the process of growing crops by first clearing the land of trees and vegetation and burning them thereafter.
- Different tribes of Mizoram come together on a common ground to showcase their dance or musical talent during this festival.
- One of the greatest highlights of Chapchar Kut is the performance of various folk dances of Mizoram, like:
  - **Cheraw**, the popular bamboo dance, which features men tapping the bamboo sticks according to the rhythm of the dance and women adjust their dance moves with moving sticks.
  - **Khuallam** which is an auspicious dance performed by a group of dancers celebrating new beginnings. It is also a welcome dance for guests during community festivities.
  - **Chheihlam** which is another community dance performed by both men and women.
  - **Solakia** which is a war dance performed by both male and female members of the community. It is accompanied by rhythmic beating of the drums.

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# 9. ETHICS

## 9.1. SOCIAL CAPITAL

### Why in News?

In an unprecedented show of solidarity, people responded to the call of India's PM to express their gratitude towards healthcare providers by clapping and banging Thalys/utensils.

### About Social Capital

- Capital is something that carries value and the term is used conterminously in different concepts like human capital, economic capital or cultural capital.
- Social Capital, in that sense, is the **aggregate value of a network of social relationships**, more or less institutionalised, which are based on civic norms, generalised social trust and understandings that facilitate coordination and cooperation for mutual benefit.
- **Elements that make social capital possible** are groups and networks, trust and solidarity, collective action and cooperation, social cohesion and inclusion and information and communication.

### Benefits of having Social Capital

Aristotle famously said, **“he who lives without society is either a beast or God”**. The core intuition of social capital is that being social has benefits, such as:

- **Social values:** getting in a social environment and helping, sharing, and caring about our fellow humans helps us to become less ego-driven, individualistic or self-centred. It develops values like **humility, honesty, trust, justice, transparency, responsibility and patience** among others.
- **Leadership qualities and social activism:** a network of social relationship or social capital helps a person to mobilise people around a common goal. **Leaders like B. R. Ambedkar used their social capital very effectively** to raise and address various social issues through activism.
- **Responsibility and dedication:** we tend to become more responsive towards the needs of others and social problems like pollution, poverty, hunger, epidemics etc become our collective responsibility and it gives dedication to people to work on these problems together.
- **Volunteerism:** various activities like **philanthropism, ‘Shramdaan’, rise of voluntary sector organizations** including NGOs and Charities are possible because of the values like humanism, care, helpfulness that are facilitated by social capital.
- **Administration:** Good social capital helps administrator to **gain acceptability** for the initiatives taken, makes it easier to implement and sustain projects, helpful in controlling adverse situation like crowd management, improve people participation in administration and enhance a sense of ownership and accountability.
- **Strengthening relations at international level:** the phenomenon of **soft power diplomacy** or **humanitarian assistance** works in enhancing social capital among countries. This results in better diasporic relations, welfare related cooperation, value-driven geopolitics etc.

### Barriers to Creation of Social Capital in India

- **Family and caste centric society: if social networks remain nucleated around family and identity, then** there is little or no social capital creation across families and castes and mistrust between two families or strata continues to remain.
- **Negative attitudes:** attitudes based on materialism and self-aggrandisement gives rise to mistrust which is detrimental to the creation of social capital.
- **Lack of emotional intelligence:** emotional intelligence is crucial in understanding one's role and expectations and managing relationships by building bonds, teamwork and earning social skills like persuasiveness, effectiveness in leading change and leading teams. For example: the call of 'Do or Die' by Mahatma Gandhi came at a juncture of Quit India movement which electrified the masses and resulted in a massive movement.

The above reasons bring out as to why social capital is important in fighting COVID -19. However, there are **certain aspects which also require attention**.

- Social capital can lead to situation of **strong in-groupism** where it creates a perception of, **We against Them**. It sometimes leads to **suspicion, xenophobia, discrimination or even sub-regional tendencies**.

- Same set of informal norms and codes that bind communities together can become **exclusionary and harmful** when a particular in-group attempts to **aggressively enforce compliance**, creating an oppositional out-group.

For instance, the recent news of stigma and ostracism faced by frontline workers such as doctors and airline crew is perhaps social capital's undesirable side breeding forceful self-surveillance and suspicion of those who are believed to contravene community norms.

### Conclusion

Times like COVID-19 require collective action and responsibility. Social capital might have its share of pros and cons, but if it is harnessed and utilized properly, it can pave the way for India to not just fight this ongoing crisis but also come out of this even stronger and bolder.

## 9.2. WORK CULTURE IN TIMES OF WORK FROM HOME

### Why in news?

The recent Coronavirus (COVID-19) outbreak has forced various organizations to enable work from home. This may result in alteration of prevalent work culture of an organization.

### Why is work culture important?

- **Higher Engagement:** When employees clearly identify with a company's principles, they're more likely to engage with their work. Several studies have highlighted that companies with high engagement have **higher customer loyalty, productivity, and profitability** than their peers.
- **Attracting talent:** Organizations with an engaged workforce and a clear culture in place are more likely to attract top talent.
- **Company's identity:** Work culture reflects the work of an organization and hence has the potential to create a good or bad image among its customers and partners.
- **Employee satisfaction:** An organization with a strong work culture generates a feeling among employees that what they do is important. This drastically boosts the work satisfaction.
  - Employees who feel like they're part of a community, rather than a cog in a wheel, are more likely to stay in the organization.

#### Work Culture

- Work culture can be understood as a concept which encompasses **beliefs, thought processes and attitudes of the employees.**
- Also, these beliefs and attitudes in turn shape and are shaped by **ideologies and principles of the organization.**

### Does work from home disturb the current setup? : Yes

- **Colleagues and teams being siloed from each other:** Working from home can create a scenario where teams interact in a small group or not at all, this communication gap can weaken the work culture significantly.
- **Feelings of isolation among remote employees:** Working from home can create anxiety among employees if they lack clarity on what is expected of them.
- **Enthusiasm** about building and growing a business is **harder to foster.** This is because employees may start viewing the relationship with the organization as transactional and hence are less passionate about its vision.
- It is difficult to achieve the **level of trust, connection and mutual purpose** when working from home vis-à-vis working from an office.

#### Work from home: India specific issues

- **Lack of Infrastructure:** There is absence of reliable internet connectivity especially outside metro cities.
- **Problem of Privacy:** Family members sometimes might unconsciously thwart employee's privacy. This could result in distractions and might affect the quality of work.
- **Cultural Stigma:** There are prevalent preconceived notions about people working remotely such as s/he is lazy or socially awkward.
- Work culture in most organizations in India relies on **complete control by manager or team leader.** Work from home could disrupt this control structure.

### But is work from home completely bad for work culture? : No

- **Lesser distractions and increased productivity:** Studies have shown that concentration levels are higher when people are allowed to work from home and productivity may also increase **because of a more flexible environment**, no commute time, better work-life balance and relatively **more relaxed state of mind.**

- **Telecommunication:** Communication with wider number of teammates is possible through internet based video/mail services which **may not be possible even in physical setting**. For example: **coordination among employees in different cities and flexibility in team formation**.
- **Bigger talent pool:** Employers can hire the best of the best talent while not limiting themselves by geographical restrictions. This can reinforce positive work culture i.e. work culture based on achievement orientation and hard work.
- **Higher Retention:** above reasons will facilitate better job satisfaction resulting into more dedication and responsibility.

### Making Work from home work: Way Forward

- **Clear expectations for every employee:** Employees who understand responsibilities and deadlines can work to exceed them, while avoiding the anxiety of wondering where they stand with their team and manager.
- **Clear schedule and regular check-ins:** Maintaining a clear and consistent schedule ensures professionalism and maintains discipline in work from home.
- **Personal touch:** Regularly checking on employee's well-being does not let the bond between employee and organization weaken.
- **Using technology to simulate reality as far as possible:** Ideas like video-conferencing, shared work platforms and instant messaging keeps the work flow stimulated.
- **Engage and coach your remote employee:** Work from home cannot have a one-size-fits-all template for all organizations. So the employees need to be mentored on the dos and don'ts to realize its benefits.

Apart of above, employees could be encouraged to meet in person for celebrations, team successes and also individual successes. This will help reinforce the work culture time and again. At the end of the day, culture isn't tied to a place but is a collective mind-set of all people part of the organization.

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## 10. NEWS IN SHORT

### 10.1. FREEDOM IN THE WORLD 2020 REPORT

- In the **Freedom in the World 2020** report **India was ranked at the 83rd position among 195 countries** along with Timor-Leste and Senegal.
- India was near bottom among the countries categorized as “Free”, with only Tunisia receiving a lower score.
- India’s score saw the worst decline among the world’s 25 largest democracies this year.
- India scored 34 out of 40 points in the **political rights category**, 37 out of 60 in the **civil liberties category**.
- The report is released by **Freedom House**, U.S.-based non-governmental organization.

### 10.2. WORLD CITIES SUMMIT 2020

- The next edition of the World Cities Summit (WCS) has been postponed and will be held from 20–24 June 2021 in Singapore due to COVID-19 outbreak.
- **Inaugurated in 2008**, The WCS is an exclusive platform for government leaders and industry experts to **address liveable and sustainable city challenges**, share integrated urban solutions and forge new partnerships.
- It is **held biennially** in **Singapore**. Along with Singapore Government, it is jointly organised by Singapore’s Centre for Liveable Cities and the Urban Redevelopment Authority.
- Theme of WCS - 2020 is "**Liveable and Sustainable Cities: Adapting to a Disrupted World**".
  - It aims to discuss how cities can cope with climate change, social shifts and technological disruptions with confidence.

### 10.3. FACEBOOK PRAGATI

- **Facebook Pragati** is a Corporate Social Responsibility (CSR) initiative by Facebook India in collaboration with Nudge Centre for Social Innovation by awarding four grants of up to Rs 50 lakh for each non-profit to scale their work.
- The initiative will **incubate and accelerate early-stage women-led non-profits** that are working to drive women entrepreneurship and to spread awareness and adoption of technology among women in India.

### 10.4. ANNUAL REFRESHER PROGRAMME IN TEACHING (ARPIT)

- **ARPIT** is an initiative of **Ministry of Human Resource Development (MHRD)** for online

professional development of 15 lakhs higher education faculty using the (Massive open online course) **MOOCs platform SWAYAM**.

- Launched in 2018, through ARPIT, new & emerging trends, pedagogical improvements and methodologies for transacting revised curriculum have been imparted to **more than 1.8 Lakh teachers** in the last two years.
- It **enhances the quality of teaching as well as learning**.
- 'Study Webs of Active Learning for Young Aspiring Minds' (**SWAYAM**) is an initiative of MHRD that provides **one integrated platform and portal for online courses**. This covers all higher education subjects and skill sector courses.

### 10.5. INSTITUTIONAL MECHANISM FOR NATIONAL TECHNICAL TEXTILES MISSION

- Ministry of Textiles plans to implement National Technical Textiles Mission (NTTM) through a 3-tier institutional mechanism:
  - **Tier- I: A Mission Steering Group led by the Textiles minister**- It would be responsible to approve all financial norms in respect of all Schemes, Components and Programme of the NTTM. In addition, all scientific / technological research projects under the NTTM shall require its approval.
  - **Tier II: An Empowered Programme Committee led by textiles secretary**- It will monitor the implementation of various components of the mission. It will also approve all projects within the financial limit of each programme as approved by the Mission Steering Group except research projects.
  - **Tier III: A Committee on Technical Textiles on Research, Development & Innovation chaired by a NITI Aayog member**- It will identify and recommend all research projects related to strategic sectors such as defence, para-military, security, space, and atomic energy.

*\*For detailed coverage on the Technical textiles and NTTM refer current affairs February, 2020.*

### 10.6. KISAN RAIL SCHEME

- Centre has formed a panel, to look into the implementation of the **Kisan Rail scheme**.
- Kisan Rail is proposed under Union budget 2020-2021 to build seamless national cold supply chain for perishable goods like milk, meat and fish.

- **Indian Railways will set up a “Kisan Rail”** through **PPP arrangements**.
- There shall be **refrigerated coaches** in Express and Freight trains.
- In accordance to the scheme, **temperature-controlled centres** have been set up in **Uttar Pradesh, Delhi and Maharashtra** under **Kisan Vision project** of the Container Corporation of India.
  - Logistic based Public Sector Units i.e. Container Corporation of India Limited (CONCOR), Central Warehousing Corporation (CWC), Central Railside Warehouse Company Limited (CRWC) are to provide Infrastructure at six locations to Indian Railways under the project.

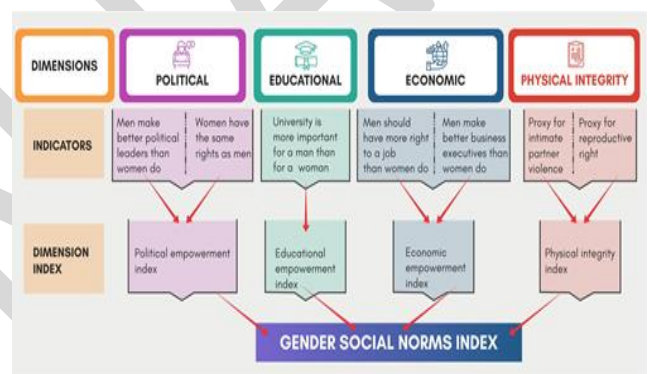
### 10.7. JEEVAN KAUSHAL CURRICULUM TO UPGRADE LIFE SKILLS

- The **University Grants Commission (UGC)** has developed life skills (Jeevan Kaushal) curriculum for undergraduate students at Universities and Colleges.
- Objectives of the Jeevan Kaushal curriculum are:
  - to **enhance self-awareness**
  - to increase **emotional competency** at place of study/work
  - to provide opportunity for **realising one’s potential through practical experience**;
  - to **develop interpersonal skills and adopt good leadership behaviour**
  - to **set appropriate goals, manage stress and time effectively**; and
  - to manage competency-mix at all levels for achieving excellence with ethics.
- The Jeevan Kaushal **curriculum is suggestive**. The UGC has requested Vice-Chancellors of all Universities to consider the curriculum for introduction in Universities and affiliated Colleges/institutions at under-graduate level.
- This Curriculum covers the courses on communication skills, professional skills, leadership & management skills and universal human values.

### 10.8. GENDER SOCIAL NORMS INDEX (GSNI)

- Recently, the **United Nations Development Programme (UNDP)** has released the Gender Social Norms Index (GSNI).
- GSNI is a **social norms index** which captures how social beliefs can obstruct gender equality along four dimensions: **political, educational, economic and physical integrity**.
- Overall, the GSNI reflects how prevalent are **biases from social norms** in these dimensions as well as how are they **evolving**.

- The index provides insights into widespread biases against gender equality by country and gender in **75 countries** (80 percent of the world’s population), and across time, **GSNI trends for 31 countries** (59 percent of the global population).
- GSNI ranges from 0 to 1. Higher GSNI values indicate higher bias against gender equality. **There is no country without bias against gender equality.**
- **Highlights of the Index**
  - About half of the world’s men and women feel that men make better **political leaders**, and over 40 percent feel that men make better **business executives** and that men have more **right to a job** when jobs are scarce.
  - Similarly, 28 percent think it is justified for a **man to beat his wife**.
  - Women in the labour market are paid less than men and are not preferred for senior positions because less than 6 percent of CEOs in S&P 500 companies are women.



### 10.9. GRAND ETHIOPIAN RENAISSANCE DAM (GERD)

- **Ethiopia, Egypt and Sudan** have disputes over The Grand Ethiopian Renaissance Dam (GERD).
- GERD is a 6,450 MW **hydropower** project nearing completion on the **Blue Nile River in Ethiopia**.
- **White Nile River** and **Blue Nile River** two major **tributaries of the Nile**. The Blue Nile supplies about 80% of the water in the Nile during the rainy season.
- Formerly known as the **Millennium Dam**, when completed it will be the **largest dam in Africa**.
- Construction started in April **2011**, which will not only serve **Ethiopia**, but **Sudan and Egypt** as well.

### 10.10. SVALBARD SEED VAULT

- Recently, Cherokee Nation, a US based tribe deposited culturally important crop seeds in the **Global Seed Vault in Svalbard**.
- The Seed Vault is a **long-term seed storage facility** located inside a frozen mountain under the Norwegian permafrost

- It is located at the **Norwegian island of Spitsbergen in the Arctic Svalbard archipelago**.
- The hope for this cold storage facility is that, if there is a global emergency, like a nuclear war, a pandemic or a natural catastrophe that leaves future generations without food supplies, these seeds could grow new food crops.
- For this reason, this seed bank is often referred to as the '**Doomsday Seed Bank**'.
- It represents the **world's largest collection** of crop diversity.
- The seed vault is managed collectively by Norwegian government, the Crop Trust (non-profit organisation), and the Nordic Genetic Resource Center.

### 10.11. BIOLOGICAL WEAPONS CONVENTION

- **March 26** marked the **45<sup>th</sup> anniversary** of the Biological Weapons Convention coming into **force**.

#### About Biological Weapons Convention (BWC)

- It was the **first multilateral disarmament treaty** banning the development, production and stockpiling of **an entire category** of weapons of mass destruction.
- It entered into force on **March 26, 1975**.
- It currently has **183 states-parties**. **India signed** the convention in **1973** and **ratified** it in **1974**.
- **BWC bans**
  - The **development, stockpiling, acquisition, retention, and production** of
    - ✓ **Biological agents and toxins**, of types and in quantities, that have no justification for prophylactic, protective or other peaceful purposes.
    - ✓ **Weapons, equipment, and delivery vehicles** designed to use such agents or toxins for hostile purposes or in armed conflict.
  - The **transfer of or assistance with acquiring** the agents, toxins, weapons, equipment, and delivery vehicles described above.
- BWC **does not ban** the use of biological and toxin weapons but reaffirms the 1925 Geneva Protocol, which prohibits such use.
- It also **does not ban bio-defence programs**.

### 10.12. ULTIUM LITHIUM-ION BATTERIES

- Recently, General Motors announced that it has created a new Electric Vehicle (EV) battery, Ultium, which could give a long range and will be much cheaper than the other batteries currently available in the market.

- This modular architecture, called Ultium will be the foundation of the automaker's future EV plans and will support a wide range of products across its brands, including compact cars, work trucks, large premium SUVs and performance vehicles.
- It is based on a newly developed chemistry **for the lithium-ion cells** that helps reduce the cost and improve the performance of the battery.
- **Benefits:**
  - **Optimize battery energy storage:** As Ultium batteries large-format, pouch-style cells can be stacked vertically or horizontally inside the battery pack.
  - **Reducing cost:** Most current EVs utilize nickel, manganese and cobalt (NMC) coatings on the cathodes. GM's Ultium cells use an NMCA chemistry (**A being aluminum**). This has allowed the cobalt content to be reduced by 70%.
    - ✓ Most automakers and cell manufacturers are working to reduce or eliminate cobalt because of the cost and the conditions where it's mined, primarily in central Africa.
  - **Flexibility in use:** Depending on the configuration and charge power, these batteries will be able to add over 100 miles of range in just 10 minutes.

### 10.13. INTERNATIONAL CONFERENCE ON NANO SCIENCE AND TECHNOLOGY (ICONSAT)

- **ICONSAT** under the aegis of **Nano Mission**, Department of Science and Technology (DST), was held at Kolkata. It is a series of biennial conferences.
- The event emphasised on **5Ms – Mechanical, Material, Machines, Manufacturing and Manpower**, and integration of these 5 Ms with nano-science and technology.

#### About Nano Mission

- Government launched a **Mission on Nano Science and Technology (Nano Mission)** in May 2007 as an "**umbrella capacity-building programme**".
- The **Department of Science and Technology is the nodal agency** for implementing the Nano Mission and steered by a **Nano Mission Council** chaired by an eminent scientist.
- The Mission's programmes target **all scientists, institutions and industry in the country**.
- It will also strengthen activities in nano science and technology by:
  - promoting basic research,
  - human resource development,



- research infrastructure development,
- International collaborations, orchestration of national dialogues and nano applications and technology development.
- As a result of the efforts led by the Nano Mission, India is presently **amongst the top five nations in the world in terms of scientific publications** in Nano science and technology (moving from 4th to the 3rd position).

#### 10.14. FUEL CELL TECHNOLOGY FOR DISASTER MANAGEMENT

- Scientists at International Advanced Research for Powder Metallurgy & New Materials (ARCI), Hyderabad, have developed **Polymer Electrolyte Membrane fuel cells (PEMFC)**.
- **PEMFC will** convert the chemical energy stored in hydrogen fuel directly and efficiently to electrical energy with water as the only byproduct,
- It has an advantage of operational capability at **low-temperatures with applications in decentralized power generation systems** thus providing power to Emergency Operation Centres set up during natural disaster management cycle.
- This has the potential to reduce energy use, pollutant emissions, and dependence on fossil fuel.

#### 10.15. HANTAVIRUS

- Recently, a man from China's Yunnan province died from Hantavirus.
- **Hantaviruses are a family of viruses spread mainly by rodents and can cause varied disease syndromes in people.**
- Hantaviruses in the Americas are known as “**New World**” hantaviruses and may cause **hantavirus pulmonary syndrome (HPS)**.
- Other hantaviruses, known as “**Old World**” Hantaviruses, are found mostly in Europe and Asia and may cause **hemorrhagic fever with renal syndrome (HFRS)**.
- Each Hantavirus serotype has a **specific rodent host species and spreads to people via aerosolized virus that is shed in urine, feces, and saliva, and less frequently by a bite from an infected host.**

#### 10.16. MAC-BINDING

- While restoring internet connectivity in Jammu and Kashmir rules specified that Internet connectivity will be made available “**with mac-binding**”.
- Every device has a **Media Access Control (MAC)** address, a **hardware identification number** that is unique to it. While accessing the Internet, every device is assigned an **Internet Protocol (IP)** address.

- Mac-binding means **binding together the MAC and IP addresses**, so that all requests from that IP address are served only by the computer having that particular MAC address.
- It means that if the IP address or the MAC address changes, the device can no longer access the Internet.
- Also, **monitoring authorities can trace the specific system** from which a particular online activity was carried out.

#### 10.17. METHANE OXIDIZING BACTERIA (METHANOTROPHS)

- Scientists at Agharkar Research Institute (ARI), Pune have **isolated 45 different strains of methanotrophic bacteria.**
- They are **capable of reducing methane emissions from rice plants** and also positive or neutral effect on growth of rice.
- Methane oxidizing bacteria (methanotrophs) grow on methane as their sole source of carbon and energy.
- Rice fields are waterlogged and anaerobic degradation of organic matter results in the generation of methane. They contribute to nearly **10% of global methane emissions.**
- Methane is the second most important greenhouse gas (after CO<sub>2</sub>) and 26 times more potent as compared to carbon-di-oxide. In rice fields, **methanotrophs are active near the roots or soil-water interfaces.**
- Also, **bio-methane** generated from waste can be used by methanotrophs to convert into value added products such as single cell proteins, carotenoids, biodiesel etc. to reduce global warming due to GHG emission.

#### 10.18. ASTEROID 2020 AV2

- The **2020 AV2 asteroid** is the first discovered asteroid **entirely inside the orbit of Venus**, with help of the **Virtual Telescope Project**.
- **Asteroid 2020 AV2** has the shortest orbital period known so far in the asteroid population.
- Out of hundreds of thousands of known asteroids, only 21 asteroids are entirely inside of the Earth's orbit called **Interior-Earth objects (IEOs)** i.e. their orbit has an aphelion (farthest point from the Sun) smaller than Earth's perihelion (nearest point to the Sun), which is 0.983 astronomical units (AU).
  - AU is the mean distance from the centre of the earth to the centre of the sun.
- IEOs are difficult to view as they cannot be seen in complete darkness and high in the sky, when observing conditions would be much better and much more technically feasible for the telescopes.

- The **Virtual Telescope Project** is an advanced service provided by the Bellatrix Astronomical Observatory in Rome, Italy.
- It consists in several, robotic telescopes, remotely accessible in real-time over the Internet, both for research and fun, available for all.

### 10.19. GLOBAL HYPERLOOP POD COMPETITION

- **Indian Institute of Technology (IIT) Madras** is organizing India's first Global Hyperloop Pod Competition to **increase awareness and enthusiasm about Hyperloop in India.**
- Hyperloop is the **5th mode of transportation (other 4 includes railways, roadways, airways, waterways), a high-speed train that travels in a near-vacuum tube.**
  - It is all about removing the two things that slow down regular vehicles: **friction and air resistance.**
    - ✓ To do away with the former, the pod hover above its track, like a magnetic levitation train. As for air resistance, that's where the tube comes in.
- The **reduced air resistance** allows the capsule inside the tube to reach **speeds of more than 1000 km/h**, conveying people or objects at high speed while being very efficient, thereby drastically reducing travel times over medium-range distances.
- It is completely **autonomous, safe, clean and enclosed.** More importantly, Hyperloop is **environment friendly** and doesn't call for much maintenance too.
- **Elon Musk**, founder of SpaceX and CEO of Tesla, **proposed the idea** of Hyperloop to the world in **2013.**
- Hyperloop is **among 6 new proposals for Public Transportation System**, cleared by NITI Aayog in 2017. Other five includes metro, stadler buses, pod taxis, hybrid buses and freight rail road.

### 10.20. NATIONAL FORENSIC SCIENCES UNIVERSITY (NFSU) BILL

- NFSU Bill, 2020 was introduced in Lok Sabha which seeks to establish the National Forensic Sciences University.
  - The Bill establishes the **Gujarat Forensic Sciences University, Gandhinagar** and the **Lok Nayak Jayaprakash Narayan National Institute of Criminology and Forensic Sciences, New Delhi**, as NFSU at Gujarat, an institution of national importance.
- The proposed NFSU seeks to facilitate and promote studies and research and to achieve excellence in

**the field of forensic science** in conjunction with applied behavioural science studies, law, criminology and other allied areas and technology and other related fields for strengthening criminal justice system in the country.

- **Other provisions of the bill:**
  - It would also **set up centres of excellence** in the area of forensic sciences and provide modern facilities in these areas.
  - **It would coordinate with the central and state governments** to improve investigations, crime detection and prevention through research
  - **It would Assist the central government** in creating and maintaining a **national forensic database** for criminal investigation, including DNA and fingerprints.

### 10.21. ARCI DEVELOPED A COST-EFFECTIVE SOLAR RECEIVER TUBE TECHNOLOGY

- Recently, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) has developed a **cost-effective solar receiver tube technology for industrial process heat applications.**
  - It is a cost-effective wet chemical process which efficiently absorbs solar radiation and converts it into heat for the targeted applications, especially in industries.
- **Solar receiver tube** is one of the key components in the Concentrating Solar Thermal (CST) technology.
  - CST plants generate electric power by using mirrors to concentrate sun's energy and convert it into high-temperature heat. That heat is then channeled through a conventional generator.
  - CST technologies provide a **viable solution to meet the demands on industrial process heat** ( $\leq 250^\circ\text{C}$ ) of a majority of industrial processes.
- Currently, Indian CST plant developers are importing the high-end evacuated Concentrating Solar power receivers for CST applications.

#### About ARCI

- It is an **Autonomous Research and Development Centre of Department of Science and Technology.**
- **ARCI's mandate is**
  - Development of High Performance Materials and Processes for Niche Markets
  - Demonstration of Technologies at Prototype / pilot scale
  - Transfer of Technology to Indian Industry

## 10.22. SODIUM HYPOCHLORITE (NAOCL)

- It is a **compound used for water purification** and largely for surface purification, bleaching, odour removal and water disinfection.
- **It is used on a large scale in** agriculture, chemical industries, paint- and lime industries, food industries, glass industries, paper industries, pharmaceutical industries, synthetics industries and waste disposal industries.

## 10.23. HUNTINGTON DISEASE

- Recently, a team of scientists from National Centre for Cell Science (NCCS), in Pune, has unraveled **key cellular mechanism in Huntington Disease**.
- It is a **progressive genetic disorder** affecting the brain that causes uncontrolled movements, impaired coordination of balance and movement, a decline in cognitive abilities, difficulty in concentrating and memory lapses, mood swings and personality changes.
- It is caused by a **mutation in a gene called HTT**. The HTT genes are involved in the production of a protein called huntingtin. They provide the instruction for making the protein.

## 10.24. BLISSFUL HYGIENE OFFERING TO GOD (BHOG)

- Recently, Tamil Nadu Food Safety and Drug Administration has recently asked the temple administrators to obtain BHOG certificate from FSSAI.
- It is an initiative by **Food Safety and Standards Authority of India (FSSAI), launched in 2018**, to encourage **Places of Worship (PoW)** to adopt and maintain Food Safety and hygiene in preparation, serving and sale of prasad along with training of food handlers for basic food safety and hygiene.
- Under the initiative, **places of worship where food is cooked/handled are identified, audit is conducted** and basic **training of food handlers** is done.
- After **the successful audit** of the PoW it becomes **recognized and certified**.
- It is a **part of the Eat Right initiative of FSSAI**, which aims to improve public health and combat negative nutritional trends to fight lifestyles diseases.

### About FSSAI

- It is an **autonomous statutory body established under Food Safety and Standards, 2006** which consolidates various acts & orders that have hitherto handled food related issues in various Ministries and Departments.

- FSSAI has been **created for laying down science based standards for articles of food** and to regulate their manufacture, storage, distribution, sale and import **to ensure availability of safe and wholesome food for human consumption**.
- **Ministry of Health & Family Welfare** is the **Administrative Ministry for the implementation of FSSAI**.

## 10.25. GORMATI ART

- On the occasion of Women's Day, Vijaya Pawar from rural Maharashtra got a chance to promote Gormati art through PM's social media accounts.
- Gormati art belongs to the handicrafts of the **Banjara community of rural Maharashtra**.
- **Banjaras are basically nomadic tribes involved in trade**.
  - The word 'banjara' is derived from **vanaj meaning to trade, and jara meaning to travel**.  
In India they reside in various parts including states like Rajasthan, Maharashtra, Madhya Pradesh, Haryana, Punjab, Gujarat, Andhra Pradesh, Tamil Nadu Bihar, Uttarakhand etc.
- They are identified by different names in different states. For example- Chran, Lavaniya, Lambani, Jogi Banjaras etc.

## 10.26. LALIT KALA AKADEMI AWARDS 2020

- Recently President of India conferred the 61st Annual Lalit Kala Akademi Awards to 15 meritorious artists.

### About Lalit Kala Akademi (National Academy of Art)

- It was inaugurated in New Delhi in 1954, by the then Minister for Education, **Maulana Abul Kalam Azad**.
- The Akademi was given statutory authority in 1957 under the Societies Registration Act 1860.
- It is the youngest of the three Academies founded by the Government of India (other two being **Sahitya Akademi and Sangeet Natak Akademi**) and was established in pursuance of a cultural and national identity.
- Lalit Kala Akademi manifests a commitment to the service of the visual arts by establishing, preserving and documenting visual art of the highest order that in turn reflects the vitality, complexity and unfolding patterns of ancient, modern and contemporary art in India.
- It organises art exhibitions and award ceremonies every year to promote art as well as to honour talents.

### 10.27. PYRAMID OF DJOSER REOPENED

- Recently, Egypt reopened the Pyramid of Djoser, **the first pyramid ever built**, after a 14-year restoration.
- Pyramid of Djoser is **located at the Saqqara archaeological site** near Cairo.
- The structure is believed to be designed by Imhotep, described by some as the first architect of the world and constructed during Pharaoh Djoser, the second king of Ancient Egypt's Third Dynasty (2650 BC– 2575 BC).
- The structure is designated as **UNESCO World Heritage Site**.

### 10.28. CENTRAL SANSKRIT UNIVERSITIES ACT

- **Central Sanskrit Universities Act, 2020** was passed by Parliament.
- It is intended to convert following India's three deemed-to-be Sanskrit universities into Central Sanskrit Universities.
  - Rashtriya Sanskrit Sansthan, New Delhi,
  - Shri Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeeth, New Delhi, and
  - Rashtriya Sanskrit Vidyapeeth, Tirupati,
- The **central universities will**:
  - Disseminate and advance knowledge for the **promotion of Sanskrit**.
  - Make special **provisions for integrated courses** in humanities, social sciences, and science.
  - **Train manpower** for the overall **development and preservation of Sanskrit** and allied subjects.

### 10.29. KAVUTHEENDAL CEREMONY

- Recently, the kavutheendal ceremony of the **Meena Bharani festival of Kerala** was observed without mass participation due to the lockdown.
- Meena Bharani is a seven day local festival of Kerala that takes place at Sri Kurumba Bhagavathy Temple, Kodungalloor annually.
- The festival starts when one among the royal family unfolds the Pattukkuda, a red Umbrella used for declaring the commencement of the Bharani Festival, allowing common people to enter the temple.

#### About Sri Kurumba Bhagavathy Temple

- According to popular narratives, Sri Kurumba Bhagavathy (the main deity) is associated with two legends:
  - **Kannagi**, the heroine of the Tamil epic **Silappathikaram** (written by Ilango Adigal)

which is associated with the **Pattini cult**. It is believed that the temple was built by a Chera king for Kannagi.

- **Goddess Bhadrakali** of the **Kali-Daruka story**, part of **Bhagavathy cult**. It is believed that sage Parasurama, the sixth avatar of Lord Vishnu, built this temple.
- It is situated in Kodungallur (Kerala) which was once a port city under the Chera kings of Tamil Nadu and an integral part of their capital Mahodayapuram. The Greeks and Romans also knew the city as **Muziri**.
- Another festival celebrated here is the **Thalapoli** festival, held in the Malayalam month of Makara (January-February).

### 10.30. TRIBAL LOCKDOWN RITUALS

- Recently, tribal lockdown rituals have staged a comeback in **Arunachal Pradesh**, the State geographically closest to China's Hubei province where the COVID-19 outbreak began. Some of them are:
  - **Arr-Rinam by the Galo tribe**: This prohibits the entry and exit of people into and from the villages two days after it begins.
  - **Motor/Pator by the Adi tribe**: It is a customary self-restriction where several villages prevented the entry of outsiders by **erecting barricades**. Nobody is allowed to enter or leave these villages.
  - **Arrue by the Nyishi tribe**: It is a self-quarantine ritual performed by the dominant Nyishi community in districts such as **Papum Pare and East Kameng of Arunchal Pradesh**.
    - Other such rituals include **Khyasang-Ratar and Merii**.

### 10.31. NAVROZ

- Recently, Navroz festival was celebrated by the Parsi community in India.
- Navroz ('New Day') is the **Parsi New Year**, Iranian New Year or the Persian New Year.
- It is a holy festival for the Zoroastrians and is also celebrated among some Muslim and Iranian communities.
- It marks the **first day of spring**, and it usually takes place on **March 21**.
- It is celebrated among the Parsi community by conducting spring cleaning (known as **Pateti**) a day before Navroz, dressing up in their traditional attire, decorating their homes with lights and rangoli and preparing traditional Parsi dishes.
- Parsis also visit the **Agiary or the Fire Temple** and offer fruits, sandalwood, milk and flowers to the fire on this auspicious day.

- To Zoroastrians, Fire plays a central role in worship as a symbol of truth and the spirit of God.
- It is also known as "Jamshedi Navroz" after the legendary King of Persia Jamshed who started the Parsi calendar.
- In the 18th century, a rich tradesman from Surat, Nusservanji Kohyaji brought the festival to India from Iran. Over a period of time, the festival was introduced in India on a wide scale by members of the Parsi community.
- It was inscribed in the list of **UNESCO Intangible Cultural Heritage** in 2016.

#### Other Festivals celebrating New Year

- Navreh (Kashmiri New year)
- Losar (Tibetan New Year)
- Rongali Bihu (Assamese New Year)
- Baisakhi (Punjabi New Year)
- Pohela Boishakh (Bengali New Year)
- Gudi padwa (Marathi & Konkani New Year)
- Puthandu (Tamil New Year)
- Pana Sankranti (Odia New Year)
- Ugadi (Telugu New Year)
- Vishu (Malayali New Year)

### 10.32. ERRATA

- **February 2020 Current Affairs Magazine: Article 10.20:** In the article it was given that Eaglenest Wildlife Sanctuary is located in Tezpur, Assam.

- **The correct information is:** The Eagle's Nest Wildlife Sanctuary is located in the West Kameng District, Arunachal Pradesh. The Singchung Bugun Village community Reserve lies right next to the Eagle's Nest Wildlife sanctuary.

- **February 2020 Current Affairs Magazine: 5.1. CMS COP 13:** In the map attached with the article the Parties and Non Parties were depicted wrongly.

- **The Correct map is:**



- **November 2019 Current Affairs Magazine: 8.4. UNESCO'S CREATIVE CITIES NETWORK:** The number of cities under UNESCO'S Creative Cities Network was given as 180.


- **The correct information is:** There are 246 cities (after the addition of 66 new cities including Mumbai and Hyderabad) which currently make up this network.


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# 11. GOVERNMENT SCHEMES IN NEWS

## 11.1. PRADHAN MANTRI GARIB KALYAN YOJANA

### Why in News?

Finance Minister announced Rs 1.70 Lakh Crore relief package under Pradhan Mantri Garib Kalyan Yojana for the poor to help them fight the battle against Corona Virus.

Salient features			
Scheme components	Beneficiaries	Total number of beneficiaries	Benefits
Insurance scheme for health workers fighting COVID-19	It covers <b>public healthcare workers</b> like Safai karamcharis, nurses, ASHA workers, paramedics, technicians, doctors etc. working in Central/State governmental hospitals or health/ wellness centres.	Around 22 lakh health workers	<ul style="list-style-type: none"> <li>• <b>50 lakh insurance cover is provided for 90 days</b> in case any health professional, who while treating COVID-19 patients meet with some accident or is at some risk of being impacted.</li> <li>• <b>Private healthcare provider</b> requisitioned by <b>hospitals related to government</b>, for COVID-19 related responsibilities.</li> <li>• This benefit will be <b>over and above any other insurance cover being availed</b> of by the beneficiary.</li> </ul>
PM Garib Kalyan Ann Yojana	Poor households getting benefits from PDS	80 crore	<ul style="list-style-type: none"> <li>• Free 5kg of wheat or rice per <b>person</b> per month <b>over and above</b> present entitlement under Public Distribution System, which is 5kg wheat or rice. Also, Free 1 kg of pulses per <b>family</b>.</li> </ul>
PM-Kisan	Farmers	8.7 crore	Transfer of Rs. 2000 in April
Cash transfers under PM Garib Kalyan Yojana	MGNREGA workers	13.62 crore families	Wage hiked to 202 from 182 w.e.f. April 1. Each worker to get Rs. 2000 additional
	women beneficiaries under the scheme (Ujjwala Yojana)	8.3 crore families	Free gas cylinders for April-June
	Women Jan Dhan account holders	20.40 crore women	Rs. 500/month for April-June
	Vulnerable Senior citizens, widows, Divyangs	3 crore	Ex-gratia of Rs. 1000/month during April-June
	Organizations with up to 100 employees, out of which 90% are having wage less than Rs. 15000/month	80 lakh employees	Government to pay <b>24 %</b> of their monthly wages into their PF accounts for next three months.
<b>Self-Help groups (SHGs)</b>	SHGs	63 lakh SHGs benefiting 6.85 crore households	Limit for collateral free loan raised to Rs 20 lakh from Rs 10 lakh
Other components of PM Garib Kalyan package	Workers registered under EPF	4.8 crore workers	EPF Regulations will be amended to include Pandemic as the reason to allow non-refundable withdrawal up to 75% of three months wages, whichever is lower
	Building and Other Construction Workers	3.5 Crore registered workers	<ul style="list-style-type: none"> <li>• All States/UTs were advised to transfer funds in the account of construction workers through DBT mode from the Cess fund collected and constituted by the Building and Other Construction Workers (BOCW) Welfare Boards under the BOCW cess Act, 1996.</li> <li>• Workers should be registered under Building and Other Construction Workers Welfare Fund (cess fund) to avail the benefit.</li> </ul>
	Those covered under <b>Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)</b>	-	<b>District Mineral Fund (DMF)</b> funds will be utilized for supplementing and augmenting facilities of medical testing, screening as well as treating the patients affected with this pandemic.

# 12. FIGHTING COVID-19

## 12.1. GLOBAL BEST PRACTICES

### Controlling and fighting the Pandemic

- **Testing:** Large scale testing with quick results is the most effective tool that we have in order to control and limit the number of positive cases.

<b>South Korea</b>	It has <b>tested more than a quarter-million people</b> for the virus; there are over 600 testing sites nationwide, with a capacity to test up to 20,000 people each day. Results are released, on average, within 6 hours via text.
<b>Israel</b>	RADLogics (IT Company in Israel) has adapted its AI-powered medical-image analysis solution to automatically and accurately detect and classify COVID-19 infection in chest CT images of patients believed to be infected. <ul style="list-style-type: none"> <li>• The solution has been deployed in China, Russia and Italy to measure the percentage of affected lung volume.</li> </ul>
<b>Germany</b>	<b>Pool Testing Method</b> developed by <b>German Red Cross Blood Donor Service</b> in Frankfurt. It involves simultaneously testing a combined sample from multiple people from a household or a local cluster to widen reach and speed up results. Suitable for expanded testing in larger population groups. <ul style="list-style-type: none"> <li>• In the case of a positive mini-pool result, individual testing is carried out in previously reserved samples. In the case of a negative result, all included samples have a reliable negative result.</li> <li>• It was earlier used during large outbreaks and invisible community transmission, such as of HIV.</li> </ul>

- **Tracking and Surveillance:** Tracking as well as continuous monitoring is essential to control the spread of the pandemic.

<b>Australia</b>	Its approach to the pandemic is based on <b>mathematical models</b> of infectious diseases which represent the way infections spread between individuals, in households, and through society.
<b>Singapore</b>	<b>Singapore</b> has adopted <b>high-tech surveillance tools</b> , including a smartphone app that tracks users' location and proximity to other people using Bluetooth, alerting those who come in contact with someone who has tested positive or is at high risk for carrying the coronavirus.
<b>Germany</b>	<b>Corona taxis:</b> Medics outfitted in protective gear, driving around the empty streets to check on patients who are at home, five or six days into being sick with the coronavirus. <ul style="list-style-type: none"> <li>• They take a blood test, looking for signs that a patient is about to go into a steep decline. They might suggest hospitalization, even to a patient who has only mild symptoms; the chances of surviving that decline are vastly improved by being in a hospital when it begins.</li> </ul>

- **Quarantine:** Strict, efficient and humane quarantine arrangements are essential to isolate and treat positive cases. Such a system needs clear policy, quick action and adequate infrastructure.

<b>Poland</b>	<b>Poland</b> launched a home quarantine app that uses <b>location data, facial recognition and time-stamped photographs</b> to ensure home quarantine.
<b>China</b>	New hospitals were built in record time. An excellent example is the newly built <b>Huoshenshan and Leishenshan Hospitals</b> , which offer 2,600 beds in total.
<b>Taiwan</b>	<b>Taiwan</b> rolled out an " <b>electronic fence</b> " strategy that utilizes location-tracking services in mobile phones to ensure people who are quarantined stay in their homes.

- **Medical equipment and Food supply:** Medical supplies such as masks, ventilators and other protective gear need to be produced rapidly and made available swiftly. Also, regular food supplies play a critical role in sustaining the population and minimizing the indirect impact of the pandemic.

<b>Morocco</b>	A group of engineers have converted decathlon <b>snorkeling masks</b> into respirators for coronavirus patients.
<b>Taiwan</b>	The <b>government</b> here took control of face mask distribution from the private sector, ensuring there would be <b>no hoarding of supplies</b> or exploitative pricing, as has happened in other places such as Hong Kong.
<b>Private Companies</b>	Companies like Rolls-Royce, Airbus, Ford, GM, Tesla, Volkswagen etc. are working with existing manufacturers of <b>ventilators</b> to ramp up production of their existing designs using technologies like <b>3-D printing</b> .

<b>China</b>	<b>Vegetable Basket project:</b> Farmers and merchants in nine provinces worked together to supply grains, oil, meat and vegetables to Hubei province, the epicenter of the outbreak.
<b>UK</b>	<b>National Health Service (NHS) volunteer scheme:</b> Under this people aged 18 and over and in good health and without coronavirus symptoms – are being asked to sign up online to provide support by doing tasks like collecting shopping, medication etc.

### Mitigating effects on other dimensions of life

- **Education:** Education can get drastically affected if the pandemic persists and the educational institutions are unable to develop alternate mechanisms.

<b>Bulgaria</b>	More than <b>800,000 accounts</b> have been created for all teachers and parents, publishers have been mobilized to open the digital textbooks and learning materials for grades 1 to 10.
<b>UNESCO</b>	<b>Combat COVID-19, Keep learning:</b> This is an online platform launched by <b>UNESCO Institute for Information Technologies in Education (IITE)</b> . Platform hosts various resources provided by the partners like educational courses, webinars, distance learning portals, communities and technical solutions that can be used to organize online learning.

- **Employment:** CoViD-19 has strained the global economy as businesses are down and employees are as they are losing their jobs.

<b>New Zealand</b>	<b>New Zealand</b> has developed a special COVID-19 Wage Subsidy Scheme to help businesses and affected workers in the short-term, as they adjust to the initial impact of COVID-19. ✓ The scheme supports: a) employers adversely affected by COVID-19, so that they can continue to pay their employees, as well as b) Workers to ensure they continue to receive an income, and stay connected to their employer, even if they are unable to work.
<b>Kazakhstan</b>	Its <b>Employment Roadmap Program</b> will cover more than 7 thousand projects. Of these, more than 300 are productive, promising projects that will make it possible to create new permanent jobs.

- **Other Innovative measures**

<b>IPA, WHO and UNICEF</b>	They have launched ' <b>Read the World</b> ' on <b>International Children's Book Day</b> to support children and young people in isolation. Hence, much-loved children's authors are joining an initiative to read extracts of their books to millions of children and young people currently living in isolation amid the crises.
<b>Australia</b>	It is one of the very few countries to be delivering support to individuals experiencing domestic, family and sexual violence due to the fallout of coronavirus as well as to support the <b>mental health and wellbeing of Australians</b> .
<b>USA</b>	A project called <b>Folding@Home</b> is providing researchers working on CoViD-19 with <b>access to the fastest computer resources</b> on the planet. ✓ The system allows volunteers to download software onto their home computers to use their CPU and GPU resources when they are idle, to perform calculations for the scientists.

## 12.2. DOMESTIC BEST PRACTICES

### Controlling and fighting the pandemic

- **Testing:** In a country with high population density like India, it becomes extremely important to test as many people as possible to halt the spread of the disease.

<b>Kerala</b>	<b>Walk-in Sample Kiosks (WISK):</b> which looks like a glass cabin, is made in such a way that the environment inside it where the medical staff stands, is always sterile. Healthcare professionals in the kiosk can collect swabs of people who will stand outside the kiosk.
<b>Jharkhand</b>	<b>Phone Booth COVID-19 Sample Collection Centre:</b> The structure is just like a Phone booth consisting of a small cubical for the health worker with COVID-19 sample collecting kit. ✓ It ensures safety of Health workers while collecting sample from suspected patients. ✓ It is very easy to assemble and can be taken to different locations for testing.
<b>Module Innovations (start-up)</b>	This <b>Pune based healthcare startup</b> has been developing a product namely <b>nCoVSENSEs</b> which is a rapid test device for detection of IgG and IgM antibodies that are generated against the COVID 19 in the human body. It would reduce the testing time to 10-15 minutes.



- **Tracking and Surveillance:** Robust tracking and surveillance enables optimization of both resources and efforts and also keep the spread of pandemic in check.

<b>Bhilwara Model</b>	<b>Bhilwara model:</b> The measures taken by the Rajasthan government include <ul style="list-style-type: none"> <li>✓ <b>Imposing a curfew in the district</b> which also barred essential services.</li> <li>✓ <b>Extensive screening and house-to-house surveys</b> to check for possible cases.</li> <li>✓ <b>Detailed contact tracing</b> of each positive case so as to create a dossier on everybody they met ever since they got infected.</li> </ul>
<b>Smart Cities</b>	<b>Smart Cities</b> of Pune, Surat, Bengaluru and Tumakuru are using the <b>integrated data dashboards</b> , developed by the data analysts and data experts working with their Integrated Command and Control Centers (ICCCs) (also functioning as COVID-19 War Rooms in many cities).
<b>Maharashtra</b>	<b>Maharashtra</b> has formed a <b>cluster containment plan</b> to deal with the contagion. The state is <b>using data analytics, drones and the traditional patrolling methods</b> to deal with containment in crowded places. In every district two to three drones are pressed that are used to monitor movements of streets.
<b>Staqu (start-up)</b>	This <b>Gurugram-based startup</b> has launched a <b>thermal camera</b> which detects individuals with a body temperature of more than 37 degree Celcius and alerts the system. <ul style="list-style-type: none"> <li>✓ The system has a range of up to 100 meters and the camera is able to identify multiple people at once. This can come extremely handy in scanning crowded places like airports, railway stations, malls, etc.</li> </ul>
<b>AAROGYA SETU APP</b>	It is Bluetooth and GPS based COVID -19 tracker. It will provide accurate information to the public for the spread, risk, prevention and treatment of COVID-19 infection. <ul style="list-style-type: none"> <li>✓ If user tests positive, then this app will share data with the government, but it does not share data with other third-party apps.</li> <li>✓ It is also equipped with an alarm which is raised when a person comes under 6 m radius of a CoViD-19 positive person.</li> </ul>

- **Quarantine:** In India, ensuring adequate number of quarantine facilities is a challenge. Efforts are needed to make home quarantine successful and simultaneously expanding the infrastructural capacity.

<b>Karnataka</b>	<b>Quarantine Watch App:</b> Home quarantined coronavirus suspects and patients will have to send their selfies on the Quarantine Watch which are linked to the person's GPS coordinates.
<b>Kerala</b>	<b>Geo fencing App:</b> The technology is used for identifying people who evade quarantine. It establishes a virtual boundary around the houses of people who have been kept under quarantine. If the person, under quarantine, steps out of their house, it will be documented in the geo-fencing software of the cyber cell department.
<b>Indian Railways</b>	It aims to <b>convert 5,000 coaches into isolation wards</b> for coronavirus patients. It has already converted around 2,500 coaches into 40,000 isolation beds, which are now ready for contingency.

- **Awareness:** Lack of awareness and circulation of misinformation can be dangerous in times of crises. Consequently, increasing awareness and educating people is as important as any other step in such times.

<b>PRADAN (National NGO)</b>	It has taken up the responsibility to spread awareness among the tribal communities and marginalized women and provide them the much-required handholding support on certain major aspects of hygiene and safe practices. <ul style="list-style-type: none"> <li>✓ Women leaders learnt how to make sanitisers with <b>fermented Mahuwa flowers</b> as well as prepare and use masks made with tissue papers and rubber-bands. The high alcohol content in Mahuwa flowers is being capitalised for making sanitiser.</li> </ul>
<b>Press Information Bureau (PIB)</b>	<b>Fact checking portal by Press Information Bureau (PIB):</b> <ul style="list-style-type: none"> <li>✓ The PIB has set up a portal for fact-checking issues related with the novel coronavirus pandemic, and it will receive messages by email and send its response in quick time.</li> <li>✓ The PIB will also release a daily bulletin to inform regarding Centre's decisions and developments and progress on COVID 19.</li> </ul>

#### Mitigating effects on other dimensions of life

<b>Education</b>	<b>Rajasthan</b> government has joined hands with e-learning platform Bright Tutee to launch a free digital learning app for schools students studying in classes 9 and 10.
<b>Procurement of essential services</b>	<b>Andhra Pradesh:</b> Direct procurement from the farmers using village secretariat. <b>Maharashtra:</b> using the network of Farmer Producer Companies for procurement so that farmers also do not lose out.

<b>Checking Hunger</b>	<b>Meals made by Tihar inmates</b> is served to around 500 people daily. The food that is left from nine prisons in the Tihar jail premises is collected and then sent to various venues.
<b>Facilitating Money Supply</b>	<b>CMS Info Systems</b> , India's largest Cash and Payments Solutions Company, has decided to <b>offer free cash delivery</b> (Cash2home) at home to <b>help senior citizens and disabled</b> .
<b>Judicial Work</b>	The Supreme Court has announced a slew of measures that will drastically curtail human interface in the judiciary, including options for lawyers to argue their cases through <b>videoconferencing</b> , <b>24x7 e-filing facilities</b> and a provision to beam proceedings through smart TVs into press rooms inside the court complex.

#### Other Innovative measures

<b>Zero-contact Check-up</b>	<b>Mobile doctor booth named "CHARAK"</b> : Designed by Indian Railways' Coach Rehabilitation Workshop, Bhopal, this will facilitate zero-contact check-ups as well as ensure the safety of the medical professionals owing to the "viral barrier chamber".
<b>Drones for disinfection</b>	Karimnagar Municipal Corporation, Telangana, had deployed customised drones with disinfectant liquids in Mukarampur area of Karimnagar districts.
<b>Fodder to animals</b>	Uttar Pradesh has made arrangements for fodder to over five lakh cows and over 1.50 lakh street dogs and monkeys to be fed daily.
<b>Portable Multi-feed Oxygen</b>	<b>Indian Navy</b> developed a ' <b>Portable Multi-feed Oxygen Manifold (MOM)</b> '. This innovation would enable one Oxygen Bottle to supply six patients concurrently thus enabling critical care management to a larger number of COVID patients.
<b>Engaging ASHA Workers (Odisha)</b>	Anganwadi workers and Panchayati Raj institution members have been asked to check the food availability in people's houses. Also, they have been asked to <b>note the return of migrant labourers</b> in their villages and whether they have gone through screening.



# ESSAY

## ENRICHMENT PROGRAMME

### ADMISSION OPEN

- ▶ Introducing different stages from developing an idea into completing an essay
- ▶ Practical and efficient approach to learn different parts of essay
- ▶ Regular practice and brainstorming sessions
- ▶ Inter disciplinary approaches
- ▶ **LIVE / ONLINE** Classes Available



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