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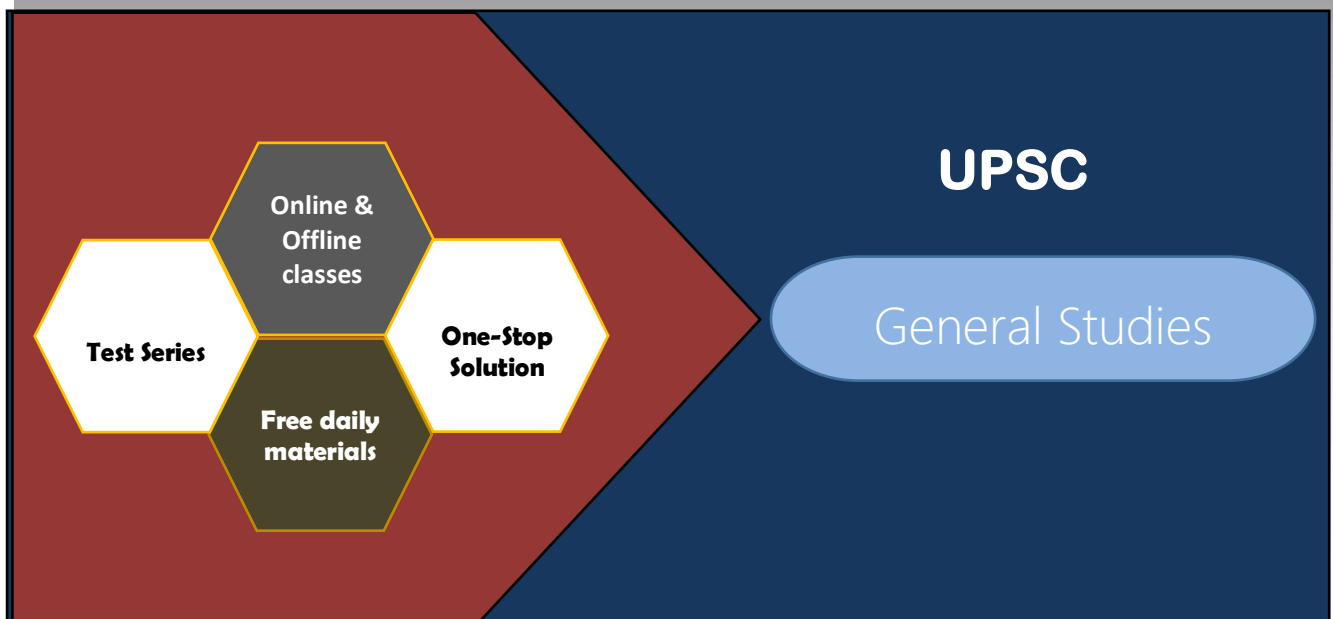
Monthly current affairs magazine

CURRENT AFFAIRS

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**Articles of the day
THE HINDU & INDIAN EXPRESS**



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GS 2 : Polity, Governance, International Relations

1. Ending encryption

Context:

- WhatsApp has moved the Delhi High Court against **the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021**.

Details:

- The one major cause for concern raised by WhatsApp is Rule 4(2) of the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.
 - Rule 4(2) of the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 imposes an obligation on significant social media intermediaries providing a messaging function, to ensure **traceability of the originator of information** on their platforms.
 - A “significant social media intermediary” is one with more than 50 lakh registered users.
 - Failure to implement the traceability obligation by the intermediaries can lead to them being held responsible for any illicit content on their platforms and thus the companies could lose their ‘safe harbour’ protection.
 - The safe harbour protection gives the social media intermediaries protection against liability (civil as well as criminal) for content posted on their platform by third party users. The safe harbour protection is granted under Section 79 of the IT Act.

WhatsApp’s arguments:

- WhatsApp’s argument is that the traceability provision of the new rules would require it to **break its end-to-end encryption service** which would **amount to the encroachment of user privacy**.
 - End-to-end encryption service allows messages to be read only by the sender and the receiver thus enabling privacy protections.

Government’s argument:

- The Government primarily relies on the argument that **privacy is not an absolute right**, and that the traceability obligation is only a reasonable restriction on the right to privacy.
- The government argues that the traceability provision is in line with the K.S. Puttaswamy judgment which held that any restriction to the right of privacy must be necessary, proportionate and includes safeguards against abuse.
 - The government's main line of argument in favour of the traceability guidelines is that such powers would be **vital to law enforcement in dealing with and tackling harmful online content**.
 - The Ministry of Electronics and IT has stated that the traceability measure will be **used by law enforcement as the "last resort"** and in the absence of any alternatives. Also, it will only be **used in specific situations**, such as for prevention, detection, investigation, prosecution or punishment of offences related to the sovereignty and integrity of India, child sexual abuse material, etc.
 - The intermediaries are mandated to undertake traceability **subject to an order being passed by a court or government agency**.

Counter arguments:

- The article discusses some of the major concerns regarding the new IT rules.

Against the judiciary's observations in the K.S. Puttaswamy case:

- As against the government's claim that the concerned provision is in line with the K.S. Puttaswamy judgement, the article argues that a closer analysis reveals that the **traceability provision in fact goes against the basic tenets of the judgement**.
 - The Supreme Court of India in the K.S. Puttaswamy judgement has clarified that **any restriction on the right to privacy must be necessary, proportionate and includes safeguards against abuse**.

Not proportionate:

- The general obligation to enable traceability as a systemic feature is not proportionate.
- There could be an immense adverse impact of the traceability provision on the general digital ecosystem in terms of the overall cybersecurity and privacy concerns.
- **The general weakening of the encryption regime would compromise the privacy and security of all individuals at all times**, despite no illegal activity on their part.

Lack of safeguards:

- The Rules lack effective safeguards by **failing to provide any system of independent oversight over tracing requests** made by the executive.
- The lack of safeguards like independent or judicial oversight in enforcing traceability would allow government agencies to seek user's identity and this could compromise the anonymity of whistle-blowers and journalistic sources.

Availability of alternate avenues for government:

- The Government already has **numerous alternative means of securing relevant information to investigate online offences**.
 - The Government is empowered to seek access to encrypted data under **Section 69(3) of the IT Act, and Rules 17 and 13 of the Information Technology (Procedure and Safeguards for Interception, Monitoring and Decryption of Information) Rules, 2009** under which intermediaries are required to assist the administration with decryption when they have the technical ability to do so and when law enforcement has no other alternative.
 - The administration is also empowered to seek unencrypted data, metadata and digital trails from intermediaries.
- The **Justice B.N. Srikrishna Committee report of 2018** recognizes the surveillance powers of the Government as being vast and overreaching.

Lack of scrutiny:

- There has been a **lack of adequate consultation** with the stakeholders prior to the introduction of the traceability provision under the new rules.
- Ideally, the new Rules should have been put through a period of consultation before being notified.

Conclusion:

- While there are problems in the digital ecosystem that are often exacerbated or created by the way intermediaries function, ill-considered regulation such as the new IT Rules is not the way forward.
- While the weakening of encryption systems will no doubt make it easy for law enforcement agencies in dealing with online challenges, **the costs involved in weakening the encryption regime seem to be high**.
- The Government needs to revisit the provisions on traceability and instead **revise and reform the IT Act, 2000** in line with existing global best practices, also legislate the long-pending **Data Protection Bill**. This would be a more viable long term solution to tackle the challenges in the digital ecosystem.

2. Probing the origins of the SARS-CoV-2 virus

Context:

Calls to investigate into the origin of the COVID-19 pandemic have resurfaced.

Details:

- The novel coronavirus was first reported from Wuhan.
 - The Chinese city hosts a laboratory conducting virus research.
- The Program for Monitoring Emerging Diseases (ProMED) notified pneumonia of unknown cause in the city in December 2019.
 - The city's Huanan wet market was associated with many of the earliest cases.

What is the need for investigation into the origin?

According to a group of scientists, this is necessary because the two theories on the origins remain invalid. They are:

1. The virus could have been accidentally released from a laboratory.
2. It was the result of a spillover from some animal species to humans.

What have U.S. intelligence agencies been asked to do?

- Subsequent to the call issued by scientists, U.S. President Joe Biden, ordered an investigation by intelligence agencies into the origins of the virus.
- The Director-General of the World Health Organization (WHO) has also acknowledged that more work needs to be done on the lab leak theory.
 - Earlier, a WHO team that visited Wuhan thought a leak to be the least likely hypothesis.

Why has the demand for a fresh inquiry arisen?

- Understanding the origin of the virus is important to both increase safety in laboratories undertaking biological research, and to prevent pandemics of animal origin.

What is the basis for the natural origin hypothesis?

- The natural origin hypothesis is explained in a **Joint WHO-China study report**.
- It identifies a SARS-related coronavirus in a (horseshoe) bat (SARSr-CoV; RaTG13).
 - SARS-CoV-2 virus has 96.2% genomic similarity to this.

- The novel coronavirus is less similar to the genome of viruses that have caused other epidemics such as SARS (severe acute respiratory syndrome) and MERS (Middle East respiratory syndrome).
- The higher infectivity of SARS-CoV-2 is attributed to the unique insertion of four amino acids in its spike protein that makes it more efficient.
- Their arguments are based on genetic differences between the viruses:
 - While the RaTG13 in bats is similar to SARS-CoV-2, the receptor binding domain (RBD) of the spike (the RBD protein binds to the ACE2 receptor) is divergent for the two.
 - RaTG13's RBD appears less efficient.
 - It is on the basis of this natural origin hypothesis, it was concluded that natural selection on a human or human-like host appeared to facilitate optimal binding of the spike protein of the novel coronavirus with ACE2 receptors. This ruled out the lab-leak hypothesis.
 - It is also believed that a virus was acquired by humans, and it became more efficient as it spread among humans during a certain phase that remains undetected.

3. When two is too little

Context:

- China's Communist Party has introduced a "three child policy".

Background:

China's family planning policy:

- In a bid to limit the population explosion in China, it resorted to **strong state-led demographic interventions**. It was in this direction that it adopted its "one child policy" of 1979.
- It offers a reward and assistance system and preferential policies for those following family planning rules.
 - After the one child policy, China's fertility rate fell from 2.75 in 1979 to 1.69 in 2018.
- Recognizing the ill effects of its one child policy, China relaxed its stance on the number of children and introduced the two child policy in 2015. However, this measure too failed to boost birth rates.
 - The recent population census recorded 12 million births in 2020, the lowest number since 1961.

Concerns associated with Chinese policy of family planning:

- Population control measures have landed China in a **population crisis**.

- China's demographic interventions have had the following **unintended social and economic consequences**.

Social consequences:

- The limitations on the number of children and the gender discrimination prevalent in the society led to a **deeply gender-imbalanced population**. Couples have been resorting to sex-selective abortions and this has reduced the sex ratio considerably. The skewed sex ratio has detrimental consequences for society.
- **The number of aged people has been increasing steadily in China**. As per the census, there were 264 million in the 60 and over age group, accounting for 18.70% of the population. The fast ageing population and the availability of very few people to take care of them would have a detrimental impact on their quality of life.

Economic consequences:

- The rapidly ageing population has **reduced the workforce population and increased the dependency ratio**.
 - The dependency ratio is an age-population ratio of those typically not in the labour force (the dependent part – ages 0 to 14 and 65+) and those typically in the labour force (the productive part – ages 15 to 64). It is used to measure the pressure on the productive population. A low dependency ratio means that there are sufficient people working who can support the dependent population. A higher ratio indicates more financial stress on working people.
- The rapidly ageing population threatens to **limit the growth prospects of China**.

Moral concerns:

- The intrusive family planning policy goes against the **right to freedom of choice for the parents**.
- The strict enforcement of the child policies in China has led to forced abortions and sterilisations.

Reasons for Chinese shift in family planning policy:

- The shift to the three child policy marks an acknowledgement of the consequences of China's intrusive family planning measures.
- The shift to the three child policy is **aimed to improve China's population structure**. It intends to tackle the challenge of the ageing population, and preserve the country's human resource advantages.

Lessons for India from Chinese experience:

- India has been toying with the idea of population control measures through a two-child norm, which found mention in the Prime Minister's Independence Day speech two years ago.
- The Chinese experience should serve as a warning for India that coercive population strategies can be counter-productive.

Indian experience:

Population growth in India:

- **India, with 1.37 billion people, is the second-most populous country in the world.** A report from the United Nations released in June had said that around 2027, India is set to overtake China as the world's most populous country.
- **Birth rates are falling, but the population continues to grow** as more than 30% of the people are young and in the reproductive age group.

Skewed progress:

- India has done very well with its family planning measures and the current fertility rate is at the **replacement level fertility of 2.1**, which is desirable.
 - Replacement level fertility is the level of fertility at which a population exactly replaces itself from one generation to the next.
- However, the pattern has been skewed. In some states like Sikkim, Andhra Pradesh, Delhi, Kerala and Karnataka, the total fertility rate is way below replacement level. The low fertility rates in Sikkim and Lakshadweep have led to challenges of an ageing population, shrinking workforce and an increase in sex-selective practices.

Recommendations for India:

Family planning as a national priority:

- Given that unchecked population growth could go against the efforts to bring millions of people out of poverty and undo the benefits of higher welfare spending for the poor, India needs to treat population stabilization and family planning as a national priority.

Addressing structural issues:

- Notably, even other developing countries, without stringent child-limitation policies like that of China, have also experienced declines in total fertility rates.
- This seems to suggest the fact that the mere relaxation or even abolishing of birth quotas would not help in raising the fertility rate and there is the need for governments to **acknowledge and address structural problems like reducing the child-rearing costs (education and nutrition) borne by prospective parents**. This critical aspect needs to be prioritized.

Focussing on population stabilization:

- India needs to focus its attention on population stabilisation measures rather than resort to coercive measures.
 - **Population stabilization is a stage when the size of the population remains unchanged.** It is also called the stage of zero population growth. Country-level population stabilization occurs when births plus in-migration equals deaths plus out-migration.
- The measures needed in this direction could include the following:
 - **Incentivise later marriages and childbirths**; ensuring a sufficient gap between childbirths.
 - Stepping up **access to contraceptive** choices and addressing socio-cultural barriers towards contraception.
 - **Offering family planning support** and investing in behaviour-change communication strategies and family planning.

4. Breaking the cycle of child labour is in India's hands

Challenge of child labour in India:

Substantial number of working children:

- The Census of India 2011 reports **1 million working children in the age group of 5-14 years**.
 - A substantial proportion of them (8.1 million) reside in rural areas and are mainly engaged as cultivators and agricultural labourers.

Factors aiding child labour in India:

- **Inequality, lack of educational opportunities, traditions and cultural expectations** all contribute to the persistence of child labour in India.

High number of out of school children:

- UNESCO estimates based on the 2011 Indian Census record **1 million children as “out of school” in India**. Given the fact that out of school children are at an increased risk of being pushed into child labour, a substantial number of children in India (18.3% of total children in the age group of 6-13 years) remain vulnerable to be employed as child labour.
- A Government of India survey suggests that 95% of the children in the age group of 6-13 years are attending educational institutions (formal and informal) while it is 79.6% for the 14-17 years age group.

Ill effects of child labour:

- Working children face **physical and psychological risks to a healthy development**.
- Child labour impedes children from gaining the skills and education they need to have opportunities for decent work as adults. This impedes their capacity to overcome the **vicious circle of poverty**.

Recent improvement:

Decrease in child labour:

- The incidence of child labour has **decreased in India by 2.6 million between 2001 and 2011**.

Policy interventions:

- **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005**, has guaranteed wage employment (unskilled) for rural families hence ensuring economic stability for the poor families. A financially secure family would not push its children into work and would rather invest in the education of its children.
- **The Right to Education Act 2009** and the **Mid Day Meal Scheme** have helped in ensuring greater enrolment of children in schools.
- The implementation of the **National Child Labour Project** has helped in the rehabilitation of children rescued from child labour.
 - The National Child Labour Project (NCLP) Scheme is a Central Sector Scheme. Under this Scheme, the children in the age group of 9-14 years are withdrawn from work and put into NCLP Special Training Centres, where they are provided with bridge education, vocational training, mid-day meal, stipend, healthcare, etc. before being mainstreamed into formal education system. The children in the age group of 5-8 years are directly linked to the formal education system through a close coordination with the Sarva Shiksha Abhiyan.

- The Ministry of Labour and Employment-operated **online portal PENCiL (Platform for Effective Enforcement for No Child Labour)** allows government officials, law enforcement agencies and non-governmental organisations to share information and coordinate on child labour cases at the national, state and local levels for effective enforcement of child labour laws. It also allows for better monitoring and transparency with respect to the child labour laws.
- The Indian government has also ratified two Core Conventions of the International Labour Organization (ILO), **Convention 138** regarding admission of age to employment and **Convention 182** regarding worst forms of Child Labour.
 - ILO Convention 138 says that the minimum age for employment should not be less than the age of completion of compulsory schooling (14 years of age in India's case).
- The Central government had enacted a new law – **Child labour (Prohibition and Prevention) Amendment Act, 2016** – banning employment of child labour below 14 years of age in all occupations and processes. It further prohibits the employment of adolescents (14-18 years of age) in hazardous occupations.

Concerns:

Slow progress:

- While child labour has declined during the past decade globally, estimates indicate that the rate of reduction has slowed by two-thirds in the most recent four-year period.

Change of nature of job employing child labour:

- While there has been an overall decrease in the number of child labour, the decline was more visible in rural areas, while the number of child workers has increased in urban areas, indicating the **growing demand for child workers in menial jobs.**

Impact of the pandemic:

- The pandemic has had a significant impact on child labour in India.

Economic aspects:

- The economic contraction and lockdowns ensuing from the pandemic have led to income reductions for enterprises and workers, many of them in the

informal economy. The slower economic growth has resulted in rising unemployment.

- With **increased economic insecurity, lack of social protection and reduced household income**, children from poor households are being pushed to contribute to the family income with the risk of exposure to exploitative work.
- The children of migrant workers are at an increased risk of being pushed into child labour.

Challenges in education:

- The closure of schools and challenges of distance learning due to the **digital divide** threatens to increase the number of children dropping out of education.
 - The NSS Report titled 'Household Social Consumption on Education in India' suggests that in 2017-18, only 24% of Indian households had access to an Internet facility.

Way forward:

- **Stable economic growth, decent work for all, universal education, social protection, recognizing the needs and rights of children** can help tackle the root causes of child labour.
- Given the threat of the pandemic undoing the gains made in eliminating child labour, India must develop appropriate policies and ensure programmatic response during and after the novel coronavirus pandemic. There is a need for more **affirmative and immediate actions**.
- **Strategic partnerships and collaborations** involving government, community-based organisations and child labour families is the need of the hour.

Additional information:

- The United Nations has declared **2021 as the International Year for the Elimination of Child Labour**.
 - 152 million children around the world are still in child labour, 73 million of them in hazardous work.
- **Sustainable Development Goal 8.7 envisages ending child labour in all its forms by 2025.**

5. First Human Case of H10N3 Bird Flu

Why in News

Recently, **China** has reported the **first case of human infection with the H10N3 strain of bird flu** in Jiangsu province.

Key Points

- H10N3 is a **subtype of the Influenza A virus** which is **commonly known as the bird flu virus**.
- It is a **low pathogenic, or relatively less severe, strain of the virus in poultry** and the **risk of it spreading on a large scale is very low**.
 - Among animals, it can **spread through respiratory droplets**, similar to **flu and Covid-19**.
- The strain is **not a very common virus, only about 160 isolates of the virus have been reported in the past 40 years (till 2018)**, that too, mostly in wild birds or waterfowl in Asia and some parts of North America.
 - **None** had been detected **in chickens as of now**.
- There are **many different strains of avian influenza in China** and some **sporadically infect people**, generally those working with poultry.
 - However, there have been **no significant numbers of human infections with bird flu since the H7N9 strain** killed around 300 people **during 2016-2017**.

Bird Flu

- **About:**
 - **Bird flu**, also known as **Avian influenza (AI)**, is a highly contagious viral disease affecting several species of **food-producing birds** (chickens, turkeys, quails, guinea fowl, etc.) as well as **pet birds and wild birds**.
 - Occasionally **mammals, including humans**, may contract avian influenza.
- **Types of Influenza Viruses:**
 - Influenza viruses are grouped into three types; **A, B, and C**.
 - **Only type A** is known to **infect animals** and is **zoonotic**, meaning it can also infect humans.
 - **Avian influenza virus subtypes** include A(H5N1), A(H7N9), A(H9N2) and A(H10N3).
 - **Type B and C mostly infect humans** and typically cause mild disease.
- **Classification:**

- **Influenza viruses** are classified into subtypes based on **two surface proteins, Hemagglutinin (HA) and Neuraminidase (NA)**.
 - For example, a virus that has an HA 7 protein and NA 9 protein is designated as subtype H7N9.
- **Highly Pathogenic Avian Influenza (HPAI) A(H5N1)** virus occurs mainly in birds and is highly contagious among them.
- **HPAI Asian H5N1** is especially deadly for poultry.
- **Impact:**
 - Avian Influenza outbreaks can lead to devastating consequences for the country, particularly the poultry industry.
 - Farmers might experience a high level of mortality in their flocks, with rates often around 50%.
- **Prevention:**
 - Strict **biosecurity measures** and **good hygiene** are essential in protecting against disease outbreaks.
- **Eradication:**
 - If the infection is detected in animals, a **policy of culling infected and contact animals** is normally used in an effort to rapidly contain, control and eradicate the disease.
- **India's Status:**
 - **Fresh cases of bird flu** were reported in different states of India **between December 2020-January 2021** causing alarm across the country.
 - **Previously in 2019**, India was **declared free from Avian Influenza (H5N1)**, which had also been **notified to the World Organization for Animal Health (OIE)**.
 - The **OIE** is an intergovernmental organisation responsible for improving animal health worldwide. It is headquartered in Paris, France.

6. Close the vaccination gap, in global lockstep

Vaccination apartheid:

- There is a **huge vaccination gap between advanced economies and developing countries**.
 - While the advanced countries like the U.S. have been able to vaccinate a substantial proportion of their adult population and hold large stockpiles of vaccines, only 2.1% of Africans have received at least one dose of a COVID-19 vaccine by the end of May 2021 and continue to be exclusively dependant on imports for their vaccination programmes.
- There is an urgent need to address this issue as doing so is not only morally right but would also be in everyone's interest.

Negative impact of vaccination apartheid:

Increasing mutations:

- The global vaccination programme is progressing at a very low pace and at the current pace, the whole world will not be vaccinated before 2023. The lack of a fully vaccinated world will only aid the **multiplication of variants which could be not only more contagious and deadly but would also render the existing vaccines ineffective.**

Economic disruption and its impact:

- The lack of an adequately vaccinated population will lead to periodic spikes in cases necessitating lockdowns and restrictions on movement. These lockdowns are **disrupting economic activity and people's livelihood, thus pushing millions into poverty.** If the vaccination gap persists, it risks reversing the trend in recent decades of declining poverty.
- It will also widen the existing inequalities between the haves and the have nots.

Widening existing inequalities:

- The economic disruption caused by the pandemic while affecting all countries will be **more severe on developing countries** since the advanced countries can rely on existing social security mechanisms and economic policy levers to limit the impact of the pandemic on their citizens. If the vaccination gap persists, it could lead to the widening of global inequalities.

Fuel geopolitical tensions:

- The economic turmoil will invariably increase geopolitical tensions.

Efforts at ensuring universal vaccination:

EU:

- In 2020, the EU supported the research and development of vaccines on a large scale and contributed significantly to the new generation of mRNA vaccines.
- The EU has been exporting large volumes of vaccines and contributing substantially to the vaccine roll-out in low-income countries even as it has undertaken vaccination of its own population.

- The EU with its member states and financial institutions has also been donating vaccines to neighbours in need. It also aims to donate more vaccines to low- and middle-income countries before the end of 2021.
- The EU has also been the main contributor to the **COVAX facility**, with around one-third of all COVAX doses delivered so far having been financed by the EU.
- The European industrial partners have committed to deliver 1.3 billion doses of vaccines before the end of 2021 to low-income countries at no-profit, and to middle-income countries at lower prices.

India:

- **India's "Vaccine Maitri"** is an example of global solidarity on ensuring universal vaccination.
- Vaccine Maitri is a humanitarian and commercial initiative undertaken by the Indian government to provide COVID-19 vaccines to countries around the world.

Multilateral institutions:

- The **International Monetary Fund** has proposed a \$50 billion plan to vaccinate 40% of the world population in 2021 and 60% by mid-2022.

Recommendations:

- Countries with the requisite knowledge and means should **increase their production capacities**, so that they can both vaccinate their own populations and export more vaccines.
- International organizations should facilitate the **transfer of knowledge and technology**, so that more countries can produce vaccines.
- Available **flexibilities within the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement framework of the World Trade Organization** should be made use of. Avenues like **voluntary licensing** should be encouraged and suitably incentivized. If that fails, other avenues like **compulsory licensing** should be activated.
- All countries must avoid restrictive measures that affect vaccine supply chains. The countries must **avoid resorting to "vaccine nationalism"** and should instead focus on closely coordinated multilateral action for the benefit of all. There is the **need for global multilateral action** to increase the production of vaccines and accelerate the roll-out worldwide as noted by the G20 leaders at the recently held Global Health Summit in Rome.

Conclusion:

- The COVID-19 pandemic has reiterated the fact that **health is a global public good**.
- The common global COVID-19 vaccine action to close the vaccination gap must be the first step toward genuine global health cooperation, as foreseen by the **Rome Declaration** recently adopted at the Global Health Summit.
- Universal vaccination of the world population is the only way to end the current pandemic.

Additional information:

Rome Declaration:

- The Rome Declaration was adopted at the **Global Health Summit 2021**.
- The Global Health Summit was organised by Italy in its role as president of the G20 in partnership with the European Commission.
- The Rome Declaration is made up of 16 mutually agreed principles. These principles aim at **guiding joint action to prevent future health crises and to build a safer, fairer and more equitable and sustainable world**.

7. Rural health care needs fixing, and now

Background:

The pandemic has exposed the lack of robust healthcare infrastructure in India:

- The two consecutive waves of COVID-19 and the lack of adequate and timely health care infrastructure in the country have led to a health crisis in India.
- The second wave of the pandemic has also affected the rural areas and the **rural people are struggling to get timely and quality health care**.
- A key takeaway from the pandemic is that India needs to focus on improving its health infrastructure more so in the rural areas.

Lacunae in rural health infrastructure:

- Despite the rural areas supporting a substantial share of the Indian population, **rural areas continue to be plagued by the issue of inadequate and poor health infrastructure**. As a result, our vast rural populace remains deprived of critical health interventions.
 - Out of the 139 crore population of India, around 91 crore people are living in 649,481 villages of India accounting for **about 65% of the Indian population**.

- As against the ideal of one Primary Health Centre (PHC) for every 10 villages, India has only one PHC for 25 villages. As per this metric India has a shortfall of 3,594 PHCs.
- Similarly, there is a shortfall of community health centres (CHCs) as well.
 - CHCs act as a referral centre covering a population of 80,000 people to 1.20 lakh people.
- The CHCs are also **grossly understaffed**. There is a shortfall of 81.8% specialists at CHCs.
- **The number of hospital beds per capita continues to be low in India** with rural areas having far lesser hospital beds as compared to urban areas.
 - As per the Human Development Report 2020, India has eight hospital beds for a population of 10,000 people. While for China the number stands at 40 beds for a population of 10,000 people.
- The number of medical colleges and hospitals continue to be low in rural areas.

Significance of primary health care:

Lessen the burden on tertiary level:

- If the SHCs work effectively, there will be less pressure on PHCs. If the PHCs function well, then there will be minimal pressure on CHCs and so on.
- **PHC system can tackle up to 80% of health needs** and can reduce the need for specialized health care services. Thus strengthening the primary health infrastructure will help lessen the burden on hospitals.

Economic viability:

- A robust rural healthcare infrastructure with a healthy linkage between the SHCs, PHCs and CHCs will help treat the disease/s at the primary level itself. This will help India **save money and resources being spent at tertiary level health care** which is often costly.

Correction of the inverted pyramid pattern in India:

- The focus on primary health care will help correct the **inverted pyramid of Health Services provision and utilization pattern** being observed in India.
 - **A large proportion of health services in India are delivered at the secondary and tertiary levels whereas the demand is high at the primary level.** Thus, the pattern of service utilisation and delivery is inverted in India.
- The reorganization and strengthening of the health services at the primary level (supply side) while also changing the behaviour of people to use the

services at the primary level (demand side) will help India correct the inverted pyramid as discussed above.

Better health outcomes:

- A robust primary health infrastructure has the **advantage of early detection of diseases and timely interventions**. Thus it will invariably lead to better health outcomes for the patients.

Potential for adoption of preventive and health promotion approach:

- Given that primary healthcare acts as the **first point of contact between the health infrastructure and a large proportion of the general populace** in our country, they can be used to promote a preventive approach to healthcare.
 - As per an estimate of WHO, non-communicable diseases (NCDs) such as hypertension, diabetes and cardiovascular diseases cause nearly 5.87 million (60%) of all deaths in India. Given the difficulty of a healthcare infrastructure being able to cater to such a large population, a preventive and promotive healthcare approach becomes inevitable.
- As part of **Ayushman Bharat**, the Government is supporting the States for **strengthening Sub Centres and Primary Health Centres as Health and Wellness Centres** for the provision of comprehensive primary care that includes preventive and health promotion at the community level with a continuum of care approach. Under this scheme, universal screening, prevention and management of common non-communicable diseases have been rolled out across the country.

Recommendations:

Primary healthcare approach:

- **The 2018 Astana Declaration** acknowledges Primary Health Care (PHC) approach as being the most effective way to sustainably solve today's health and health system challenges. Hence such an approach becomes inevitable for a healthy India.
- As per WHO, primary health care is a whole-of-society approach to health and well-being centred on the needs and preferences of individuals, families and communities. It ensures that people receive comprehensive care – ranging from promotion and prevention to treatment, rehabilitation and palliative care – as close as feasible to people's everyday environment.

Sub-district based health system in India:

- Considering the large size of districts in India, effective planning in health services and tackling inequities in health outcomes need a sub-district unit-level planning. Thus the planning and implementation of funding and human resources should focus on these lines.
- There should be a greater focus on establishing block level health units.

Addressing the shortfall in rural healthcare infrastructure:

- Villages need adequate health services.
- The number of PHCs should be expanded and also these PHCs should have the provision of some beds and other minimum necessary facilities.
- The CHC must be **equipped with the necessary infrastructure and trained medical personnel**.
- **Regular health camps** need to be organized for areas without necessary access to the healthcare infrastructure.
- The chain of SHCs, PHCs and CHCs must be designed to take care of the multiple health needs of our people.

Focussing on health outcomes:

- Apart from higher budgetary allocations to the health sector, there is also a need to ensure that the money being spent **improves health facilities and improves health outcomes**.
 - In India, the recent National Health Policy 2017 has proposed to spend two-thirds or more of Government spending on the PHC system.
- The healthcare facilities in the rural areas must be able to provide regular and comprehensive healthcare needs based on the World Health Organization (WHO)'s **principle of Universal Health Coverage**.
 - Universal Health Coverage ensures that all people have **access** to needed health services (including prevention, promotion, treatment, rehabilitation and palliation) of sufficient **quality** to be effective while also ensuring their affordability.

Collective responsibility:

- Despite **health being a State subject**, the state and central governments must take up the task of improving the healthcare infrastructure in rural areas as a collective responsibility.
- Additionally, the governments must also engage with all kinds of rural community organisations such as panchayats, gram sabha, notified area committees, municipal bodies and non-governmental organisations to realize the potential benefits that such a collaborative approach can yield.

8. Comments to avoid in long-standing ties

Context:

- The article authored by the former High Commissioner to Bangladesh and Foreign Secretary Krishnan Srinivasan analyzes the India-Bangladesh bilateral relations.

Challenges in the India-Bangladesh relationship:

Border issue:

- India and Bangladesh share an approximately **4,100-kilometre land border**.
- Despite the friendship remaining solid, the border has been sensitive. At least 25 Bangladeshis were killed in the first six months of 2020 along the border by Indian forces, according to a rights watchdog.
- **Human trafficking and smuggling of arms, cattle, drugs** through the unfenced borders is a serious security threat for India.
- **Illegal migrants** from Bangladesh pose socio-economic challenges in the bordering states.

River water sharing:

- The **Teesta water dispute** remains unresolved. This has had a drag on taking the relationship to a higher level.
- India and Bangladesh share almost **54 Transboundary rivers**.

Trade imbalance:

- Despite robust trade relations between the two neighbours, there is a **highly skewed balance of trade in favour of India**. This has been a cause of concern for Bangladesh and there have been repeated calls from it to urgently address the **trade imbalance** by India adopting favourable trade policies.
 - Bangladeshi Foreign minister had recently called on India to provide a tariff-free facility for exports from Bangladesh.

China factor:

- China is making deep inroads into Bangladesh by ramping up infrastructure investments (energy projects) and expanding economic cooperation.

Increasing radicalization:

- Bangladesh has continued to face challenges from Islamist factions.
- Recently an Islamist group, Hifazat-e-Islam, organised mass protests against French President Emmanuel Macron and opposed the government's plan to build a statue of the country's founding father, Bangabandhu Mujibur Rahman, in Dhaka's suburbs.
- Groups like **Harkat-ul-Jihad-al-Islami (HUJI)** operating out of Bangladesh have been espousing **anti-India sentiments**.

Turbulent past:

- The turbulent **history of Partitions**; East Bengal that became East Pakistan and then Bangladesh, attended by enormous bloodshed and the abuse of human rights, has left emotional wounds.

Irritants in the relation:

- **The Citizenship (Amendment) Act** and the proposed National Register of Citizens have created a negative impression about India in Bangladesh.
- Statements being made by the politicians have strained the otherwise friendly relationship between the two neighbours.

Significance of the relationship:

For India:

- Can provide easy **connectivity to the landlocked Northeastern states**.
 - There has been considerable improvement in connectivity between India and its Northeast by land, river and the use of Bangladeshi ports.
- Important for the **security of NE India** as cooperation with Bangladesh can help neutralise/tackle the insurgent groups which otherwise seek refuge in neighbouring countries.
- Partnership can help **balance China's growing influence in the region**.
- Bangladesh is India's largest trading partner in South Asia. It offers a **large market for Indian goods and also an avenue for investment**.
- There are at least 100,000 Indian nationals now living and working in Bangladesh.

For Bangladesh:

- Bangladesh is nearly surrounded on all territorial sides by India.
- India is a **major source of FDI into Bangladesh**.
- Receives **developmental assistance and lines of credit from India**.
- Co-operation in the power sector:
 - It imports over 1200 MW of electricity from India.

- Joint collaboration over Roopur nuclear plant.
- Humanitarian aid in times of need.

Unique relationship between India and Bangladesh:

- India shares a unique relationship with Bangladesh given the otherwise troubled bilateral relations in the Indian subcontinent.
 - India played a **leading role in Bangladesh's liberation struggle** and was its sole economic supporter in its early years of independence.
 - A significant proportion of the Bangladeshi population treasure the **linguistic and cultural ties** with adjacent India.
 - The **cordial resolution of the dispute regarding the delimitation of the maritime boundary between India and Bangladesh** marks a high mark of the bilateral relationship wherein international relations have been marred by an otherwise hostile approach to such issues. Eg. – South China Sea dispute.
 - The **implementation of the Land Boundary Agreement** is also a landmark event in the bilateral relationship in a region otherwise marked by border disputes.

Conclusion:

- To a certain degree, both India and Bangladesh depend on each other for security and stability.
- As quid pro quo for India's support to Bangladesh, while India expects that Bangladesh would keep India's concerns in mind when devising and pursuing its policies, India too should respect the sensibilities of the neighbouring country.
- **India-Bangladesh relationship as a major pillar of India's 'neighbourhood first' policy.** It is imperative for India to bolster ties with Bangladesh as a priority.
- India should leverage its unique relationship with Bangladesh to revive the bonhomie and address the issues adversely affecting the partnership.

9. Information Technology Rules: a case of overreach?

The article analyzes the **privacy versus security issue** brought to light by the **recent IT rules mandating traceability provisions**. This issue has been previously discussed in the following articles.

Details:

- The one major cause for concern raised by WhatsApp is Rule 4(2) of the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.
 - Rule 4(2) of the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 imposes an obligation on significant social media intermediaries providing a messaging function, to ensure **traceability of the originator of information** on their platforms.
 - A “significant social media intermediary” is one with more than 50 lakh registered users.
 - Failure to implement the traceability obligation by the intermediaries can lead to them being held responsible for any illicit content on their platforms and thus the companies could lose their ‘safe harbour’ protection.
 - The safe harbour protection gives the social media intermediaries protection against liability (civil as well as criminal) for content posted on their platform by third party users. The safe harbour protection is granted under Section 79 of the IT Act.

WhatsApp’s arguments:

- WhatsApp’s argument is that the traceability provision of the new rules would require it to **break its end-to-end encryption service** which would **amount to the encroachment of user privacy**.
 - End-to-end encryption service allows messages to be read only by the sender and the receiver thus enabling privacy protections.

Government’s argument:

- The Government primarily relies on the argument that **privacy is not an absolute right**, and that the traceability obligation is only a reasonable restriction on the right to privacy.
- The government argues that the traceability provision is in line with the K.S. Puttaswamy judgment which held that any restriction to the right of privacy must be necessary, proportionate and includes safeguards against abuse.
 - The government’s main line of argument in favour of the traceability guidelines is that such powers would be **vital to law enforcement in dealing with and tackling harmful online content**.
 - The Ministry of Electronics and IT has stated that the traceability measure will be **used by law enforcement as the “last resort”** and in the absence of any alternatives. Also, it will only be **used in specific situations**, such as for prevention, detection, investigation, prosecution

or punishment of offences related to the sovereignty and integrity of India, child sexual abuse material, etc.

- The intermediaries are mandated to undertake traceability **subject to an order being passed by a court or government agency.**

Counter arguments:

- The article discusses some of the major concerns regarding the new IT rules.

Against the judiciary's observations in the K.S. Puttaswamy case:

- As against the government's claim that the concerned provision is in line with the K.S. Puttaswamy judgement, the article argues that a closer analysis reveals that the **traceability provision in fact goes against the basic tenets of the judgement.**
 - The Supreme Court of India in the K.S. Puttaswamy judgement has clarified that **any restriction on the right to privacy must be necessary, proportionate and includes safeguards against abuse.**

Not proportionate:

- The general obligation to enable traceability as a systemic feature is not proportionate.
- There could be an immense adverse impact of the traceability provision on the general digital ecosystem in terms of the overall cybersecurity and privacy concerns.
- **The general weakening of the encryption regime would compromise the privacy and security of all individuals at all times, despite no illegal activity on their part.**

Lack of safeguards:

- The Rules lack effective safeguards by **failing to provide any system of independent oversight over tracing requests** made by the executive.
- The lack of safeguards like independent or judicial oversight in enforcing traceability would allow government agencies to seek user's identity and this could compromise the anonymity of whistle-blowers and journalistic sources.

Availability of alternate avenues for government:

- The Government already has **numerous alternative means of securing relevant information to investigate online offences.**
 - The Government is empowered to seek access to encrypted data under **Section 69(3) of the IT Act, and Rules 17 and 13 of the Information**

Technology (Procedure and Safeguards for Interception, Monitoring and Decryption of Information) Rules, 2009 under which intermediaries are required to assist the administration with decryption when they have the technical ability to do so and when law enforcement has no other alternative.

- The administration is also empowered to seek unencrypted data, metadata and digital trails from intermediaries.
- The **Justice B.N. Srikrishna Committee report of 2018** recognizes the surveillance powers of the Government as being vast and overreaching.

Lack of scrutiny:

- There has been a **lack of adequate consultation** with the stakeholders prior to the introduction of the traceability provision under the new rules.
- Ideally, the new Rules should have been put through a period of consultation before being notified.

Conclusion:

- While there are problems in the digital ecosystem that are often exacerbated or created by the way intermediaries function, ill-considered regulation such as the new IT Rules is not the way forward.
- While the weakening of encryption systems will no doubt make it easy for law enforcement agencies in dealing with online challenges, **the costs involved in weakening the encryption regime seem to be high.**
- The Government needs to revisit the provisions on traceability and instead **revise and reform the IT Act, 2000** in line with existing global best practices, also legislate the long-pending **Data Protection Bill**. This would be a more viable long term solution to tackle the challenges in the digital ecosystem.

10. No decision on indemnity to vaccine makers yet

Context:

The Union government has still not taken a final decision on the indemnity to either foreign or local COVID-19 vaccine manufacturers.

Background:

- Pfizer and Moderna have been **demanding indemnity as a pre-condition to enter into supply contracts with India.**
- Local manufacturer Serum Institute of India (SII) is also seeking the same.
- The government said it was **considering the requests**, and is **yet to take a decision.**

What is indemnity?

- The indemnity will **protect manufacturers from any potential civil-legal liability or immunity from being sued by people for any unforeseen complications arising from their COVID-19 vaccine.**

Why are manufacturers demanding indemnity?

- The **vaccines were developed at record speed and were approved for emergency use.**
- As the processes were expedited, there is a possibility of **potential unknown side-effects.**
- Therefore, the vaccine makers have demanded the **governments to support them by providing them indemnity.**

Pfizer enjoys such immunity in the US, UK and most other countries where it is supplying COVID-19 vaccines.

What happens in case the Government allows indemnity?

- Indemnity is only a contractual arrangement between the vaccine manufacturer and the government will be privy.
- In case people suffer from a grave injury, disability and death linked to the vaccine, **indemnity doesn't stop people from suing the manufacturer.**
- Liability under the legislation will be intact. They can **recover the losses contractually from the government.**

Way Forward:

- There is a need to strengthen **adverse event following immunisation (AEFI) reporting and investigations.**
- Government must be more **transparent on indemnity arrangements.**
- At present, there is no compensation mechanism available for COVID-19 vaccine linked serious adverse events or for that matter any vaccine.
- Public health activists say the government should **create a compensation mechanism.**

Note:

COVAX and the WHO have crafted indemnification agreements for countries considered Advanced Marketing Commitment Participants, or those who will be receiving donated vaccines.

11. A Chinese enclave in Sri Lanka?

Context:

- Recently, Sri Lanka passed the **Colombo Port City Economic Commission Bill** despite wide opposition to it.

Details:

- The Colombo Port City Economic Commission Bill governs the **China-backed \$1.4 billion Colombo Port City project**.
 - The Colombo Port City is an artificial island that would be reclaimed from Colombo's seafront.
 - Being pitched as a "world-class city for South Asia", there is a proposal to develop an international financial hub in the island.
 - **The project is financed chiefly through Chinese investment** amounting to \$1.4 billion, via CHEC Port City Colombo, a unit of the State-owned China Communications Construction Company (CCCC). In return, the company will receive some portion of the developed land on a 99-year lease.

Domestic opposition to the project:

- The China-backed Colombo Port City project has been opposed by the Opposition and citizens of Sri Lanka.
 - Opponents to the project have warned against the creation of a "**Chinese enclave**" in Sri Lanka given the fact that the bill provides the Port City and the powerful Commission that will run it substantial "immunity" from Sri Lankan laws. This the opponents argues goes against Sri Lanka's sovereignty.
 - The bill also offers huge tax exemptions and other incentives for investors. This could adversely affect the already fragile finances of the island nation.
 - The Colombo Port City project has faced opposition from environmentalists and fisherfolk, who fear that the project would affect marine life and livelihoods.
 - Trade unions have also opposed the project, contending that labour rights had no protection under the proposed framework

Concerns for India:

Location of the project:

- The Colombo Port City **strategic location adjacent to the Colombo Port**, the country's main harbour has raised suspicions of the Chinese intentions.
- This seems like an attempt of the Chinese to increase its presence and foothold in the Indian Ocean region, considered India's zone of influence. This seems to be a **continuation of the Chinese policy of encirclement of India**.

Increasing Chinese presence of the Chinese in Sri Lanka:

- The Colombo Port City would be the **third major port-related infrastructure project in Sri Lanka** where China has a significant stake. The other two include an 85% stake in the **Colombo International Container Terminals Ltd. (CICT) at the Colombo Port** and the **Hambantota Port** in the Southern Province, where China holds a 99-year lease.

Increasing alignment of Sri Lanka with China:

- The inclusion of **Sri Lanka as a partner in China's ambitious Belt and Road Initiative**, would only push the strategically located island location of Sri Lanka into sphere of influence.

12. The coming together of the powerful five

Context:

- In the light of **India gearing up to host 2021's BRICS summit**, the article analyses the potential of the grouping while also discussing the challenges being faced by the group.
 - BRICS is the acronym coined to associate five major emerging economies: Brazil, Russia, India, China, and South Africa.

Background:

History of BRICS:

- In 2006, leaders of the BRIC countries met in St. Petersburg, Russia, and the grouping was formalized.
- **In 2009 the first BRIC summit was held in Yekaterinburg.**
- South Africa was admitted in 2010 and attended the annual summit in 2011.

Challenges:

- The grouping is facing several challenges which have rendered the grouping ineffective in realizing its true potential.

Disputes between the member countries:

- There are **multiple economic, territorial, and political disputes** between the five constituent countries.
 - Border tension between India and China.

Economic underperformance:

- As against the original conception of BRICs as economies that would drive global economic growth in the future, **no member apart from China, have fulfilled their economic potential.**
 - South Africa's debt-laden economy and the negative current account have led to predictions of an economic collapse in the next decade.
 - Brazil's poor handling during the Covid-19 crisis has ranked it amongst the world's worst-affected countries, and its recovery is expected to be delayed.
 - India's economic slowdown has been a major concern.

Inherent divisions in the group:

- There is inherent differences between the members of the group with respect to the **economic clout and power they enjoy in the global institutions.**
 - China economic prowess remains unmatched in the group. While Russia and China enjoy higher per capita income indicative of economic development the other three members of the group have much lower per capita income levels.
 - Also given that **China and Russia are already members of the UN Security Council**, It remains to be seen how far they will go in advocating for the other BRICS members to be a part of a reformed Security Council.

Increasing alignment with the west:

- **India, Brazil and South Africa have equal, if not stronger, strategic ties with western powers as compared to the other two members** of the group- China and Russia.
- India's membership of the U.S.-India-Australia-Japan Quadrilateral Strategic Dialogue (Quad) and India's increasing alignment with the U.S. has cast a shadow over the future of the BRICS.

Lack of common vision:

- **Disagreements between its members and lack of a common vision** are major concerns in the grouping.

- China's decision to launch the trillion-dollar Belt and Road Initiative in 2017 was opposed by India, and even Russia did not join the BRI plan, although it has considerable infrastructure projects with China.

Significance:

Equitable world order:

- BRICS was envisaged as an alternate grouping of emerging economies that **challenge the post-War world order** and establish a more equitable world order.

Significant initiatives:

- BRICS has created the **New Development Bank (NDB)**, the **BRICS Contingent Reserve Arrangement fund** to deal with liquidity crunches, and a **BRICS payment system** proposing to be an alternative to the SWIFT payment system.

Political alignment:

- While the economic was the major Planck of cooperation between the member countries, political alignment has also been observed in certain instances.
- They have called for **more inclusion in the multilateral world order**, decrying U.S.-Europe backed military interventions, and expressing independent stances on several world events.
 - The recent BRICS ministerial meeting came out with the first "standalone" joint statement on **reforming multilateral institutions**, including the UN and the UNSC, International Monetary Fund and World Bank and the World Trade Organization.
 - The BRICS ministerial meeting also came out with an important agreement to support negotiations at the WTO for the waiver of trade-related intellectual property rights (TRIPs) for vaccines and medicines to tackle the Coronavirus pandemic. BRICS support at the WTO for the TRIPs waiver negotiations will be a boost for the effort.

13. Recognising sex work as work

The article talks about the need to grant **basic labour rights to adults who earn by providing sexual services and consider the decriminalisation of sex work.**

Context:

- Sex workers are among those communities that have been badly affected during the pandemic.
- As sex work is not recognised as **“legitimate work”**, sex workers have not been able to yield benefits from the government’s relief programmes.

Details:

- In India, sex work is governed by the **Immoral Traffic (Prevention) Act**.
- The **Suppression of Immoral Traffic in Women and Children Act** was enacted in 1956.
- After having made a few amendments to the act, it was changed to the Immoral Traffic (Prevention) Act.
- The legislation penalises acts such as **keeping a brothel, soliciting in a public place, living off the earnings of sex work and living with or habitually being in the company of a sex worker**.

Issue:

- This Act represents the old-fashioned and regressive view that sex work is **morally wrong** and that the people involved in it, especially **women, never consent to it voluntarily**.
- In the popular depiction, entry into sex work is involuntary and through deception. It is believed that these **women need to be rescued and rehabilitated**, sometimes even **without their consent**.
 - While in certain cases involving minor girls the argument is true, for **many consenting adult sex workers, it has been a problem**.
 - It carries **prejudice** that **women who practise sex work are morally devious**.
- Besides criminalising sex work, the act has **pushed sex work underground** thereby leaving sex workers **more prone to violence, discrimination and harassment**.
- It deprives the sex workers of the powers to fight against the traffickers and has made them more **susceptible to be harassed by state officials**.
- A major argument is that the **Act denies an individual their right over their bodies and imposes the will of the state over adults articulating their life choices**.

Way Forward:

- Evidence shows that **many women choose to remain in sex work** despite opportunities to leave after rehabilitation by the government or non-governmental organisations.

- The **Justice Verma Commission** had also acknowledged the distinction between **women who are trafficked** for commercial sexual exploitation and adult, **consenting women who are in sex work** of their own will.
- The judiciary is moving in the direction of recognising sex workers' right to livelihood.
 - The **Supreme Court**, in *Budhadev Karmaskar v. State of West Bengal* (2011), opined that **sex workers have a right to dignity**.
- Sex work must be recognised as work.
- Adult men, women and transgender persons in sex work have the right to earn by providing sexual services.
- They must be allowed to live with dignity; and remain free from violence, exploitation, stigma and discrimination.
- The government must take a re-look at the existing legislation and do away with the 'victim-rescue-rehabilitation' narrative.
- COVID-19 has provided more reasons to consider the **decriminalisation of sex work** and a **guaranteed set of labour rights** which are among the long-pending demands of sex workers in India.

14. Chemical Weapons Convention

Why in News

Recently, the **Organisation for the Prohibition of Chemical Weapons (OPCW)** informed the **United Nations (UN)** that in **17 cases chemical weapons were likely or definitely used by Syria**.

- **OPCW** was formed under the **Chemical Weapons Convention (CWC) 1997**.

Key Points

- **Chemical Weapons:**
 - A Chemical Weapon is a **chemical used to cause intentional death** or harm through its toxic properties.
 - **Munitions, devices and other equipment** specifically designed to weaponize toxic chemicals also fall under the definition of chemical weapons.
- **Chemical Weapons Convention:**
 - **About:**
 - It is a **multilateral treaty banning chemical weapons** and requiring their destruction within the stipulated time.
 - Negotiations for the CWC began in 1980 at the **United Nations Conference on Disarmament**.
 - The convention was **drafted in September 1992** and **opened for signature in January 1993**. It became **effective from April 1997**.

- It makes it **mandatory to destroy old and abandoned chemical weapons**.
- Members should also declare the **riot-control agents** (sometimes referred to as 'tear gas') **in possession** of them.
- **Members:**
 - It has **192 state parties and 165 signatories**.
 - **India** signed the treaty in **January 1993**.
- **Convention Prohibits:**
 - The development, production, acquisition, stockpiling, or retention of chemical weapons.
 - Transferring of chemical weapons.
 - Using chemical weapons.
 - Assisting other States to indulge in activities that are prohibited by the CWC.
 - Using riot-control devices as 'warfare methods'.
- **Organisation for the Prohibition of Chemical Weapons:**
 - **About:**
 - It is an **international organization** established by the CWC in 1997 to implement and enforce the terms of the CWC.
 - By the **2001 Relationship Agreement** between the **OPCW and the UN**, the OPCW reports on its inspections and other activities to the UN through the office of the Secretary General.
 - The OPCW was awarded the **Nobel Peace Prize** in 2013.
 - **Headquarters:**
 - **Hague, Netherlands**.
 - **Functions:**
 - It is **authorized to perform inspections** to verify that signatory states are complying with the convention.
 - This **includes a commitment to grant inspectors full access** to chemical weapons sites.
 - It also **performs testing of sites and victims** of suspected chemical weapons attacks.
 - It also **provides for assistance to and protection of States attacked or threatened with chemical weapons**, cooperation in the peaceful use of chemicals.
- **Indian Initiative:**
 - The **Chemical Weapons Convention Act, 2000** was passed to implement the CWC.
 - It provided for the establishment of a **National Authority for Chemical Weapons Convention or NACWC**. This institution, formed in 2005, is the **chief liaison between the government of India and the OPCW**. It is an office in the Cabinet Secretariat of the GoI.

Basel, Rotterdam and Stockholm Conventions (Hazardous Chemicals and Wastes)

- The Basel, Rotterdam and Stockholm conventions are **multilateral environmental agreements**, which share the common objective of **protecting human health and the environment from hazardous chemicals and wastes**.
- **The Basel Convention:**
 - It came into force in **1992, intended to reduce transboundary movements of hazardous waste** from developed to less developed countries (LDCs), and ensure their safe disposal as closely as possible to the source of generation.
 - **India is a member.**
- **Rotterdam Convention:**
 - It was adopted in **September 1998** by a Conference of Plenipotentiaries in Rotterdam, Netherlands and entered into force in **February 2004**.
 - **India is a member.**
 - It covers **pesticides and industrial chemicals that have been banned or severely restricted** for health or environmental reasons by Parties and which have been notified by Parties for inclusion in the Prior Informed Consent (PIC) procedure.
 - The Convention **creates legally binding obligations** for the implementation of the Prior Informed Consent (PIC) procedure.
- **The Stockholm Convention:**
 - It is a global treaty to **protect human health and the environment from Persistent Organic Pollutants (POPs)**. **India is a member**. The Convention entered into force in **May, 2004**.
 - **POPs** are chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of living organisms and are toxic to humans and wildlife.

15. US Suspends Retaliatory Tariffs on India

Why in News

Recently, the US **suspended imposition of retaliatory tariffs** against six countries, including India, that had begun imposing **digital services tax** on companies such as Google and Facebook.

- Other than India, the countries slapped with this tariff proposal are **Austria, Italy, Spain, Turkey, and the United Kingdom**.

Digital Services Taxes

- **DSTs are the adopted taxes on revenues that certain companies generate from providing certain digital services.** E.g. digital multinationals like Google, Amazon and Apple etc.
- **The Organisation for Economic Cooperation and Development (OECD) is currently hosting negotiations with over 130 countries that aim to adapt the international tax system.** One goal is to address the tax challenges of the digitalization of the economy.
 - Some experts argue that a **tax policy designed to target a single sector or activity is likely to be unfair** and have complex consequences.
 - Further, the **digital economy cannot be easily separated out from the rest of the global economy.**

Key Points

- **Background:**
 - Tariffs were imposed after the office of the **United States Trade Representative (USTR)** noted that the **Digital services taxes adopted by India, Italy and Turkey discriminate against US companies** and are inconsistent with international tax principles.
 - **Under Section 301 of the Trade Act of 1974, the USTR enjoys a range of responsibilities and authority to investigate and take action** to enforce US national interests under trade agreements and respond to certain foreign trade practices.
- **Reason for Suspension:**
 - **Multilateral Solution:**
 - To **allow time for ongoing international tax negotiations** to continue. The US is **seeking a multilateral solution** while maintaining the option of imposing tariffs under **Section 301** if warranted in the future.
 - **Damage to Global Economy:**
 - The six countries potentially impacted are passing through a weak post **Covid-19** recovery and **opening a new trade war front could be damaging** not only to them, but also to the broader global economy.
 - The **combination of depressed economic activity** owing to the effects of the **pandemic** and **tectonic shifts in global supply chains** engendered by the **US' trade war with China** has already **left many economies in a weakened condition.**
 - **Change in Administration:**
 - Under the previous US government (Trump) **USTR was used to promote what his administration considered to be free, fair and reciprocal trade**, specifically to close the gap or **balance of trade** between the US and foreign governments.

- However, the new administration (Biden) appears to be **seeking a middle path of waving the stick of the USTR while allowing some space for continued tax negotiations with the nations concerned.**
- **Impact on India:**
 - **Loss of Revenue:**
 - The tax levied by the Finance Bill, 2021, could yield **approximately USD 55 million annually.**
 - Negotiations with the US that may result in the scaling back of this tax would **imply that a part of this revenue would be lost to the exchequer,** depending on the final rate agreed.
 - **Impact on Exports:**
 - Close to **USD 118 million of India's exports** to the US would be subject to the **tariff proposed by the USTR, impacting 26 categories of goods such as:**
 - Basmati rice, cigarette paper, cultured pearls, semi-precious stones, certain gold and silver jewellery items and specific types of furniture products.*
 - **Growth Prospects:**
 - Any escalation matrix of retaliatory taxation with the US **would damage its growth prospects at a crucial point in its laborious recovery.**
 - However, India will also not be able to **simply abandon its articulated intent to tax global tech firms,** which have generally enjoyed lowtax operations across numerous jurisdictions.

India's Tax on Digital Companies

- The government had moved an **amendment in the Finance Bill 2020-21 imposing a 2% digital service tax (DST)** on trade and services by non-resident e-commerce **operators with a turnover of over Rs. 2 crore.**
 - This effectively expanded the scope of equalisation levy that, till last year, only applied to digital advertising services.
 - Earlier, the **equalisation levy (at 6%) was introduced in 2016 and imposed on the revenues generated on business-to-business digital advertisements and allied services of the resident service provider.**
- The new levy **came into effect from 1st April 2020.** E-commerce operators are obligated to pay the tax at the end of each quarter.
- The idea is to **tax payments made to offshore entities which do not have a physical presence** here and therefore the income tax department cannot subject such income earned from India to tax.

Way Forward

- As India is racing towards becoming a digital giant, the 2% DST should be negotiated to avoid any hurdles in its implementation. **India should consider its options carefully at this juncture.**
- Further, there needs to be **international consensus on taxation on a digital economy.**

16. Connecting the dots to mitigate a third wave

Context:

- The abating second wave of the novel coronavirus and concerns associated with a possible third wave.

Reproduction Number (R_0):

- R_0 also referred to as the reproduction number is a mathematical term that indicates **how contagious an infectious disease is.**
- It indicates the **average number of new infections arising from one infected individual.**
- R_0 fluctuates over time during an epidemic. When R_0 is greater than 1, infected individuals infect more than one person on average and we observe increasing cases. When it is less than 1, cases are declining.

Determinants of R_0 :

- R_0 depends on four factors:
 - **The duration of infectiousness of an infected person**
 - This depends on the **virus variant** as well as the medical interventions available to control the infectiousness.
 - **Opportunities infected individuals have to spread the infection to others**
 - **Super spreader events** where many individuals are infected by a small number of individuals has been a characteristic feature of COVID-19.
 - Increased **social mixing and large gatherings** are good opportunities for the spread of infection.
 - **The probability of transmission occurs given an opportunity**
 - Not taking proper preventive measures like **social distancing and the use of masks in public spaces** can lead to increased transmission.

- The transmission of a virus is also dependant on the mutant variant. The B.1.617.2, recently known as the delta variant, is known to be much more transmissible.
- **The average susceptibility of a population to infection**
 - Susceptible individuals lack immunity derived through **prior infection or immunisation**.

Measures needed to avoid a third wave:

- The understanding of the determinants of the reproduction number can help understand the dynamics of a pandemic and will therefore help mitigate and prepare for future waves.
- Following measures could be taken to **decrease the determinants so as to keep R_0 as low as possible**.

Approach in line with the dynamic nature of the pandemic:

- **Genome sequencing** should be undertaken to ensure early recognition of new variants of concern.
- The isolation and quarantining guidelines, treatment protocol should be revisited with the mutating virus and scientific evidence related to it.

Reducing opportunities for infection:

- **Mass gatherings should be restricted.**
- **Localized lockdowns** can be implemented to substantially reduce opportunities for transmission.

Reducing the probability of transmission:

- Transmission can be reduced through increased **use of face masks and improved ventilation**.
 - Research from neighbouring Bangladesh indicates that providing free masks together with community monitors can help improve the adoption of such measures.

Understanding and protecting the susceptible population:

- The susceptible population can be increased by **increasing immunisation coverage**.
- The administration should undertake well-designed **seroprevalence surveys** to understand how much of the population remains susceptible and where they reside.

- Further studies into questions about waning immunity and the potential for reinfections should be prioritized for a better understanding of the infection.

17. Towards a stronger mental health strategy

Context:

- **COVID-19 has exacerbated mental health issues among the Indian population** due to lockdowns and related issues.

Mental illness:

- Mental illness refers to a wide range of mental health disorders that **affect one's emotion, thinking and behaviour**.
 - Mental illnesses include depression and anxiety disorders, psychotic disorders, mood disorders, substance use addiction, personality disorders and eating disorders. It also includes schizophrenia and bipolar disorder.
- They are generally characterized by a combination of abnormal thoughts, perceptions, emotions, behaviour and relationships with others.
- Mental illnesses are associated with distress and/or problems functioning in social, work or family activities.

Challenge posed by mental illness:

Increasing burden of mental health issues:

- Both incidence and severity of mental illnesses are on the rise. The WHO estimates that at any given time 10% of the global population suffers from some form of mental illness.
- The proportional **contribution of mental disorders to the total disease burden has doubled between 1990 and 2017 in India**.
- As per the reports published in Lancet, **one in seven people in India had a mental disorder ranging from mild to severe in 2017**. The pandemic would have only increased this number.

Morbidity and mortality:

- As per the assessment by World Health Organization (WHO), there is a **10-25-year life expectancy reduction in patients with severe mental disorders**, thus, indicating the otherwise invisible impact of mental health on the overall well being of a person.
 - Estimates suggest that depression, the most common mental disorder will be the second leading cause of disability worldwide.

- The majority of **suicides in the world are related to psychiatric problems or to the illnesses associated with mental health.**
 - Globally, the suicide rate was 10.6 per 1,00,000 population whereas, in India, it was 16.3 per 1,00,000 in 2016.

Stigmatization:

- Many people who have a mental illness do not want to talk about it because of the **stigma and discrimination attached to mental illness in societies.**
- Some of the effects of stigma include feelings of shame, hopelessness and isolation, leading to reluctance to ask for help or to get treatment and lack of understanding by family, friends or others.
- This results in a lack of detection and robs the potential advantage of early intervention in the treatment of mental illness.

Increased vulnerability in certain sections:

- Though mental illness does not discriminate and can affect anyone regardless of age, gender, income, three-fourths of all mental illness begins by age 24.
- **Depressive disorders are more prevalent among females than males** which could be due to sexual abuse, gender discrimination, stress due to antenatal and postnatal issues and other reasons.
- The level of development, modernization and urbanization may also be a factor on which mental health depends as is observed in the trend where mental illness is a bigger challenge in the southern states compared to the northern states of India.

Measures being taken in India:

- India introduced the **National Mental Health Policy (NMHP)** in 2014 and a rights-based **Mental Healthcare Act in 2017.**
- The National Health Mission, National Adolescent Health Programme, and Ayushman Bharat also incorporate mental health within their ambit.

Lacunae in efforts:

Lack of requisite attention:

- There continues to be a lack of focussed attention given to mental health compared to other major diseases in India despite the increasing burden of mental health.
- **Mental health may not be the primary concern in developing economies like India** as there may be other communicable and non-communicable diseases that may be more prevalent.

Low expenditure on mental health infrastructure:

- The government expenditure on hospitals dealing with mental health issues as a percentage of total government expenditure on mental health is 1.3% in India. This is low compared to that observed in developed countries where it ranges from 3% to 15%.
 - As per the Lancet Public Health (2019) report **the median mental health spending across the world was around 2% of the total government health expenditure in 2015**. There was higher allocation in developed countries than in developing countries.

Low supporting infrastructure for mental health:

- The per capita availability of **mental hospitals, mental health units in general hospitals, mental health outpatient facilities, mental health day treatment facilities and community mental healthcare residential facilities** continue to be below the global average.
- Unlike in developed countries where there has been a growth of mental healthcare facilities in line with the increase in patients with mental health issues, there has been no such improvement in India.

Lack of trained workforce:

- The availability of **nurses, social workers and psychologists** working in the mental health sector (per 1,00,000 population) in India continue to be considerably below the global average.

Recommendations:

Increasing awareness on mental health:

- Given the lack of awareness when it comes to mental health, the administration should work towards creating adequate awareness on this issue.
 - Mental health is the foundation for emotions, thinking, communication, learning, resilience and self-esteem. Mental health is also key to relationships, personal and emotional well-being and contributions to community or society and hence should be **accorded equal emphasis along with that of physical well being**.
 - **Mental illness is just another medical condition that can be treated with appropriate medical interventions**.
- Given the potential of communities and families in the detection and treatment of mental healthcare issues, there should be relevant policies to facilitate community-based programmes on mental healthcare. **School-based**

programmes on mental health could be an important intervention in this regard.

- The increased awareness will help destigmatize mental illness and help reduce discriminatory attitudes towards people suffering from mental illness.

Reducing treatment gap:

- To effectively address mental health issues, India needs to work towards reducing the treatment gap for mental disorders, by **increasing the availability of mental healthcare facilities and trained personnel in the mental health sector**.
- The government should focus on **universalizing mental healthcare** as well in India by ensuring **accessible, affordable and quality mental healthcare services for all**.
- This would require more fund allocation for mental healthcare. **A dedicated fund** for this sector would be a welcome move.
- The provision of **more community-based mental health services** would be a more effective, less costly and easily accessible alternative to the more traditional mental healthcare facilities.

Integrated approach:

- There is a need for an integrated approach for **detecting, treating, and managing a patient's mental health needs**.
 - Detecting would amount to a major intervention given that the lack of know-how results in a large proportion of the population suffering from mental health issues remaining oblivious to their mental illness.
 - More **accessible counselling facilities** would be a critical intervention in the early detection and treatment of mental illnesses.
 - The **availability of telephone-based helpline numbers and mental health apps** could help increase access to mental healthcare and address the huge gap between demand and supply when it comes to mental healthcare in India.

Conclusion:

- **Mental health issues are a major health challenge in the world today.**
- Access to health care and social services capable of providing treatment and social support is key to the fight against mental illness. The pandemic may be the best time to explore relevant policy options to universalize access to mental healthcare in India.

Additional information:

Linkage with recent events:

- The **withdrawal of world number 2 tennis player Naomi Osaka from the French Open** on account of extreme mental stress and anxiety through which the athlete was going through.
- This episode has raised the issue of mental well-being.

18. Building trust in governance

Social trust:

- Social trust is a **belief in the honesty, integrity and reliability of others** – a “faith in people.”

Significance of social trust:

- As Aristotle observed 2400 years ago, **human beings are by nature social creatures**. Social trust is the underlying foundation of relationships among individuals, groups, and other components of a society.
- Without trust in others’ actions, people may have to consider too many contingencies and uncertainties to take action, destroying the foundation of community and society. Without social trust, a country’s economy cannot perform well, because transaction costs – costs in undertaking economic transactions by economic entities – would be too high.
- Hence, social trust is a **key determinant of social and economic development as well as of human well-being**.

Low social trust in governance:

- Historically, **Indians have had low social trust and more so when it comes to trust in governance**.

Factors contributing to low social trust:

- The **past experiences of citizens** while availing government services where requests have not been responded to has added to a sense of apprehension when it comes to governance.
- **Corruption in the system** adds to the apprehension among the citizens.
- The **power imbalances** wherein the citizens feel that they do not have any recourse for their grievances.

Implications of low trust:

- The low social trust leads to **apathy, disengagement and a ‘nothing will happen’ mindset among the citizenry.**
- This while discouraging the citizens from availing their legitimate right to service from government agencies and **reducing citizen participation in governance** also serves to **deepen the sense of non-accountability among the government servants.**

Measures that can help increase trust:

- Given that trust is experiential, the social trust in governance is built as consumers get **consistent information and predictability and quality in the delivery of services**, over time, every time.
- The availability of a **mechanism to hold the service provider accountable** is fundamental to building trust.
- **Increased transparency** which allows citizens and civil society groups to view the performance data for their localities through open dashboards and **empowering citizens to provide a star rating (feedback)** upon completion of service can help build social trust in governance.
- The **use of e-technology** for the delivery of services which reduces the scope for corruption and helps increase transparency in the system is an important intervention to help increase social trust in governance.

Conclusion:

- The government service delivery mechanism should imbibe the above measures to increase social trust in governance. This over time will help ensure that the **trust deficit is reversed, and citizen participation increases.**

19. South Asia's healthcare burden

Background:

- Despite recording comparatively lower infection and mortalities in the first wave of the pandemic, **South Asia has been devastated from the second wave.**
- **India, the largest country in South Asia, has been the most affected.** The “super spreader” events, fragile health infrastructure, citizens not following health protocols, and logistical mismanagement have resulted in record infections and death rates during the second wave.
- **Pakistan, Bangladesh, Nepal and Sri Lanka also remain vulnerable** to more infections and deaths due to the pandemic.
 - Bhutan is the only exception so far in South Asia. Bhutan's success in tackling the pandemic stems from a well-funded and prepared public

health system with stringent measures, responsible citizenship, and an accountable government.

Details:

- The article discusses some of the **common lacunae in the health systems of the South Asian countries** of India, Pakistan and Bangladesh, which have contributed to worsening the impact of the second wave of the COVID-19 pandemic.

Concerns:

Inadequate public health infrastructure:

- As against the World Health Organization's (WHO) prescribed standard of 1 doctor for 1000 people, **India's public healthcare sector has been operating at 0.08 doctors per 1,000 people.**
- India has **only half a bed available for every 1,000 people**, which is inadequate even for normal scenarios. Bangladesh and Pakistan have a bed to patient ratio of 0.8 and 0.6, respectively, and a doctor availability of less than one for every 1,000 people.

Low state investment into health sector:

- **State investment in the health sector remains highly inadequate.** Major public sector investments in India, Pakistan, and Bangladesh have been **towards infrastructure and defence, with health taking a backseat.**
 - India spends a little over 1% of the Gross Domestic Product (GDP) on the health sector. While India has the world's third-largest military expenditure, its health budget is the fourth-lowest.
 - In Pakistan, while the defence budget was increased despite the pressure of the pandemic, the spending on health has remained stagnant.
 - The gross underfunding of the health sector over the years has led to a crumbling public healthcare system in Bangladesh.

High out of pocket expenditure:

- **The booming private medical sector at the cost of the public health sector** has resulted in very high out-of-pocket health expenditure.
- While **ideally, out-of-pocket expenditure should not surpass 15% to 20% of the total health expenditure**, it is 62.67%, 73.87% and 56.24%, for India, Bangladesh and Pakistan respectively.

Skewed distribution of healthcare facilities:

- Despite housing a large rural population, the existing health facilities largely cater to the urban population. The **rural areas have limited access to quality and affordable healthcare facilities.**

Recommendations:

- The South Asia countries must prioritize investments in healthcare systems and **step up investment in their public healthcare sectors.**
- The countries must also work towards **broadening equitable access to healthcare through universal health coverage schemes.**

Conclusion:

- Given the high chances of another pandemic wave, South Asian countries via a well-thought-out vision and backed by requisite political commitment need to direct special attention and resources towards strengthening the health systems. The reforms should **make the public healthcare sector sustainable and pro-poor.**

20. The promise and perils of digital justice delivery

Context:

- The e-Committee of the Supreme Court of India recently released its **draft vision document for Phase III of the e-Courts project.**

Background:

The e-Courts project:

- The e-Courts Project was conceptualized on the basis of the **“National Policy and Action Plan for Implementation of Information and Communication Technology (ICT) in the Indian Judiciary - 2005”** submitted by e-Committee, Supreme Court of India with a vision to transform the Indian Judiciary by ICT enablement of Courts.
 - E-committee is a body constituted by the Government of India in pursuance of a proposal received from the Hon’ble Chief Justice of India to constitute an e-Committee to assist him in formulating a national policy on computerization of Indian Judiciary and advise on technological communication and management related changes.

- The e-Courts Mission Mode Project, is a pan-India project, monitored and funded by the Department of Justice, Ministry of Law and Justice, Government of India for the District Courts across the country.
- The e-Courts project envisages:
 - To **develop, install & implement decision support systems in courts.**
 - To **automate the judicial processes** to the extent possible.
- Phases I and II of the e-Courts project had dealt with the digitisation of the judiciary, i.e., e-filing, tracking cases online, uploading judgments online, etc.

Potential benefits of digital justice delivery:

Increased transparency:

- Automation of judicial processes can help increase the transparency of the process by increasing the **accessibility of information to its stakeholders.**

Enhance judicial productivity:

- It will help enhance judicial productivity, both qualitatively & quantitatively by **streamlining judicial processes.**
 - Phase II of the e-Courts project saw the development of the National Service and Tracking of Electronic Processes, a software that enabled e-service of summons.

Efficient and time-bound delivery of justice:

- By enabling efficient & time-bound citizen-centric services delivery it can help **rectify the long delays and difficulties for ordinary litigants** and hence help ensure delivery of justice. It will help make the justice delivery system affordable, accessible, cost-effective, predictable and reliable.
 - Around 3.27 crore cases are pending before Indian courts, of which 85,000 have been pending for over 30 years.

Continued access to the judiciary:

- The digital justice delivery has helped ensure judicial accessibility despite the lockdowns induced by the COVID-19 pandemic. Notwithstanding some hiccups, the Supreme Court and High Courts have been able to function online despite physical courts being forced to shut down.
- The **digital functioning of the courts enabled access to lawyers and litigants despite the lockdowns in place.**

Details:

- Phase III of the e-Courts project continues with its commitment to the **digitization of court processes**, and plans to **upgrade the electronic infrastructure of the judiciary**.
- The vision document also envisages **large-scale data collection exercise** which could be used for future policymaking and help to make suitable interventions to address existing challenges in the system.
- The draft document proposes a **360-degree approach to data collection**, wherein a 360-degree profile of each person would be created by integrating all of their interactions with government agencies into a unified database.
- The draft vision document for Phase III **proposes an “ecosystem approach”** to justice delivery, under which it suggests a “seamless exchange of information” between various branches of the State, such as between the judiciary, the police and the prison systems through the **Interoperable Criminal Justice System (ICJS)**.

Concerns:

- While the objective of digitization of the judiciary is a welcome move, certain recommendations in the draft vision document for Phase III are a point of concern.

Will further exclusion and inequity:

- Given the fact that the first layer of data creation happens at local police stations, which have historically contributed to the **criminalization of entire communities by labelling such communities as “habitual offenders”**, the proposed Interoperable Criminal Justice System (ICJS) will likely exacerbate existing class and caste inequalities that characterise the police and prison system.

Threat of profiling and surveillance:

- Given that the data collected, shared and collated through the e-Courts project will be housed within the Home Ministry under the ICJS, henceforth **localised data will become more centralized. This increases the threat of profiling and surveillance.**
- The 360-degree approach envisaged in the draft document poses the threat of targeted surveillance.

Privacy concerns:

- The data collection combined with extensive data sharing and data storage is a cause for concern given its possible **implications on the Right to Privacy of the citizens.**

- The integration of data allows the creation of an integrated database on a person with a variety of information relating to that individual, some of which may be purely civil, commercial or personal in nature.
- The **lack of a data protection regime law in India** further raises concerns over possible infringement on the right to privacy.

Recommendations:

- The article proposes **abandoning the ecosystem approach**. The e-Committee must prevent the “seamless exchange” of data between the branches of the state that ought to remain separate.
- The article also proposes that the e-Courts must move towards **localisation of data**, instead of centralization given the potential threat that such centralization poses.
- Given the potential advantage of data in addressing challenges in the judicial system, instead of altogether abandoning data collection, rather there is the need to focus on a system that can provide **anonymous, aggregated, and statistical information about issues without identifying the individuals**. This could be made possible by encouraging uniformity and standardisation of entry fields.

Conclusion:

- Technology can indeed help revolutionise India’s ailing judicial system, however, it cannot be an end in itself and the **use of technology needs to be ensured within the constitutional framework of the fundamental rights of citizens**.
- Phase 3 of the e-Courts project must devise ways to harness technology for service delivery without increasing surveillance risks

21. Persecuted in Pakistan, ignored in India

Issue:

Hundreds of Pakistani Hindus having faced **persecution on the ground of their religious identity** in Pakistan have migrated to India in search of security and citizenship. But **ambiguous rules and regulations have left them stateless for years**.

Three waves of migration of Hindus to India:

- The president of the Seemant Lok Sangathan (an organisation working for the welfare of migrants) points out that there have been **three waves of migration of Hindus to India from Pakistan**.

1. The first was during and **after Partition**.
 2. **During the 1971 war**, about 90,000 persons migrated to India.
 3. The third wave started as a result of a **backlash against Hindus during the Ram temple movement and after the demolition of the Babri Masjid**.
- Migrants still continue to come to India.
 - Also, the **Taliban's capture of power in Afghanistan in 1996 led to a change in atmosphere in Pakistan**, with the **minority communities in the Balochistan and Sindh provinces increasingly being targeted**.

Issues:

- Since 2014, **most Hindu migrants have been entering India**, into western Rajasthan and northern Gujarat, **on a pilgrim visa**.
 - They leave their family members in Pakistan in the hope that they can travel later when they find employment in India. However, they are disappointed when they are left to fend for themselves.
- The migrants are **mostly Dalits** from the Meghwal, Koli, Bhil, Jatav, Kumawat and Mali communities.
 - **They are considered underprivileged on both sides of the international border**.
- The number of **Pakistani Hindu migrants** staying in 21 settlements **in the Jodhpur district** is estimated to be about **30,000**.
- They **live in inhumane conditions with no access to electricity, water, toilets and sanitation**.
- Due to the **red-tapism in the citizenship camps** organised by the Home Ministry, migrants from Pakistan have been wandering from one camp to another, but in vain.
- **Many have even failed to get a long-term visa** which would enable them to find a private job or take up self-employment.
- While they have failed to find any gainful employment, the pandemic-related lockdowns have only made matters worse.
- Besides, they are ostracised in India for being Pakistanis.
- While some migrants have **got citizenship after completing the mandatory 11 years of stay for eligibility under the Citizenship Act of 1955**, they struggle daily to get food, water, healthcare and education.
- The **children of these migrants are the worst affected**. Schools reluctantly give them admission and **do not provide them emotional support and counselling**.
- A new issue that the migrants are now facing is **inaccessibility to vaccines**.

Citizenship - Bone of contention:

- In May 2021, the Union Home Ministry issued a notification inviting non-Muslim migrants residing in 13 districts of five States to apply for Indian citizenship.
- It also empowered the Collectors of these districts to grant citizenship certificates.
- However, the notification is applicable to migrants belonging to the Hindu, Sikh, Buddhist, Jain, Parsi and Christian communities from Pakistan, Bangladesh and Afghanistan.
- The Home Ministry has made it clear that the latest notification is not related to the contentious Citizenship (Amendment) Act (CAA) of 2019.
 - The CAA will reduce the requirement of 11 years of aggregate stay in India to five years for citizenship, which would help fast-track the applications of migrants.
- Civil rights groups have called for taking measures to smoothen and hasten the process for grant of citizenship to migrants **irrespective of their religious identity**.

Rules and regulations:

- The Pakistani Hindu migrants are caught in a **vicious circle of poverty and vulnerability**. They face an **unresponsive government and uncertain legislation**.
- These migrants cannot expect to get the status of refugees because **India is not a signatory to the 1951 UN Convention Relating to the Status of Refugees, nor its 1967 Protocol**.
- All foreign nationals, including asylum-seekers, are governed by the provisions of the Foreigners Act, 1946; the Registration of Foreigners Act, 1939; the Passport (Entry into India) Act, 1920; and the Citizenship Act, 1955, as well as the rules and orders framed under these laws.
- The **Union government possesses the power to detain and deport foreigners and restrict their movements**.
- The Indian government **has no international obligation to enact legislation for refugees**.
- For accessing legal entitlements and services, Indian citizenship is the only viable option for migrants.
- Most of the **migrants are illiterate and unable to decipher the rules and regulations**, which makes them **vulnerable to deceit and exploitation by government officials**.
- After getting citizenship, obtaining documents such as ration cards and caste certificates is not an easy task. They find it difficult to avail the benefits of healthcare, education and employment schemes.

Way Forward – Improving the lives of migrants:

- **Pakistan High Commission should be persuaded to withdraw the increased fee** for renunciation of Pakistani citizenship (mandatory before getting their Indian citizenship).
- They should be **provided with easy facilities for the renewal of passports and identity cards.**
- United Nations High Commissioner for Refugees should be approached **for incorporating the minority migrants in its regular programmes for refugees.**
- The **gaps in livelihood development and rehabilitation status should be identified** at the State level.
- A **robust policy for rehabilitation needs to be introduced at the Central level** for migrant families.

22. Reviving the spirit of multilateralism

Context:

- The ongoing **47th edition of the “Group of seven” summit** in Carbis Bay, southwest England.

Background:

Group of Seven:

- The Group of Seven (G7) is an inter-governmental political forum **consisting of Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.**
- The member countries figure in the list of the world’s largest IMF-**advanced economies and wealthiest countries.** As of 2018, the G7 accounts for close to 60% of global net wealth.
- The G7 was **formed in 1975** in the aftermath of the 1973 Oil Crisis. The G7 became the G8 with Russia’s admission into the group in 1998. But it reverted to the G7 in 2014, following Russia’s annexation of Crimea.
- The G7 is not based on a treaty and has **no permanent secretariat or office.** The G7’s presidency rotates annually among the members.

Details:

- The following are the major takeaways from the second day of the summit.

“Build Back Better World” (B3W) project:

- The “Build Back Better World” (B3W) project envisages to collectively **mobilize hundreds of billions of infrastructure investment for low- and middle-income countries.**
- The B3W project aims to offer a “**values-driven, high-standard and transparent**” partnership.

Carbis Bay Declaration:

- In the light of the devastation caused by the COVID-19 pandemic, the ongoing summit seeks to address such future global health challenges.
- The ‘Carbis Bay Declaration’ is a landmark global health declaration **aimed at preventing future pandemics** under which G7 leaders have committed to use all their resources.
- The declaration based on the independent report titled ‘100 Days Mission to Respond to Future Pandemic Threats’ contains actionable recommendations on how governments and others can quickly respond to any future outbreaks.
- The G7 Carbis Bay declaration includes the following interventions:
 - Slashing the time taken to **develop and licence vaccines, treatments and diagnostics for any future disease to under 100 days**
 - Reinforcing **global surveillance networks** and genomic sequencing capacity
 - Support for **reforming and strengthening the World Health Organization (WHO)**
- Under the Carbis Bay Declaration, the UK, which holds the presidency for the G7 Leaders’ Summit 2021, will establish a new centre to develop vaccines to prevent zoonotic diseases spreading from animals to humans.
- The G7 nations are expected to collectively agree to provide a billion doses of Covid-19 vaccine in an effort to end the pandemic in 2022.

Tackling China:

- The second day of the summit saw leaders addressing the **issue of “strategic competition” with China.** The various initiatives announced during the summit can be viewed as moves to counter China and its moves.
 - The B3W project is aimed to **counter China’s Belt and Road infrastructure (BRI) initiative.** The emphasis on a transparent partnership stands in strong contrast to China’s BRI which has been widely criticized for pushing countries with unsustainable debt levels.
 - The G7 Carbis Bay declaration on reinforcing global surveillance networks to identify early threats from diseases appears as a **veiled reference to China’s failure to notify the world early regarding the COVID-19 pandemic.**

- The UK which holds the presidency for G7 Leaders' Summit 2021, has **invited India, along with Australia, South Korea and South Africa, as guest countries.** The presence of India, Australia and South Korea at the G7 summit is seen as a nod to the recognition of their discontent with the influence of China.

Strengths of the G7:

- The group is officially organized around shared **values of pluralism, representative government, and globalism.** It steadfastly promotes liberal democracy.
- Though it began as a forum for economic cooperation, over the years, the G7 has **taken up a host of issues ranging from economic growth to environmental issues and terrorism.**
- The G7 has been a formal, high-profile venue for **discussing and coordinating solutions to major global issues** in varied areas like trade, security, economics, and climate change. It has catalyzed or spearheaded several major global initiatives. The G7 agreement on a global minimum corporate tax being such an example.
- Given the significant economic prosperity they enjoy, the member countries **wield enormous power and international influence in global affairs.**

Challenges:

Internal differences:

- The transactional approach to international relations under the Trump administration of the U.S. had cast doubts over the future of the G7.
- The **Brexit issue** has cast a shadow over the ties between the U.S. and the U.K. The current U.S. administration has steadfastly opposed Brexit and has raised concerns over Britain's dispute with the EU over Northern Ireland.
- There continue to be some **differences over economic issues** between the member countries. Example- Taxation of the Big Tech.

Decline in economic dominance:

- From collectively producing around 70% of the world's GDP during the initial years, this number has come down to 40% over the years.

The rise of other groupings:

- The group has been criticized for its **outdated and narrow global representation**. The narrow global representation has also resulted in its ineffectualness to an extent.
- The larger G20 has become a more relevant multilateral body due to the inclusion of developing economies such as Brazil, China, India and South Africa.

Conclusion:

- The ongoing summit coming after a tumultuous period marked by transactional approach to international relations under the Trump administration of the U.S. is an indication of the new administration's intent to build closer coordination with traditional allies in the Global North and **renewed multilateralism**.
- Despite the existing challenges to the G7, the G7's ability to set the tone for cooperation on global issues has not diminished and this needs to be used to revive the emphasis on **multilateral co-ordination and co-operation in the spirit of globalization**.
- The G7 will have to take along other nations in the broader G20 to increase the effectiveness of its initiative.

23. Rare earth metals at the heart of China-U.S. rivalry

Context:

- Recently, the U.S. Senate passed the **U.S. Innovation and Competition Act**, aimed at countering China's technological ambitions.
 - Among many other interventions, the bill also **aimed at improving American competitiveness in the rare earth metals market**. The bill includes several provisions to help improve critical minerals supply chains.

Background:

Rare earth metals:

- Rare earth metals are a **group of 17 elements** – lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium, scandium, yttrium – that appear in low concentrations in the ground. They are lustrous silvery-white soft heavy metals.
- Although they are more abundant than their name implies, **they are difficult and costly to mine and process cleanly**.

Use of rare earth metals:

- Rare earths find application in a wide range of products including rechargeable batteries for electric and hybrid cars, advanced ceramics, computers, DVD players, wind turbines, catalysts in cars and oil refineries, monitors, televisions, lighting, lasers, fiber optics, superconductors, mobiles and glass polishing as well as **military jet engines, satellites and lasers**.
- Lanthanum is needed to manufacture night vision devices.
- These rare minerals are essential to the manufacture of electric vehicles, wind turbines and drones considered very important sectors in the coming future.
 - Rare earth minerals like neodymium, praseodymium and dysprosium, are crucial to the manufacture of magnets used in wind turbines and electric cars. Hence **the transition to green energy is dependent on the availability of these critical rare earth metals**.

China's dominance in rare earth metals:

- The rare earth metals are largely extracted and refined in China.
 - Most of the rare earth metal reserves are located within China. After China, the major rare earth countries based on reserve volume are Vietnam, Brazil, and Russia.
 - China hosts most of the world's processing capacity and in 2017, **China accounted for 81% of the world's rare earth production**.
- In 2019, the U.S. imported 80% of its rare earth minerals from China, while the EU gets 98% of its supply from China.

Details:

- **Rising tensions between the United States and China** have sparked concerns over China's dominant position as a supplier of rare earths.
- China's dominance in the critical rare earth metals, key to the future of manufacturing, is a cause of concern for the U.S., given that **China could as well use its dominance in the sector to cut off supplies to the west in case of a geopolitical friction**.
 - Example – Japan accused China of halting rare earth supplies for political reasons (in the aftermath of a diplomatic dispute between China and Japan in 2010), sparking recognition worldwide of the risks of dependence on one supplier.
- Recognizing the fact that the failure to expand its semiconductor production, or reroute rare earths supply chains, could leave the U.S. at a strategic disadvantage in the years ahead, the act makes several recommendations in this regard.

- The U.S. aims to **boost domestic production and processing of rare earths and lithium**, another key mineral component, while working with allies to **increase sustainable global supply and reduce reliance on competitors like China**.
- **Recycling** has also emerged as a potential source for rare earth minerals. Scaling up recycling could help meet a substantial proportion of the demand for rare earth metals.

Additional information:

- The **Mountain Pass mine** is located in California, U.S.
 - The Mountain Pass Mine is an open-pit mine of rare-earth elements. In 2020 the mine supplied 15.8% of the world's rare-earth production.

24. A policy difficult to defend

Context:

- India's new vaccination policy.

Liberalized vaccination policy:

- Under the new vaccination policy, States will no longer have to bear the responsibility or expenses of procuring vaccines; the **Centre will procure vaccines on behalf of the States as the single purchaser and provide them to states free of cost**.
- Of the total domestic production of vaccines in India, 75% has been reserved for exclusive government purchase while **25% of the total vaccines have been opened up for private sector procurement**.

Concerns:

- The article expresses concerns over the provision to reserve 25% of the vaccines for the private sector based on the following arguments.

Demand supply mismatch:

- The private sector's share of total manufactured vaccines is not proportional with the private sector's share of total vaccination centres, which are much lesser than the number of government vaccination centres.
- The demand for free vaccines at the government centres continues to be high and the proposed share for the private sector might result in a demand-supply mismatch between government and private centres.

Doubts over ability to pay:

- The allocation of a 25% share for private vaccination entails an implicit assumption that 25% of the population is willing and able to pay for the vaccine. This goes against available evidence which notes that the **affluent form only a small fraction of the uppermost 25% of India's population based on income.**

Depress vaccine demand generation:

- The move to divert 25% of the vaccines through the private health sector could **disincentivize vaccine uptake and depress vaccine demand generation.**

Crowding out effect:

- With the need for online registration for free vaccination, the affluent class with greater digital awareness is more likely to block slots for free vaccination. This can lead to a '**crowding out**' effect for the poorer sections.

Policy incoherence:

- A large chunk of the proposed self-payers for vaccination are likely to be younger, productive individuals, who are at lesser risk of severe disease and mortality than the elderly.
- Hence the new policy fails to **consider the age structure into vaccination policy and its possible implications.**

Improbability of achieving herd immunity:

- Though some may argue that the new vaccination policy is driven by herd immunity considerations, which estimate that **vaccination of 60% to 80% of the population can help limit the spread of the infection**, the resultant disparities along geographic and socioeconomic lines which could result from the new policy would not be consistent with the notion of herd immunity.
- It is critical to note that vaccinating the poorer and marginalised sections, even if it is free of charge, is much more challenging than vaccinating the easily accessible better-off sections.

Inequity:

- An inadvertent consequence of the new policy is that it would result in **higher out-of-pocket expenditure.** This would amount to deepening the already existing inequities in India.

Way forward:

Increase share of government's uptake of vaccines:

- Given that **vaccine as a commodity has much higher social benefits than private benefit**, there is the urgent need to increase the government's share of total vaccines.

Engagement with private sector:

- **The private sector is marked by greater reach, innovative processes, and efficiency.** These strengths of the private sector need to be sufficiently exploited as part of a **strategic purchasing framework** which could also reduce the cost of vaccines for the private sector and thus help vaccine uptake.

25. Govt. report flags 'lapses' in Nagaland bat study

Context:

The government has concluded that there had been **concerning lapses in the conduct and protocols followed for the Nagaland bat study.**

Background:

- It was a probe into a filovirus study of bats in Nagaland by the Bengaluru-based National Centre for Biological Sciences (NCBS) and the Tata Institute of Fundamental Research (TIFR).

Issue:

- Earlier, an enquiry was initiated into **whether adequate permissions had been sought for the study** that had **listed two scientists at the Wuhan Institute of Virology as co-authors**, and was **partially funded by the U.S. Department of Defense** through its Defence Threat Reduction Agency (DTRA).
- Besides, there is an **inter-department disagreement over where the bat samples should be stored.**
- Both the **foreign funding of the study**, which cost an estimated ₹1.9 crore, as well as **concerns over the storage of the bat samples** collected have come up for scrutiny.
- According to the Health Ministry report, the **study didn't have the requisite approval of ICMR.** And the **facility at NCBS was not equipped in terms of biosafety and biosecurity to undertake such testing.**

- The Health Ministry wants the samples of nucleic acid extract stored at the Bio Safety Level-4 (BSL-4) standard facility at the National Institute of Virology laboratory in Pune, rather than NCBS's Bengaluru facilities, which are rated BSL-3 at present.

The findings of the report are significant in the backdrop of the debate over the origins of COVID-19 worldwide, and the handling of bat samples at the Wuhan Institute laboratory.

Note:

However, scientific experts and officials have made it clear that the **Nagaland bat study on filoviruses (Ebola and Marburg) was in no way related to the coronavirus (SARS) studies at Wuhan.**

26. Needed: full disclosure on electoral bonds

Background:

PIL against Electoral bonds:

- **A Public Interest Litigation (PIL) was filed in the Supreme Court by the Association of Democratic Reforms (ADR), to stay the sale of a new set of electoral bonds before the recently held Assembly elections. The ADR PIL had challenged electoral bonds as being unconstitutional.**
- **The Supreme Court while downplaying the concerns of the corrupting influence of anonymous corporate and foreign money had refused to stay the sale of electoral bonds.**
- Instead, the Supreme Court expressing doubts over the absolute anonymity of the electoral bonds had reasoned that the available information in the public domain could be used to ascertain political donations.

Concerns with the SC's observations:

- The article argues against the above Supreme Court's suggestion based on the following facts.
 - Notably, the annual reports of all the potential donor companies and firms are **not readily accessible on the website of the Ministry of Corporate Affairs.**
 - Also private firms, unlike companies, have **no regulatory mandate to submit their annual reports** except for filing their annual tax returns,

since their functioning is regulated by Acts other than the Companies Act of 2013.

- Many registered companies while filing their annual financial statements, **do not disclose political donations.**
- The company statements might have a total aggregate amount of all donations, including philanthropic ones. **Nowhere are donations to specific political parties required to be mentioned.**
 - The Finance Bill of 2017 amended Section 182 of the Companies Act of 2013 to remove the requirement for declaring disaggregated donations to political parties.
- That political **parties do not need to disclose their electoral bond donors** makes it extremely difficult to track political donations.
- The political parties are only required to **submit annual audit reports with a total of all donations received via electoral bonds.** This makes it very difficult to match a donation of a company to that received by a political party as only aggregate amounts are available.
- Even these annual audit reports are **submitted with great delays.**
- No ordinary person has the resources/time to navigate through documents available on government websites or analyze the income tax returns of companies to ascertain the political donations as suggested by the Supreme Court.
- Hence, the “match the following” suggestion of the Supreme Court to ascertain political donations is both impractical and incorrect.

Recommendations:

- Keeping in the **spirit of the Right to Information (RTI) Act of 2005** which mandates easier access to information held by public authorities, companies and political parties should **voluntarily disclose the identity of recipients and donors.**
- Alternatively, the **Supreme Court or the legislature could push for full and real-time disclosure**, to truly realize the benefit of transparency and accountability as envisaged through the electoral bond scheme.

Concerns over Electoral Bonds:

A new form of anonymity:

- The introduction of electoral bonds has resulted in the anonymity of thousands of crores of political donations and thus has greatly **reduced public and legislative oversight over such donations.**

Skewed framework:

- The current electoral bond framework makes it **possible for the ruling party via the State Bank of India (SBI) to have a full account of all donations** being made via electoral bonds, to itself and to Opposition parties.
- However the parliament, the Election Commission and the Opposition parties do not have this information, nor do the public. This will invariably lead to a situation where the potential donors will be pushed to donate towards the ruling party.

Against the spirit of electoral process:

- The electoral bonds give **political power to companies, wealthy individual donors, and foreign entities**, thus diluting the principle of one voter – one vote – one value.
- Every vote is not equally valuable if companies **can influence policies** through hidden donations.

Other concerns associated with political funding:

Foreign funding:

- In 2016 and 2018, amendments were made to the Foreign Contribution (Regulation) Act (FCRA) through the annual Finance Bills, with retrospective effect. These amendments **enabled Indian subsidiaries of foreign companies to make donations to political parties.**
- These amendments in conjunction with electoral bonds allow anonymous financing by foreign entities **opening Indian elections to the influence of foreign corporate and political donors.**

Changes in corporate funding framework:

- Earlier, only profit-making domestic companies could contribute to political parties. However, post some amendments now **even loss-making companies can contribute to political parties.**
- This could lead to an eventuality where Indian political parties could be fully funded by foreign entity/domestic pressure groups through a **shell company.**

27. A place for disruptive technology in India's health sector

Context:

- In the light of the **health crisis brought out by the COVID-19 pandemic**, the article discusses the **relevance of disruptive technology and its applications in the medical sector.**

Blockchain technology:

- The term 'Blockchain' denotes a shared immutable record of a chain of transactions, each comprising one block, with the blocks being held together by cryptographic keys. These keys or signatures are stored in shared ledgers, joined by a mesh of nodes, or processes that connect them. Each node has a copy of the whole chain, being constantly synchronized and kept up to date.
- The advantages of blockchain technology include its **tamper-resistant nature, the decentralized nature of the digital ledgers, and the impossibility of changing a published transaction** subsequently within the user community that shares the ledger. This technology is also called **digital ledger technology (DLT)**.

Medical blockchain:

- The health blockchain would contain a complete **indexed history of all medical data**, including formal medical records and health data from mobile applications and wearable sensors that can be stored in a secure network and authenticated.

Application in healthcare:

- Blockchains in healthcare can be envisaged in the following areas:

Securing patient data:

- Keeping important medical data safe and secure is the most popular blockchain healthcare application at the moment, given that data breach of patient records has been a major challenge.
- Blockchain technology can help conceal the identity of any individual with complex and secure codes that **can protect the sensitivity of medical data**.

Streamline medical care:

- The time-consuming process of obtaining access to a patient's medical records exhausts staff resources and delays patient care. Blockchain-based medical records offer a cure for these ills.
- **The decentralized nature of the technology creates one ecosystem of patient data that can be quickly and efficiently referenced** by doctors, hospitals, pharmacists and anyone else involved in treatment. In this way, blockchain can lead to faster diagnoses and personalized care plans.
- Thus blockchain medical records can help streamline care.

Medical supply chain management and drug traceability and safety:

- Blockchain has immense applications in **pharmaceutical supply chain management**, and it can virtually guarantee full transparency in the shipping process right from the manufacturing centre up until it reaches the consumer.

Complementing genomics:

- Blockchain is a perfect complement for the growing genomics field as it **can safely house billions of genetic data points**. Thus medical blockchain offers potential for point-of-care genomics management and the innumerable benefits that it offers to medical treatment.

Big data analytics:

- Big data analytics examines large amounts of data to **uncover hidden patterns, correlations and other insights**. Analysis of big data allows analysts, researchers and business users to make **better and faster decisions** using data that was previously unusable.

Big data in the medical sector:

- In healthcare, big data uses specific statistics from a population or an individual to research new advancements, reduce costs, and even cure or prevent the onset of diseases. In recent years, **healthcare data collection has moved into the digital realm, making analysis faster and more accurate**.

Application in healthcare:

- Applications of big data analytics can help improve the patient-based service, through **early disease detection**, generate new insights into disease mechanisms, monitor the quality of the medical and healthcare institutions as well as provide **optimized hospital healthcare treatment regimes**.

Artificial intelligence:

- Artificial intelligence (AI) is the **simulation of human intelligence processes by machines**, especially computer systems. Specific applications of AI include expert systems, natural language processing (NLP), speech recognition and machine vision.

AI in healthcare:

- Artificial intelligence in healthcare refers to the use of complex algorithms designed to perform certain tasks in an automated fashion. When researchers, doctors and scientists inject data into computers, the newly built algorithms

can review, interpret and even suggest solutions to complex medical problems.

Application in healthcare:

- AI offers a number of advantages over traditional analytics and clinical decision-making techniques. Learning algorithms can become more precise and accurate as they interact with training data, allowing humans to gain unprecedented **insights into diagnostics, care processes, treatment variability, and patient outcomes.**
- AI can help deploy **more precise, efficient, and impactful interventions** at exactly the right moment in a patient's care.

Developing the next generation of radiology tools:

- As per some experts, artificial intelligence will enable the next generation of radiology tools that are accurate and detailed enough to **replace the need for tissue samples in some cases.**

Expanding access to care in underserved regions:

- Shortages of trained healthcare providers, including ultrasound technicians and radiologists can significantly limit access to life-saving care in developing nations around the world.
- Artificial intelligence could help mitigate the impacts of this severe deficit of qualified clinical staff by **taking over some of the diagnostic duties typically allocated to humans.**
- For example, AI imaging tools can screen chest x-rays for signs of tuberculosis, often achieving a level of accuracy comparable to humans. This capability could be deployed through an app available to providers in low-resource areas, reducing the need for a trained diagnostic radiologist on site.

Creating more precise analytics:

- Artificial intelligence can allow for **more detailed and precise analysis of tests and scans** that may escape the human eye.

Monitoring health:

- There has been increased access to devices with sensors that can collect valuable data about their health. Example- Smartphones with step trackers; wearables that can track heartbeat. This has helped generate large quantities of health-related data.

- Collecting and analyzing this data – and supplementing it with patient-provided information through apps and other home monitoring devices – can **offer a unique perspective into individual and population health**. Artificial intelligence will play a significant role in extracting actionable insights from this large and varied treasure trove of data.
- **AI can provide earlier warnings for conditions like seizures or sepsis.**

Revolutionize clinical decision making:

- Artificial intelligence can help power predictive analytics and clinical decision support tools that can help provide clues to problems long before they might otherwise be identified using traditional approaches.
 - **Immunotherapy** is one of the most promising avenues for treating cancer. By using the body's own immune system to attack malignancies, patients may be able to beat stubborn tumours. However, only a small number of patients respond to current immunotherapy options, and oncologists still do not have a precise and reliable method for identifying which patients will benefit from this option. Machine learning algorithms and their ability to synthesize highly complex datasets may be able to illuminate new options for targeting therapies to an individual's unique genetic makeup.

Internet of Things:

- The Internet of things describes the **network of physical objects** that are embedded with sensors, software, and other technologies for the purpose of **connecting and exchanging data with other devices and systems over the Internet**.
- **The Internet of Medical Things, or IoMT** (which is defined as a connected infrastructure of medical devices, software applications, and health systems and services) is shaping healthcare applications.
- There are hospitals, in China, that use 5G-powered temperature measurement devices at the entrance to flag patients who have fever/fever-like symptoms. Other robots measure heart rates and blood oxygen levels through smart bracelets and rings that patients wear.

Autonomous systems:

- An autonomous robot is a robot that performs behaviours or tasks with a high degree of autonomy. Autonomous robotics is usually considered to be a subfield of artificial intelligence, robotics, and information engineering.

Application in healthcare:

- There have been numerous reports of field hospitals **using robots to care for COVID-19 affected patients and even sanitize wards**. Autonomous systems could potentially help reduce the chances of hospital staff contracting infectious diseases from patients.
 - The Sawai Man Singh government hospital in Jaipur has held trials with a humanoid robot to deliver medicines and food to COVID-19 patients.
- **Medical autonomous systems can help improve health delivery** to a great extent. These systems can also help provide medical care delivery in dispersed and complex environments wherein there is a shortage of skilled manpower.
 - Autonomous systems in the medical sector could include autonomous critical care system, autonomous intubation, autonomous cricothyrotomy and other autonomous interventional procedures.

Cloud computing:

- Cloud computing is the delivery of computing services – including servers, storage, databases, networking, software, analytics, and intelligence – over the Internet to offer faster innovation, flexible resources, and economies of scale.

Application in healthcare:

- **Cloud computing could facilitate collaboration and data exchanges** between doctors, departments, and even institutions and medical providers to enable the best treatment.

Quantum computing:

- Quantum computing is the exploitation of collective properties of quantum states, such as superposition and entanglement, to perform computation.
- **Quantum-enhanced machine learning algorithms** are particularly relevant to the medical sector.

Application in healthcare:

- In the healthcare industry, quantum computing could help **accelerate diagnoses, and personalize medicine**.
- In genomic medicine, quantum computers may lead to **quick sequencing of DNA**, opening up the possibility of personalized medicine.
- It can help **speed up drug design and development**.

- In health care data collection, quantum mechanics and the related computer power may assist on several levels, including with **data storage, data transmission, and data security**.

Challenges in the adoption of disruptive technologies:

- The large scale adoption of these technologies should consider the **ethical appropriateness of digital technologies** and acknowledge the **digital divide in society**.
- Other challenges include the non-standardisation of health data, organisational silos, **data security and data privacy concerns**, and also the **high upfront costs** involved in the adoption of these technologies.

Recommendations:

- The adoption of the above technologies should be complemented by a **robust strategy integrating human, financial, organisational and technological resources**.
- The adoption of disruptive technologies should be complemented by **drawing upon local knowledge**. Community nurses, doctors, and health workers in developing countries do act as frontline sentinels and can provide valuable information at scale and pace. Thus the local/traditional knowledge and experiences need to be used with modern technology.

Conclusion:

- The disruptive technologies discussed above can play an important role in improving the health sector in general and improve the welfare of societies.
- The application of the disruptive technologies discussed above in the medical sector can **help realize the ideal of universal health coverage (UHC)**.

28. In India, looking beyond the binary to a spectrum

The article talks about the need to grant marriage rights to same-sex couples in India, at the earliest.

Civil Rights for LGBTQIA+ community:

- The **LGBTQIA+ community** is a community of Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual and other identities that make up a **diverse group of individuals with varying sexual orientations and gender identities**.
- The last two decades have witnessed **tremendous progress in establishing civil rights** for the LGBTQIA+ community.

International jurisprudence:

Globally, the recognition of the unequal laws discriminating against the LGBTQIA+ community has acted as a **trigger to reform and modernise legal architecture to become more inclusive and equal.**

- As a result of a verdict by the Constitutional Court of **South Africa**, the **Civil Union Act, 2006 was enacted**, enabling the voluntary union of two persons above 18 years of age, by way of marriage.
- In **Australia**, the **Same-Sex Relationships (Equal Treatment in Commonwealth Laws - General Law Reform) Act 2008** was enacted to provide equal entitlements for same-sex couples in matters of, inter alia, social security, employment and taxation.
- In **England and Wales**, the **Marriage (Same Sex Couples) Act 2013** enabled same-sex couples to marry in civil ceremonies or with religious rites.
- In 2015, the **Supreme Court of the United States decided that the fundamental right to marry is guaranteed to same-sex couples.** It held the denial of marriage rights to same-sex couples to be a grave and continuing harm, serving to disrespect and subordinate gays and lesbians.

Courts and civil rights:

- In India, **marriages are solemnised under personal laws** such as the Hindu Marriage Act, 1955, Indian Christian Marriage Act, 1872, Muslim Personal Law (Shariat) Application Act, 1937.
- **At present, same-sex and queer marriages are not clearly recognised in India.** However, we are not deprived of judicial guidance.
- **Arunkumar and Sreeja vs The Inspector General of Registration and Ors.**
 - In this case, the Madurai Bench of the Madras High Court employed the interpretation that the **term 'bride' under the Hindu Marriage Act, 1955 includes transwomen and intersex persons identifying as women.**
 - Therefore, a **marriage solemnised between a male and a transwoman**, both professing the Hindu religion, is **deemed to be a valid marriage under the Act.**
 - It expands the scope of a term used in the Hindu Marriage Act, 1955 in a progressive manner and sets the stage for re-imagining the marriage rights of the LGBTQIA+ community.
- **Shafin Jahan vs Asokan K.M. and Others (Hadiya case)**
- In this case, the Supreme Court said that the **right to choose and marry a partner was considered to be a constitutionally guaranteed freedom.**

- SC held that the “intimacies of marriage lie within a core zone of privacy, which is inviolable” and “**society has no role to play in determining our choice of partners**”.
- **From the logical interpretation of these judgements**, it is apparent that any legal or statutory bar to same-sex and queer marriages must necessarily be held to be unconstitutional and specifically violative of Articles 14, 15 and 21 of the Constitution of India.

Expanding the scope of marriage:

- The domain of marriages cannot be immune to reform and review.
- **Reform of the Hindu Marriage Act, 1955 to bring self-respect marriages** under its very umbrella, is seen as a strong move towards **breaking caste-based practices within the institution of marriage**.
 - Self-respect marriages were legalised in Tamil Nadu (later, in Puducherry) through amendments to the Hindu Marriage Act, 1955.
 - Self-respect marriages have **done away with priests and religious symbols such as fire or saptapadi**.
 - Solemnisation of such marriages requires only an exchange of rings or garlands or tying of the mangalsutra.
- Similarly, **understanding the needs of the LGBTQIA+ community, the law must expand the institution of marriage to include all gender and sexual identities**.
- At least 29 countries in the world have legalised same-sex marriage.
- It is time for India to review its existing legal architecture in order to legalise marriages irrespective of gender identity and sexual orientation.

29. Cold peace

Context:

US President Joe Biden met Russian President Vladimir Putin in Geneva.

Details:

- The world leaders met for the first time in a decade.
 - They last met when the Russian leader was prime minister and Biden was serving as vice president, in 2011.
- **Relations between the two countries have hit the lowest point** in recent years since the end of the Cold War.
 - The U.S. has accused Russia of **interfering in its elections and launching cyberattacks** and criticised its **stifling of internal dissent**.
 - Russia has slammed **America’s interventionist foreign policy**.

History of the U.S.-Russia ties:

- There are **structural issues in the U.S.-Russia ties**.
- When Russia ended its post-Soviet strategic retreat and adopted a more assertive foreign policy under Mr. Putin (partly in response to NATO expansion into eastern Europe) **the West saw it as a threat to its primacy**.
- The **2008 Georgia war** severely affected the relations between democratic Russia and the West.
- In 2014, the annexation of Crimea renewed tensions.
 - Russia was thrown out of the G8, and western sanctions followed.
- Ties hit rock bottom with allegations that **Russian intelligence units carried out cyberattacks and ran an online campaign to get Donald Trump elected President** in the 2016 U.S. election.
- Russia, which had amassed troops on the Ukraine border, sees NATO's expansion into its border region as a threat.

Significance of the meeting:

- All these geopolitical and bilateral issues cannot be resolved in one summit. They can take **measures to prevent relations from worsening**.
- The Geneva summit has **set a pragmatic tone for engagement between the two competing powers**.
- The summit demonstrated a willingness to strengthen engagement and reduce tensions.
- Despite the differences, the **leaders held talks on all critical issues, bringing diplomacy to the centre stage**.
- They have decided to return their Ambassadors to the Embassies.
- They **announced a strategic stability dialogue to discuss terms of arms control measures**.

Way Forward:

- Both countries should be ready to **address their critical concerns**.
- They **must agree to a cold peace**, which would help in **addressing other geopolitical problems such as Syria**.
- **Russia should understand the importance of cooperating with the West**. Permanent hostility with other powers cannot be of much help to Russia.
- The U.S. should be **less pessimistic about Russia's foreign policy goals**. Russia, despite its weakened economic status, remains a great power.

Conclusion:

The message from Geneva is that the leaders wanted to establish rules of engagement so that the countries can **better address their differences and seek**

common ground on issues of mutual interest. With some predictability in ties with Russia, Mr. Biden can strengthen his China-focused foreign policy. And with a less hostile America, Mr. Putin can retain Russian influence in its backyard.

30. Fair assessment

The article talks about **student evaluations amidst the ongoing pandemic.**

Issue:

- **Student evaluation has become a challenge in all countries**, in the current pandemic situation.
- Many have **opted for a hybrid system of school-level internal assessments** combined with any examinations that may have been held.
- As the **course of the pandemic remains uncertain**, developing a continuous assessment system in schools for 2021-22 and beyond has become a necessity.

Context:

The Central Board of Secondary Education (CBSE) has announced the **marks tabulation framework for Class 12 students.**

Class 12 Evaluation Framework:

- The framework was evolved by CBSE to **fulfil a Supreme Court mandate.**
- It encompasses **three assessment years starting with Class 10.**
- It **distributes score weightage** across the **Class 10 public examination**, the **Class 11 annual test**, and the **Class 12 school tests** in a **30:30:40 ratio** for theory, and actual score for internal assessment and practicals.
 - This aims to **level out any irregular phase in a student's performance.**
- The marks considered from Class 10 will be the **average of the best three subjects among five.**
- A provision has been made to take a Class 12 public examination at a later date to attain a higher score when the pandemic has subsided.
- The Council for the Indian School Certificate Examinations (CISCE) has also developed a similar system.

Challenges:

- There are some challenges to uniformly implementing the CBSE plan.
- Its success is dependent on the **approach of school result committees responsible for the inclusion of Class 12 marks.**

- Uneven access to devices and online connectivity, with an impact on scores or even resulting in non-appearance, must be resolved by the result committees.
- There is then the issue of fraud.
 - In the U.K., reports indicate that **influential parents** exerted pressure on schools to give their wards **an unfair hike in grades in a similar mixed evaluation system**.

Way Forward:

- For fairness, CBSE mandates the **participation of external members on the result committees**, but it will take **utmost transparency to dispel students' apprehensions**.
- A dependable dispute resolution process must be established.
- The CBSE has taken the lead on this, and State Boards must follow a similar pattern for student evaluations without further delay.

31. 'Delta plus' and an emerging public health threat

Context:

- Concerns around the world and in India about **'Delta plus' variant of the SARS- CoV-2**

Background:

Delta plus variant:

- Formally known as **1 or B.1.617.2.1**, the Delta plus is an emerging form of the Delta variant (B.1.617.2).
- It has an **additional mutation called K417N**, which has previously been identified in the Beta variant and the Gamma variant.
 - This **mutation in the virus's spike protein** facilitates entry into human host cells.
 - The spike protein, an important component of the coronavirus, stimulates the virus's entrance into human cells and causes infection.
- It is **currently a "variant of interest"**, and hasn't been classified as a "variant of concern" yet in the World Health Organization's list.
- Research is on to understand its transmissibility, virulence.

Concerns:

High number of mutations:

- The **Delta variant has a number of mutations** that have allowed it to **dominate in several countries**, thus posing new challenges to the management of the pandemic.

High infectiveness:

- The K417N mutation found in the Beta variant and the Gamma variant has been **characterised as being highly infectious** and thus there are the **concerns of a new wave** associated with this variant.
 - In the light of a recent spike in positivity rate in some districts of Maharashtra and the increase in the delta plus variants recorded from these districts experts have warned that Delta plus variant might be the reason behind a third wave of the COVID-19 pandemic.

Impact of the vaccines on the new variant:

- Given the fact that the delta plus variant has significant differences compared to the strain that has been used by pharma companies to design vaccines, there are **doubts being expressed on whether the existing vaccines would be effective against the delta plus variant**.
- Studies to determine the potency of Covishield and Covaxin against the Delta variant have indicated that while antibodies continued to be produced against the variant, they were **fewer antibodies produced** than those produced against the strain used by companies to prepare their vaccines.

Render monoclonal antibody treatment ineffective:

- A major concern with the AY.1 is the presence of the K417N mutation. Previous studies have associated the mutation **with resistance to the newly developed monoclonal antibody treatment drug, Casirivimab and Imdevimab**.
- The mutation presumably allows the new variant to **“escape” antibodies** in the monoclonal antibody treatment regimes.

32. A Cold War relic that's seeking a new purpose

Context:

- The **2021 Brussels summit of the North Atlantic Treaty Organization (NATO)**.
 - A NATO summit is the gathering of the leaders of NATO's 30 member countries.

Background:

- The North Atlantic Treaty Organization is an **intergovernmental political and military alliance between 30 European and North American countries**.
 - NATO happens to be the world's largest military alliance.
- It is based on the **Washington Treaty or North Atlantic Treaty** which was signed in 1949 by 12 founding members.
 - NATO's essential and enduring purpose is to **safeguard the freedom and security of all its members by political and military means**.
 - **Collective defence** is the major aspect of the Treaty and is enshrined in Article 5, whereby the member states agree to mutual defence in response to an attack by any external party.
 - The collective defence principle states that "an attack against one ally is considered as an attack against all allies".
- **The Soviet Union's imposition of the Berlin blockade of 1948-49** and the support to the coup in Czechoslovakia in 1948 galvanized the war-ravaged European nations to come together under an American security blanket as a **counter to the Soviet Union's communist expansion in the region**. The formation of NATO, and its Soviet counterpart, the **Warsaw Pact, in 1955**, marked the beginning of the **Cold War era**.
- Originally formed by 12 Allied powers to counter the massive Soviet armies stationed in Eastern and Central Europe after the Second World War, the membership and mandate of the organization has increased over the years. **Starting with 12 founding countries, NATO currently has 30 members**.
- **NATO's Headquarters is located in Brussels, Belgium**.

Details:

- Major topics under discussion included NATO's role in the **changing geostrategic environment** and concrete measures to adapt the Alliance, as part of the **NATO 2030 agenda**.
- At the NATO Summit, the NATO Leaders took decisions on a wide range of topics to address the current and future security challenges. This included **Russia's pattern of aggressive behaviour, terrorism, cyberattacks and disruptive technologies, the rise of China, and the security implications of climate change**.

Concerns:

Source of concern for US and Russia bilateral relations and its implications:

- Tensions with Russia have been an inevitable outcome of **NATO's bid to expand eastward** into what Russia considers its sphere of influence.
 - NATO's membership today stands at 30, having added 14 members between 1999 and 2020.

- The move to bring countries such as Ukraine, Georgia and Moldova under NATO has led to a **confrontation with Russia**.
- Russia in a move which it claims sought to protect its interests, **annexed Crimea and has stationed its troops in Georgia and Moldova**. This has increased concerns over escalation of tensions in the region further.

Potential source of conflict between the US and China:

- In the latest communiqué issued following the recent summit, **NATO for the first time, explicitly described China as a security risk**. The communiqué notes China's stated ambitions and assertive behaviour as presenting systemic challenges to the rules-based international order and to areas relevant to NATO alliance's security.
- **The U.S. is trying to push NATO to take a stronger position towards China** in line with the U.S.'s growing conviction of China being a threat to its global supremacy and need for it to be contained.
- China has reacted strongly against this observation and has warned against artificially creating confrontations.
- Academicians have pointed that unlike the Soviet Union, China offers no alternative vision of society that should make Western capitalism insecure and view the U.S. led policy as nothing but **regressive policy based on American exceptionalism**. This could only lead to **increased confrontation**.
- **The paradigm shift of NATO's mandate from collective defence**, which implied a known adversary, **to collective security**, which is open-ended, and might require action against any number of threats, including unknown ones and non-state actors does not augur well for global peace and security and could render the NATO liable to misuse for vested interests.

Differences between the member nations:

- The continued persistence of NATO could be the fact that it has been a mutually beneficial arrangement for the members. The NATO alliance offers security to European member countries, while for the U.S., it has been an vehicle for power-projection around the world
 - The European members have been able to enjoy absolute security at a cheap price in exchange for a marginal loss in autonomy.
 - For the U.S., NATO has been a vehicle for power-projection around the world including in places such as Iraq, Afghanistan and Libya. The US views NATO as a tool to ensure the primacy of American interests across the globe. It has been able to get its NATO allies to be part of the US's wars in Afghanistan, Iraq by getting them to send troops and invest resources.
- Recent years have witnessed some **differences between the member nations**.

- **The sharing of the burden of financial resources** between the member nations has been an area of friction between the U.S. and the European states as the US bears nearly 70% of NATO's bills. Some members do not send troops to conflict outside Europe and most contribute less than their share of financial resources
- There has been growing **differences between the increasingly assertive European member nations and the U.S.** with European nations being wary of being dragged into confrontations that may necessarily not serve Europe's interests.
 - For example, with respect to the recent NATO communiqué, both **France and Germany have sought to distance themselves from NATO's official position on China.** NATO's European member states have sought to underplay the security threat posed by China in the North Atlantic region and view China as only an economic rival and adversary.

33. The comrades and their divergent perspectives

Context:

- The article discusses the **increasingly divergent perspectives of India and Russia in global geopolitics** and analyzes its potential impact on bilateral relations.

Russia's perspectives:

On India-China standoff:

- Russian President through his recent statement on the India-China border standoff and ongoing de-escalation talks had emphasized the need to **debar any "extra-regional power" to interfere in the process.**
- The foreign policy experts point out this as an indication of **Russia's indifference towards India's legitimate concerns** and the downplaying of China's coercive military pressure against India.

On Quad and the Indo-Pacific strategy:

- Russia through its criticism of the Quad and the Indo-pacific strategy has been reinforcing China's claim that the Quadrilateral Security Dialogue or Quad is aimed at containing Beijing's influence in the Indo-Pacific region.
- **Russia has rejected the Indo-Pacific construct in favour of the Asia-Pacific one** on the grounds that the Indo-Pacific construct is primarily an American initiative designed to contain both China and Russia.

India's deepening relationship with the West:

- Russia views the India-U.S. rapprochement as part of **U.S. attempts to expand its zone of influence.**

India's stand:

On standoff with China:

- India claims the Chinese incursion and break from the status quo as being factors for the current standoff and **terms China as the aggressor.**
- China's border moves seem to be part of its larger **effort to undermine India's global position** and to reduce India to a state of isolation and impotence in global affairs.
- Given **China's increasingly assertive behaviour**, which goes against all the conventional rules of international politics, India seems to be attempting to rally support for itself against Chinese hegemony.

On Quad and Indo-Pacific strategy:

- India's support for the Indo-Pacific construct is an indication of **India's attempt to re-imagine a new geostrategic maritime role for itself** beyond the confines of the Malacca Strait and the Gulf of Aden.
- India has repeatedly asserted that no country can have a veto on India's participation in the Quad and it will be led by its **national interest objectives.**

On strategic ties with the U.S. led west:

- The bitterness and mistrust between the Union of Soviet Socialist Republics (USSR) and China during the Cold War provided India leeway to use USSR as a counterweight against the Chinese. However, the **disintegration of the USSR** changed this. Russia was much weaker than the erstwhile USSR and incapable of helping India balance the potential threats from China and this **pushed India to diversify its relationships with other countries as an external balancing strategy against China.**
- Russia had been trying to build a trilateral grouping of Russia-India-China against a U.S.-led unipolar world. Though India did become a part of this grouping in the initial years, **China's dismissive attitude toward Indian capabilities, coupled with an emerging China-Pakistan nexus**, prevented the success of this trilateral. India, instead, invested its diplomatic energies in rapprochement with the United States and has **built a strategic partnership with the U.S.**
- Given **Russia's inability to influence the India-China relationship** and given the increasing hegemony of China, multilateral forums such as the

Russia-India-China (RIC) grouping and BRICS (Brazil, Russia, India, China and South Africa) have little practical value for Indian diplomacy.

- India has become integrated in the global economic order and has strategic economic relations with the U.S. led West.
- India has **shed its traditional reliance on Russia for arms imports** and has started to buy sophisticated weapons from a wider global market including countries such as the U.S., Israel and France.
- As part of its external balancing strategy, **India has also deepened its ties with Japan and Australia.**
- The increasingly assertive behaviour of China seems to be only pushing India into a closer relationship with the U.S. which considers China a threat to its own global supremacy.

Other irritants in the bilateral relation:

- The **deepening engagement between Russia and Pakistan** has generated some unease in India. The increasing military cooperation via **defence equipment sales and “friendship” exercises** between the two armies point to the deepening of ties between the two countries.

The author’s take:

- The article criticizes the current Russian foreign policy as being based on a flawed assessment of the current situation. It **warns against obsessive preoccupation with Russia’s ‘status’ rivalry with the U.S.**
- The article suggests that Russia in fact stands to gain immensely from the multilateralism that the Indo-Pacific seeks to promote, and **being China’s junior partner only undermines Russia’s great-power ambitions.**

Conclusion:

- Despite some great changes in the global and regional politico-security environment, India has been able to maintain amicable ties with Russia. However, the recent events seem to be straining this bilateral relation.
- The divergent perspectives of India and Russia have only increased over the last few years.
- While **India continues to engage with Russia, it cannot endorse the Russian perspective on the Indo-Pacific and the Quad.**
- The recent **Geneva summit between the U.S. and Russian Presidents** holds immense significance for India given that a normalisation of relations between Washington and Moscow will have a profound impact not just on the two countries but will also diminish Russia’s propensity to closely coordinate its South Asian policies with China.

The **Russian attitude toward China's growing power and influence will be the touchstone of Russia's relations with India** as an increasingly pro-Beijing Russia might adopt more aggressive blocking of India's policy agendas.

34. Towards a more federal structure

Background:

- Given the challenges to the unity of India at the time of independence, it was natural that **India opted to be a Union** unlike the U.S. and many other large countries which have federal governments.
 - **Article 1 in the Constitution states that India, that is Bharat, shall be a Union of States.**
- Unlike a federal system that divides power between national and local forms of government, the **Indian model often referred to as quasi-federal has the Central government wielding more authority and power.** Hence the constitutional system of India though basically federal has some striking unitary features. One such aspect is observed in **the realm of fiscal federalism.**
 - Fiscal federalism deals with the financial relations between units of governments in a federal government system. Fiscal federalism deals with the division of governmental functions and financial relations among levels of government.

Fiscal federalism in India:

- Unlike in federal systems of the U.S. and Switzerland, where both the federal and state governments collect direct taxes, **in India, direct tax collection is the exclusive realm of the Central government.** States normally derive their income from indirect taxes, most commonly from sales tax. Besides this, State List revenue sources include land revenue, excise on alcoholic liquor, estate duty, tax on vehicles, etc.
- **State governments get funds from the Central government** according to the Finance Commission's recommendations.
 - As per the latest Finance Commission recommendations, the Central government is supposed to distribute **41% of its gross tax revenues to the State governments.**
 - The **horizontal revenue distribution** is based on parameters like population and poverty levels.
- A **"fragmented" transfer system** is a prime feature of the Indian fiscal federal arrangements between the union and the states. The transfer of financial

resources from the union to the states flow through various streams which fall in either of the following categories:

- General purpose transfers (i.e. states can spend these resources on their respective priorities which can be drawn up by them; or
- **Conditional transfers** (i.e. the centre only transfers resources upon the condition that the states must use it for particular programs and schemes drawn up by the centre)
- **A substantial proportion of the funds received by the states continue to be conditional transfers** which are largely linked to the Centrally Sponsored Schemes.
- **The cess levied by the Central government** on various items which adds up to over ₹5 lakh crore is not shared with the State governments.
- In recent years, the fiscal relations between the union and state governments have undergone significant changes. Most significant is the **introduction of the Goods and Services Tax** which have further decreased the revenue collections for the states.

Concerns associated with lack of robust fiscal federalism: ★

Vertical Imbalances:

- The **fiscal asymmetry in powers of taxation vested with the different levels of government in relation to their expenditure responsibilities** prescribed by the Indian Constitution has led to vertical imbalances.
 - The central government is given a much greater domain of taxation, as against their expenditure responsibility.
 - At an all-India level, the States get 26% of their total revenue from the Central government.
- The vertical imbalances can have an **adverse impact on India's growth and development.**

Horizontal Imbalances:

- The horizontal devolution from the finance commissions, post-1990s, has essentially become a vehicle for **coercing states to implement fiscal reforms as part of economic liberalization.**
- This move has reduced the policy outreach of the government as they now solely rely on the finance commission, which in turn, leads to a serious **problem of increasing regional and sub-regional inequities.**
 - Some of the so-called poorer States get up to 50% of their total revenue from the Central government, making them even more dependent.
- It has caused an unfortunate **surge in horizontal imbalances** because of the differing levels of attainment by the states, resulting from the differential

growth rates and their developmental status in terms of the state of social or infrastructure capital.

- This may potentially **reduce the states' capacity to intervene in economic and social sectors.**

Politicizing of the fiscal devolution:

- Though the financial devolution to states is based on criteria set by the Finance Commission, often politics intervenes and some States get less and some more. Also, usually, the Central government does not meet the set target for vertical devolution.
- The economic power available to the Central government under this system allows the ruling parties at the Centre to use these funds to their advantage.
- This leads to various States either petitioning or coming into conflict with the Central government on this issue.

Issue of regional disparity:

- Maharashtra, Delhi and Karnataka, Tamil Nadu and Gujarat contribute 72% of the total tax revenue; however, they receive a lesser share of the revenue distributed by the Central government.
- **This disparity is more evident when one compares the northern and southern states.** States like Uttar Pradesh and Bihar continue to receive a substantial proportion of the revenue distributed despite lower levels of revenue contribution.
- Given the fact that the population growth rates in the south have come down to near zero, whereas the population in central and north India still continues to grow, **the cross-subsidy from the south to the north** will therefore only grow in the times to come.
- The concerns associated with the disparity of financial devolution along with concerns of the shifting of political power to the more populous northern states post a possible 2026 delimitation exercise have raised apprehensions of political marginalization in the southern states. This **could fuel divisive politics in such states.**

Recommendations:

- Given the many concerns associated with the current framework of fiscal federalism and the political challenges in addressing them, there is a serious need for redefining India's current fiscal federalism structure.
- In this direction, there is the need to provide **greater economic power to the States so that they can directly collect more taxes and be less dependent on the Central government.** The poorer States will need some support from the centre for a transition period.

- **Fiscal empowerment of the states** rather than the current top-down approach would bring the following benefits:
 - This would **improve Centre-State relations** given the reduced vertical imbalances.
 - This would not only help the states collect higher revenues, but could accrue critical **improvements in terms of efficiency, accountability, manageability and autonomy**. Allocation of resources can be done more effectively by states and local governments.
 - Such a step would **fiscally empower the states to undertake crucial developmental interventions**.
 - Other benefits of fiscal decentralization include: regional and local differences can be taken into account; lower planning and administrative costs; competition among local governments favours organizational and political innovations; and more efficient politics as citizens have more influence.

Conclusion:

- **Fiscal federalism is an important aspect of political federalism** which needs to be recognized and nurtured to ensure the unity and integrity of the nation.

35. A case to decriminalise suicide

Background:

Suicides in India:

- Suicide is an **emerging and serious public health issue in India**.
- The rate of suicides has been increasing in India over the years. According to the World Health Organization, **India has the highest suicide rate in the Southeast Asian region**.
- As per the National Crime Records Bureau, around 1,34,516 cases of suicide were reported in 2018 in India.
- Suicide has been the **most common cause of death in the age group of 15–29 years**.
 - Depression, chronic ill health, guilt, trauma, substance abuse, failure in exams, and loss of loved ones are some of the leading reasons for suicides in India.

Section 309:

- In India, **suicide is illegal** and the survivor would face a jail term of up to one year and a fine under Section 309 of the Indian Penal Code.

Arguments in favour of penal provisions of Section 309:

- While the **right to life is a natural right embodied in Article 21 of the Indian Constitution**, suicide amounts to an unnatural termination or extinction of life and, therefore, incompatible and inconsistent with the concept of the right to life.
- The judgment in *Gian Kaur V. State of Punjab* (1996) and the Supreme Court's *Aruna Ramchandra Shanbaug v. Union of India* (2011) judgment, has endorsed the above observation.

Arguments against penal provisions of Section 309:

- The **Bombay High Court in the Maruti Shripati Dubal v. State of Maharashtra (1986) case declared Section 309 unconstitutional** based on the reasoning that the right to live will also include a right not to live or not to be forced to live.
- Similar views were expressed in the *Chenna Jagadeeswar v. State of Andhra Pradesh* and *P. Rathinam v. Union of India* (1994) cases. These judgments note **Section 309 of the Indian Penal Code as being violative of Articles 14 and 21 of the Indian Constitution.**
- The purpose of any punishment is to prevent a person from committing any crime. The **prescribed punishments under Section 309 seem ineffective in preventing prospective suicides by deterrence.**
- Rather than punishment, the person who made the suicide attempt on account of any possible mental disorders must be provided psychiatric and reformatory treatment and not subjected to imprisonment.

Recommendations:

Repealing of Section 309:

- There is an urgent need to **shift from penalizing attempts to suicide to providing psychological or mental treatment and support to the persons affected**, given the presumption of severe stress in case of an attempt to die by suicide.
- Thus the article argues for the **repealing of Section 309 of the Indian Penal Code.**

Preventing suicides:

- Reducing social isolation and social disintegration

- **Treating mental disorders**
- Enabling easy access to psychological counselling
- Improving coping strategies of people who are at risk through the promotion of psychological motivational sessions and stress-reducing techniques like meditation and yoga.
- Reducing risk factors for suicide, such as poverty and social vulnerability.

Additional information:

Mental Healthcare Act:

- The Indian Parliament passed the **Mental Healthcare Act in 2017**.
- Section 115 (1) of the Act provides, “Notwithstanding anything contained in section 309 of the Indian Penal Code, any person who attempts to commit suicide shall be presumed, unless proved otherwise, to have severe stress and shall not be tried and punished under the said Code.”

36. 'Tying reforms, incentives helped widen adoption'

Background:

Reform linked additional borrowing limits:

- In May 2020, as part of the **Aatmanirbhar Bharat package**, the Centre had announced that state governments would be allowed enhanced borrowing for 2020-21. **An extra 2% of GSDP (gross state domestic product) was allowed, of which 1% was made conditional on the implementation of certain economic reforms.**
- The four citizen-centric areas for reforms identified were:
 - Implementation of One Nation One Ration Card System
 - Ease of doing business reform
 - Urban local body/utility reforms
 - Power sector reforms.

Details:

- Many states have implemented the proposed reforms.
- Twenty-three States have availed of additional borrowings of ₹1.06 lakh crore out of a potential ₹14 lakh crore.

Significance:

Shift in approach:

- The reform-linked borrowing by states amounts to a new model of public finance in India.
- This approach marks a shift from a model of 'reforms by stealth and compulsion' to a **new model of 'reforms by conviction and incentives'**, which would be more efficient and effective.

Nudge for reforms:

- In a **country plagued by undue operational delays of schemes and reforms**, this nudge for reform is a much welcome move. Experts have suggested that without the incentive of additional funds, the enactment of the proposed policies would have taken years.

Public friendly reforms:

- The proposed reforms were both directly and indirectly linked to **improving the ease of living for the public**.

Promoting fiscal sustainability:

- This model promoted fiscal sustainability in the long run while also raising adequate resources for public welfare.

37. The gender technology gap has to end

Introduction:

- The **COVID-19 pandemic has exposed and exacerbated the existing inequalities** in the society.
- One major inequality which has been most noticeable during the pandemic has been the **gender inequality in access to technology**.

Manifestations of gender inequality in access to technology:

Digital device ownership and usage:

- In **South Asia, only around 65% of women have access to a mobile**, which has emerged as the major tool for digital connectivity in recent years.
- In families which share a digital device, it is more likely that the males of the family would have better access to such devices. **Females have to face suspicion and opposition by trying to access the devices** which could be attributed to patriarchal attitudes and cultural beliefs.

Limited or no access to the internet:

- According to Global System for Mobile Communications (GSMA) estimates, over 390 million women in low- and middle-income countries do not have Internet access. South Asia alone has more than half of these women.
- **Only 14.9% of Indian women have been reported to be using the internet.**

Non-neutral nature of technologies:

- In the App Store, most of the existing two million apps **cater mainly to young men.**
- Given that most technologies are created by men, for men, they **do not necessarily meet women's requirements.**

Concerns:

- The lack of equitable access to technology has a perceptible impact on women.

Access to critical information and services:

- The technological gaps have **prevented women from accessing critical services and information during the COVID-19 pandemic.**
 - In India, Bangladesh and Pakistan, fewer women than men received the necessary **information to survive COVID-19.**
 - The need to **register online for vaccination** has led to lower vaccination levels in women as compared to men.
- The information and access to health care have largely moved online and access to technology has become crucial to ensuring public health and safety.

Deepen existing inequalities:

- The lack of access to technology could **rob the technologically deprived women of the potential advantages of such technologies.** This will only deepen the existing gender inequality in society and render the achievement of gender equality more difficult.

Recommendations:

Addressing the social aspects:

- The mindset around digital technology and device ownership must change.
- This could be ensured by the **social and economic empowerment of women** through appropriate government policies and schemes.

Feminist technology:

- There is a need to **address the existing inequality through innovation**. Adoption of feminist technology should be the way forward.
 - **Feminist technology (also called “femtech”)** is an approach to technology and innovation that is inclusive, informed and responsive to the entire community while acknowledging all the existing diversity.

Women focussed products:

- Interventions designed specifically for women need to be considered.
 - Examples: **Apps for women and mothers to access telemedicine consultation**. Digital networks to connect women to informal job opportunities while balancing caring for their families. **Built-in features on mobile phones such as an emergency button** connecting women to law enforcement if they face unwanted street harassment should also be considered.

Involving the private sector:

- Given that governmental policies alone cannot address this issue of inequitable technological access, the private sector should be involved too through appropriate policies and incentives.

Measures being taken by UN Women:

- UN Women has been undertaking the following measures and initiatives towards addressing the challenge of gender inequality in access to technology.
 - **The Generation Equality Forum aims to double the number of women and girls working in technology and innovation.**
 - It is encouraging investment in feminist technology and innovation to support women’s leadership as innovators.
 - It also aims to reduce the **gender digital divide and ensure universal digital literacy by 2026** through digital empowerment programmes.
 - Its initiatives such as **EQUALS and International Girls in ICT Day celebration** aims to encourage more girls into taking STEM (science, technology, engineering, and mathematics) as their academic areas, enter digital technology careers, and aspire to be the next leaders in digital technology.

Significance:

- The need for a more **equal, diverse, and sustainable world of technology** is inevitable, more so after the experience of the disruption caused by the COVID-19 pandemic. Bringing an end to the gender technology gap **will help**

save lives and make livelihoods more secure in the face of any future pandemics.

- Gender-equal technology is not just significant from an altruistic perspective but is also a **pragmatic approach given the economic dividends that it could yield**. Thus it could not only be advantageous for the social benefits it could bring but could also be financially viable for the developer.
 - Given the potential of women and girls as large consumer groups they could act as major profit drivers for the sector. According to GSMA, closing the gender gap in mobile Internet usage in low- and middle-income countries would **increase GDP by U.S. \$700 billion over the next five years**.

38. Blended learning won't work

Context:

- The **recent circular by the University Grants Commission (UGC)** proposing the shift to a blended learning (BL) approach under which the **higher educational institutions (HEI) would teach 40% of any course online and the rest 60% offline**.

Arguments in favour:

Student-friendly:

- As against the traditional classroom model which is teacher-directed, top-down, and employs a one-size-fits-all approach, **BL is student-driven, bottom-up, and customizable**.
- BL could also bring in the much-needed **flexibility in assessment and evaluation patterns** as envisioned in the recent National Education Policy.
- This flexibility in the teaching and learning environments will lead to **improved student learning outcomes** and also **enhance self-learning opportunities for working students**.

Scope for institutional collaborations:

- BL would provide for increased opportunities for institutional collaborations at a distance. This will have a **perceptible impact on the quality of education** that such a system can provide for.

Enhanced role of a teacher:

- The enhanced student-teacher interactions envisioned in the BL system will **enable teachers to have a greater influence and effect on students' learning**.

- The adoption of a BL system will result in the shifting of the role of the teacher from being a mere knowledge provider to that of a coach and mentor.

Concerns:

Cost factor:

- The shift to a BL system will **require a substantial upfront investment**. Given that 60.56% of the 42,343 colleges in India are located in rural areas and 78.6% are privately managed, there are doubts over whether such institutes will be able to successfully implement BL. Only the big and elite institutions would be able to invest in technology and provide such learning.
- Even if these institutes are able to implement such a system, **the fee that they will have to charge to cover up the investments will be high** and may prove to be unaffordable for all sections of society.

Digital divide:

- Given that **internet penetration in India continues to be low with a skewed distribution between urban and rural areas**, the shift to the BL system could exacerbate the existing digital divide resulting in the exclusion of a large number of rural students.
 - As per available estimates, **Internet penetration is only 45% as of January 2021**.

Fails to acknowledge the heterogeneous nature of the student community:

- Given the fact that the students entering higher education come from diverse backgrounds, a uniform approach may not be the ideal way forward.
- Expecting the students to switch over quickly to collaborative and technology-enabled learning will be stressful for them and may **accentuate the existing dropout rate in higher education**.

Reduction in social contact:

- Given that the BL system will **entail a reduction of the student engagement in classroom environments**, there are doubts over the ability of the BL system to accrue all-round formation of the student including the development of their intelligent quotient, emotional quotient, social quotient, physical quotient and spiritual quotient.
- These are critical for personality development, character building and career formation as envisioned in the recent **National Education policy which calls for 'all round education of a student'**.

Recommendations:

Closing the digital divide:

- The government should **ensure equity in access to technology** and bandwidth for all HEIs across the country free of cost.

Appropriate teacher education:

- Digital training programmes for teachers should be ensured to help them adapt to the new system. This will make them more effective.

Re-designing of the curriculum:

- The new system needs to be complemented with a re-designed curriculum right from the school level up to the higher education level.

Conclusion:

- The blended learning (BL) approach could lead to the **actualisation of the three cardinal principles of education policy: access, equity and quality** provided the associated concerns are adequately addressed.

39. Staging a comeback, re-energising India's Africa policy

Context:

- The article analyzes the **India-Africa bilateral relations** and carries out a critical review of India's Africa foreign policy implementation.

India-Africa relations:

- The relations between India and Africa have long **historical roots**. For many centuries, the peoples of the two parts of the world have interacted at the levels of economics, politics, and socio-cultural practices.
- After independence, India rapidly built up political ties with the newly independent countries and freedom movements in sub-Saharan Africa as well as with the countries in northern Africa. In the 1950s, 60s and 70s, India enjoyed strong political and brotherly bonds with many of the African nations.
 - India was one of the key organizers of the **Asian-African Conference, held in Bandung, Indonesia, in 1955**.
- India's ties with Africa have been stepped up in the last two decades both bilaterally and with the regional economic communities, initially with the

Southern African Development Community (SADC) and Team-9 and continentally through the **African Union (AU)**.

- A structured engagement with Africa took shape in 2008 with the First **India Africa Forum Summit (IAFS-I)**. The Third India Africa Forum Summit (IAFS-III) of 2015 was a landmark event with delegations representing all African countries.
- The '**Delhi Declaration 2015-Partners in Progress: Towards a Dynamic and Transformative Development Agenda**' was adopted at the conclusion of IAFS-III and so was the **India-Africa Framework for Strategic Cooperation**.
- The current administration too has designed a forward-looking strategy to deepen relations with African countries and has backed it with the requisite political will in expanding the **multi-faceted engagement with African nations**.

Significance of Africa for India:

- Africa is considered a foreign policy priority by India for the following reasons.

Economic aspects:

- Africa today is definitely a 'happening continent'.
- **Africa is home to over half a dozen of the fastest-growing countries of this decade** which has led to some referring to **Africa as the future growth pole of the world**. Africa has witnessed rapid expansion in sectors like tourism, banking, telecommunications, manufacturing and agriculture.
- Most of Africa is experiencing moderate to healthy economic growth rates, which is fuelling the growth of its middle class and demand for more goods and services. **Africa's growing middle class**, already expected to be bigger than India's, continues to boost consumption, construction and private investment.
- Thus Africa will be a **high priority area for India in the economic and commercial sphere**.
- Indian exports to Africa of manufactured products like medicines, automobiles, two-wheelers, iron and steel products, plastics, machinery and engineering processes, etc. as well as refined petroleum products are quite substantial and growing. Africa provides an alternate destination to such manufactures from India whose exports to traditional destinations in Europe and North America are on the decline, and helps to **prop up the 'Make in India' campaign**.
- India is among Africa's largest trading partners. **India's exposure in terms of investments in Africa is also considerable**. Thus bilateral trade and investment compel India to pay attention to the African market.

- The bilateral trade is valued at \$55.9 billion in 2020-21.
- India's top five markets today are South Africa, Nigeria, Egypt, Kenya and Togo. The countries from which India imports the most are South Africa, Nigeria, Egypt, Angola and Guinea.
- India's top three exports to Africa are mineral fuels and oils (processed petroleum products), pharmaceutical products and vehicles.
- Mineral fuels and oils (essentially crude oil) and pearls, precious or semi-precious stones are the top two imports accounting for over 77% of our imports from Africa.

Geographical aspects:

- India and Africa share a millennial old connection given the geographic proximity of India and Africa. In that sense, **Africa is a neighbour and both share large coastal areas along the strategic Indian Ocean region.**

Substantial Diaspora population:

- A significant number of people of Indian origin have, over two centuries of outward migration, made large parts of southern and eastern Africa their home.
- Members of the Indian diaspora reside in around 46 countries of Africa. **Indians in Africa account for 12.37% of the total diaspora in India over time.**
- The large populations of Indians within Africa could be the cause of the political support Africa is seeing from India now.

Source of critical commodities:

- Africa supplies a vast basket of goods to India which is dominated by commodities, particularly **crude oil, gas, pulses and lentils, leather, gold** and other metals, all of which India lacks in sufficient quantities.
- **The diverse sources in Africa** provide some protection against the vulnerability of depending on just one or two regions for their supply.

Geopolitical aspects:

- African countries tend to take a unified stand on such multilateral issues after discussions and deliberations at the African Union consisting of 55 members. **Africa's support would be inevitable for India's policy agenda** of UN reforms and India's bid for a permanent UN Security Council seat.
 - India and Africa have often held common positions in global platforms and worked together to guard the interests of other developing countries.

- A robust relationship with Africa constitutes an important part of **India's South-South Cooperation platform.**

China factor:

- Trade between China and Africa has been increasing at an exponential pace and China is currently Africa's largest trading partner.
- The increasing economic heft of China has resulted in China enjoying critical political support among the political classes of Africa.
- China enjoys a significant military presence in the region.
 - In July 2017, China set up its first overseas **military base in Djibouti** as a logistics facility for peacekeeping missions on the continent.
- There have been increasing **international concerns over the significant political, economic, and military roles that China is playing in the African continent**, more so for India given the increasing Chinese presence on the coastline of the strategic Indian Ocean.
 - Various security analysts have described the increasing presence of China as part of its **"String of Pearls" geopolitical and military strategy in the Indian Ocean.**
- Thus cultivating good relations with African nations is an inevitable need for India to counter the Chinese plans in the Indian Ocean region.

Significance of India for Africa:

Developmental aid:

- Through its **Technical and Economic Cooperation (ITEC) programme** India has been providing technical assistance through human resource development to other developing countries, with African countries being the greatest beneficiaries of it.
- India has been aiding development in Africa by contributing to African institutions through **training and capacity-enhancing assistance.**
 - India has invested substantial amounts to establish educational institutions and training programs in several African countries.
 - In 2006, India launched its flagship aid initiative in Africa by constructing the \$125 million **Pan-African e-Network**, the continent's largest tele-education and telemedicine initiative. The network links 47 African countries with schools and hospitals in India through satellite and fibre-optic links.
- The values that steer India's development cooperation – **demand-driven, conditionality free and based on the principle of partnership among equals** – are appreciated in Africa.

Aiding economic growth:

- India has been a major aid contributor to economic development in the African continent through **grants and concessional lines of credit**.

Medical aid:

- The availability of **Indian-manufactured drugs** has also been essential in the fight against the HIV and AIDS pandemic in Africa.
- Even as the COVID-19 era began in March 2020, New Delhi took new initiatives to assist Africa through prompt despatch of medicines and later vaccines.

Security aspects:

- In security matters, India has also assisted African countries to fight against terrorism through the **provision of arms and training of military personnel**.
- India also participates in **UN-led peacekeeping missions across Africa**.

Concerns:

- Following are some of the concerns with regard to India-Africa relations.

Bilateral economic relations:

- **India-Africa trade is on a decline**. According to the Confederation of Indian Industry, bilateral trade in 2020-21 has fallen by \$10.8 billion compared to 2019-20, and \$15.5 billion compared to the peak year of 2014-15.
- The composition of the India-Africa trade has not changed much over the two decades thus indicating the **failure to diversify the bilateral trade relations**.
- **India's investments in Africa too have witnessed a decline** from \$3.2 billion in 2019-20 to \$2.9 billion in 2020-21. Total investments from India into Africa over the last 25 years account for only about one-third of China's investment in Africa.

Global competition for Africa and India found lagging:

- Africa has experienced a sharpened international competition, known as '**the third scramble**', in the first two decades of the 21st century.
- A dozen nations from the Americas, Europe and Asia especially the United States, the European Union (EU), China, Japan and India have striven to assist Africa in resolving the continent's political and social challenges and, in turn, to benefit from Africa's markets, minerals, hydrocarbons and oceanic resources, and thereby to expand their geopolitical influence.
- Africans have been deeply affected by the COVID-19 pandemic and remain ill-equipped to tackle it.

- While China has successfully used the pandemic to expand its footprint by increasing the outflow of its vaccines, unfortunately, **India's 'vaccination diplomacy' has suffered** during the devastating second wave of the pandemic in India. India which has traditionally ensured the flow of aid to Africa has been found wanting as it has been caught up in coping with the novel coronavirus pandemic.

India's changed foreign policy priorities:

- **Geopolitical tensions in Asia** and the imperative to consolidate its position in the Indo-Pacific region have compelled India to concentrate on its ties with the United Kingdom, the EU, and the Quad powers, particularly the U.S. Consequently, the **attention being paid to Africa is on the wane.**

Way forward:

- For mutual benefit, Africa and India should **remain engaged at all levels - political and economic.**
- The future engagement must recognize and acknowledge the historical and current context of relations between India and Africa and the effect of cross-cutting multilateral issues between the two as envisaged in the Delhi Declaration.
- India should focus on according Africa an important place in its diplomacy and economic engagement.
 - The third India-Africa Forum Summit was held in 2015. The **pending fourth summit of the India-Africa Forum Summit should be held as soon as possible.**
 - **Fresh financial resources for grants and concessional loans** to Africa must be allocated.
 - India should seek to improve the economic relations with emphasis on developing and deepening **collaborations in health, space and digital technologies.**
- To overcome the China challenge in Africa, **increased cooperation between India and its international allies seems inevitable.**
 - Just like the recent **India-EU Summit where Africa has been identified as a region for a partnership-based approach**, similarly, India should propose a robust partnership plan for Africa in the Quad deliberations.

40. Clues from meteorite to Earth's mantle

Context:

- Study of the **Kamargaon meteorite** by researchers from the Indian Institute of Technology (IIT) Kharagpur.

Background:

Kamargaon meteorite:

- In November 2015, a meteorite fell near the town of Kamargaon in Assam, India.
- The meteorite **originated in the asteroid belt between Mars and Jupiter** and was sucked in by Earth's gravity.
- Based on its mineral composition, it was classified as a **chondrite**, a variety of stony meteorite.

Shocked meteorite:

- **The kamargaon meteorite is a shocked meteorite.** It means that the meteorite has gone through **high-pressure and high-temperature conditions**.
- These meteorites would have survived high-pressure and high-temperature events during their formation and fall on Earth (**impact event**) due to the planet's gravitational pull.
 - The meteorite has experienced the kind of pressure around 24 Giga Pascal (equivalent of pressure found in Earth's mantle), which is 2,50,000 times more than the atmospheric pressure and temperatures up to 2,500 degrees Celsius.

Structure of the Earth:

- The Earth is composed of three layers – **the crust, mantle and core**.
 - The upper crust layer is relatively thin, followed by the **intermediate silicate mantle** and then the centre **iron-nickel alloy core**.

Details of the study:

Meteorite composition:

- The meteorite is mostly made up of a substance known as **Olivine**.
 - Olivine is a rock-forming mineral found in dark-coloured igneous rocks and has a **very high crystallisation temperature** compared to other minerals. It is considered an **important mineral in Earth's mantle**.

Olivine dissociation:

- **Olivine breaks down into Bridgmanite and Magnesiowustite under high temperature and pressure conditions** like those observed in the Earth's lower mantle.

- The mantle faces high temperature and pressure. When materials are transported to the lower mantle by **convection or subduction**, there would be high-temperature conditions in the lower mantle.
- Using new **high-resolution electron microscopy and spectroscopy**, researchers studied the dissociation reaction of olivine in the Kamargaon meteorite. They have found mechanisms and reactions that may be driving the transformation of olivine.

Significance of the study:

Understanding of the mantle:

- The meteorite provides a valuable sample of naturally occurring high-pressure minerals like those believed to make up the Earth's mantle. Thus the **analysis of the shocked meteorite offers new clues about the Earth's mantle and its process of formation.**

Challenges in the study of structure of the earth:

- While much is known about the crust composition and formation, **very little is known about the mantle and the core due to their inaccessibility.**
- Given the relative inaccessibility of deeper layers of the earth, the only way to study material from such immense depths is through **volcanic eruptions and magma samples.** The **study of different meteorites** also provides valuable insights into the formation of the earth.

Better understanding of geophysical phenomenon:

- The understanding of the **olivine dissociation**, which is one of the most important reactions that **largely control the properties in the Earth's interior** will better understand the geophysical phenomenon associated with it.
- The samples found in the meteorite are similar to those observed on plate tectonics and could prove useful in **studying earthquakes and volcanic activities.**

GS 3 : Economy, Science and Technology, Environment

1. The rural economy can jump-start a revival

Context:

- The second wave of the COVID-19 pandemic and its economic impact

Details:

- As against the official claims of an ongoing economic recovery, the **article argues that the economic recovery post the second wave of the pandemic would be difficult** based on the following arguments.

Flaws in official estimates:

- Though the GDP growth has been better than estimated in the previous fiscal year, this is attributable to the **methodological issue of underestimation of the economic distress in the unorganised sector observed in the official estimates** like Gross Domestic Product (GDP) growth from the National Statistical Office (NSO).
- The article also warns that given that the economy has already suffered last year, any economic recovery will largely be driven by the **base effect** rather than a real recovery.
 - The base effect refers to the effect that the choice of a basis of comparison or reference can have on the result of the comparison between data points.

Continued trend of economic slowdown:

- What makes economic recovery challenging is that the current decline **follows three years of a sharp decline in GDP** even before the novel coronavirus pandemic hit India. This could be **indicative of the structural issues** that could be plaguing the Indian economy.
- The pandemic has only worsened an already fragile economic situation. The sharp decline in GDP was partly a result of the trend of a slowdown in economic activity since 2016-17.

Impact on incomes:

- The economic impact of the pandemic has **resulted in lost jobs and incomes for the households** which have **depressed demand** in the economy which is so very important for economic recovery.

Insufficient response from the government:

- The less than **adequate response from the Government in terms of increased fiscal support** will undermine economic recovery.
- The article argues that the government interventions to help small and medium enterprises as well as the large unorganised sector which bore the brunt of the restrictions in economic activity are insufficient.

Impact on rural areas:

- As compared to the first wave of the pandemic, when the agriculture sector remained a key driver of the Indian economy, **in the second wave the rural areas have been severely impacted both in terms of health and livelihoods.**
- The loss of earning members to the pandemic and the expenditure of large sums on private healthcare could have pushed a **large proportion of the rural population into indebtedness from non-institutional sources.** Thus the rural areas are under considerable economic distress.

Inflation threat:

- **The rising inflation threatens to reduce the purchasing power** of the rural economy already struggling with declining incomes and job losses.
- The increased input costs of raw materials into agricultural activities could **adversely impact the profit margins in the sector** which will, in turn, have an impact on the incomes of the rural population.

Way forward:

- The rural economy including the **agricultural economy continues to remain crucial for any strategy of economic revival.**
- The government will have to focus on the following measures.
 - **Speed up vaccination** coverage in rural areas.
 - Provide **greater fiscal support** to rural areas in terms of **direct income support** to revive demand in the economy and also through **subsidies.**

2. Need to acknowledge the state of India's poor

Counting the number of the poor

- If the state of the Indian economy is to be repaired, we need to meticulously **count the number of the poor and to prioritise them.**
- The **World Bank \$2-a-day poverty line** might be inadequate but it would be a start and higher than the **last line proposed by the C. Rangarajan committee.**
- A survey in 2013 had said India stood at 99 among 131 countries, and with a median income of \$616 per annum, it was the lowest among BRICS and fell in the lower-middle-income country bracket.
- Since 2013 three important data points have made it clear that the **state of India's poor needs to be acknowledged** if India is to be lifted.
- The first being, **the fall in the monthly per capita consumption** expenditure of 2017-18 for the first time since 1972-73.
- Second is the fall of India in the **Global Hunger Index to 'serious hunger' category.**
- Third, health census data or the recently concluded National Family Health Survey or NFHS-5, which had worrying markers of **increased malnutrition, infant mortality and maternal health.**
- A fourth statistic, **Bangladesh bettering India's average income statistics,** must also be a reason for Indians to introspect.

Increase in number of poor in India

- In 2019, the global **Multidimensional Poverty Index** reported that **India lifted 271 million citizens out of poverty between 2006 and 2016.**
- Since then, the **International Monetary Fund, Hunger Watch, SWAN** and several other surveys show a decided slide.
- In March, the Pew Research Center with the World Bank data estimated that 'the number of poor in India, on the basis of an income of \$2 per day or less in purchasing power parity, has more than **doubled to 134 million from 60 million in just a year due to the pandemic-induced recession**'.
- In 2020, **India contributed 57.3% of the growth of the global poor.**
- This has thrown a spanner in the so far **uninterrupted battle against poverty since the 1970s.**
- Urgent solutions are needed within, and the starting point of that would be only when **we know how many are poor.**

Debate on the poverty line

- In 2011, the **Suresh Tendulkar Committee** report at a 'line' of **₹816 per capita per month** for rural India and ₹1,000 per capita per month for urban India, calculated the poor at **25.7% of the population.**

- The anger over the 2011 conclusions, led to the setting up of the C. Rangarajan Committee.
- In 2014, C. Rangarajan Committee estimated that the **number of poor were 29.6%**, based on persons spending below ₹47 a day in cities and ₹32 in villages.
- The **National Commission for Enterprises in the Unorganised Sector in 2004**, had concluded that 836 million Indians still remained marginalised.
- The Commission's conclusion was ignored – **that 77% of India was marginalised** – emphasising that it was a problem of a much bigger magnitude, than the figure of 25.7% conveyed.

Why counting the poor matters?

1) Helps in forming public opinion

- Knowing the numbers and making them public makes it possible to get public opinion **to support massive and urgent cash transfers**.
- The world outside India has moved onto propose **high fiscal support, as economic rationale** and not charity.
- In India too, a dramatic reorientation would get support only once numbers are honestly laid out.

2) It helps in evaluating success of policies

- Recording the data helps to evaluate all policies on the basis of **whether they meet the needs of the majority**.
- Is a policy such as bank **write-offs of loans amounting to ₹1.53-lakh crore** last year, which helped corporates overwhelmingly, beneficial to the vast majority?
- This would be possible to transparently evaluate only when the numbers of the poor are known and established.

3) Helps in addressing the concerns of real majority

- If government data were to honestly account for the exact numbers of the poor, it may be more realistic to expect the public debate to be conducted on the concerns of the real majority.
- Such data would also help in **creating a climate that demands accountability** from public representatives.

4) To gauge the rising inequality

- India has clocked a massive rise in the market capitalisation and the fortunes of the richest Indian corporates, even as millions of Indians have experienced a massive tumble into poverty.
- To say that the stock market and the Indian economy are 'not related' is ingenuous.
- Indians must have the right to question whether there is a connection and if the massive rise in riches is not coincidental, but at the back of the misery of millions of the poor.
- If billionaire lists are evaluated in detail and reported upon, the **country cannot shy away from counting its poor.**

Conclusion

The massive slide into poverty in India that is clear in domestic and international surveys and anecdotal evidence must meet with an institutional response.

3. Policy creep

Context:

- **Amendments suggested to the Consumer Protection (E-Commerce) Rules, 2020** by the Department of Consumer Affairs.

Background:

- **E-commerce has been witnessing tremendous growth in recent times.** The Indian e-commerce market is expected to grow to US\$ 200 billion by 2026.
- The increasing prominence of e-commerce along with a rise in associated consumer complaints indicated the **need to regulate the booming sector.**
- The Consumer Protection Act, 2019 came into force in July 2020 and the **Consumer Protection (E-commerce) Rules, 2020**, were subsequently notified.

Arguments in favour:

Regulating the e-commerce platforms:

- There have been concerns over the business practices of the leading e-commerce platforms in India.

- They have been accused of having **pricing practices** that are skewed to favour select sellers on their platforms.
- Their **deep discounting policies** have adversely impacted offline retailers and have been termed as **unfair trade practice**.
- The proposed amendments will further **strengthen the regulatory regime to curb the prevalent unfair trade practices**.
- The proposed amendments will bring the much-desired **transparency in the e-commerce platforms** and help prevent unfair trade practices by them.
- The ban on flash sales and deep discounting would **encourage free and fair competition in the market**.

Protecting consumer interests:

- There has been a massive increase in the number of consumer complaints against e-commerce platforms.
 - **E-commerce tops the National Consumer Helpline's complaints chart**.
- The amendments are aimed at protecting the interests of consumers.
- The **provisions on mis-selling and fall back liability** empower the customers against the e-commerce platforms to a great extent.
 - Mis-selling is selling goods and services by deliberate misrepresentation of information.

Arguments against:

Risks of over-regulation:

- The article argues that the draft e-commerce amendments are indicative of the Government's increasing keenness to exercise greater oversight over online platforms and warns that such an approach may **prove detrimental in the longer run**.
- **Overregulation risks retarding growth and job creation** in the hitherto expanding e-commerce sector.

Impact on platforms:

- The latest amendments aimed at preventing direct selling would also adversely impact several platforms that retail products supplied by vendors with arm's length ties. This could have a **detrimental impact on their functioning** thus adversely affecting not just the prospects of the company but also that of the lakhs of employees that these platforms employ.

4. What is Gain-of-Function Research?

With the re-emergence of the Wuhan lab-leak origin theory, questions are also being raised on what gain-of-function research is, and whether the benefits of conducting such research outweigh the risks of pathogens escaping from labs.

What is gain-of-function research?

- In virology, gain-of-function research involves deliberately altering an organism in the lab, altering a gene, or introducing a mutation in a pathogen to study its transmissibility, virulence and immunogenicity.
- It is believed that this allows researchers to study potential therapies, vaccine possibilities and ways to control the disease better in future.
- Gain-of-function research involves manipulations that make certain pathogenic microbes more deadly or more transmissible.
- This is done by genetically engineering the virus and by allowing them to grow in different growth mediums, a technique called as serial passage.

Antithesis to this theory

- There is also 'loss-of-function' research, which involves inactivating mutations, resulting in a significant loss of original function, or no function to the pathogen.
- When mutations occur, they alter the structure of the virus that is being studied, resulting in altered functions. Some of these significant mutations might weaken the virus or enhance its function.

Associated risks

- Some forms of gain-of-function research reportedly carry inherent biosafety and biosecurity risks and are thus referred to as 'dual-use research of concern' (DURC).
- This indicates that while the research may result in benefits for humanity, there is also the potential to cause harm – accidental or deliberate escape of these altered pathogens from labs may cause even pandemics.

Essential component of vaccine development

- The current medical countermeasures are often insufficient largely because of resistance mechanisms that lead to 'escape mutants', i.e., drug-resistant strains.
- There is, hence, a continual need to develop new antiviral drugs and additional options, such as immunotherapy, based on neutralizing monoclonal antibodies.

- Ultimately, gain-of-function studies, which enhance viral yield and immunogenicity, are required for vaccine development.

What is the situation in India?

- In India, all activities related to genetically engineered organisms or cells and hazardous microorganisms and products are regulated as per the “Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells Rules, 1989”.
- Last year, the Department of Biotechnology issued guidelines for the establishment of containment facilities, called ‘Biosafety labs’, at levels two and three.
- The notification provides operational guidance on the containment of biohazards and levels of biosafety that all institutions involved in research, development and handling of these microorganisms must comply with.

Should research continue?

- Scientists have differing opinions on the issue, particularly since the emergence of the COVID-19 pandemic.
- While those on the side of gain-of-function research say that it makes science and governments battle-ready for future pandemics, there have been a rising number of calls to suspend such research.
- Proponents of gain-of-function research believe that “nature is the ultimate bioterrorist and we need to do all we can to stay one step ahead”.
- Some researchers think it is time to stop such research.
- Science policymakers “must wrestle with defining the rare instances in which the benefits of experiments that enhance a virus’s capacity to survive and flourish in human hosts outweigh any risks.

5. Are your staple rice and wheat losing their nutrients?

Context:

- A recent study notes **the depleting trends of essential nutrients in rice and wheat cultivated in India.**

Details:

- The study notes that the currently produced rice and wheat grains are not having the same density of essential nutrients as those cultivated 50 years ago.
- There has been a **depleting trend in grain density of zinc and iron in rice and wheat** cultivated in India over the years.

Possible reasons:

Dilution effect:

- 'Dilution effect' is caused by **decreased nutrient concentration in response to higher grain yield**. This is due to the fact that the rate of yield increase is not compensated by the rate of nutrient take-up by the plants.

Decreased quantity of nutrients in soil:

- The increasing use of **monoculture cropping patterns and intensive agricultural practices** could have resulted in a scenario where the **soils supporting plants could be low in plant-available nutrients**.

Concerns:

- The lack of essential micronutrients like Zinc and iron in Rice and Wheat could **adversely affect the nutritional security of billions of people globally**.
 - Rice and wheat constitute the staple food for over half of the global population.
 - Countries like India which continue to battle micronutrient deficiency have diets composed mainly of rice, wheat, corn, and barley. The growing of newer cultivars of rice and wheat **cannot be a sustainable option to alleviate zinc and iron malnutrition** in Indian population.

Recommendations:

Biofortification:

- Apart from the initiatives such as **providing micro nutrient supplementation pills to school children**, there is also the need to concentrate options like biofortification.
 - Fortification is the practice of deliberately increasing the content of an essential micronutrient, i.e. vitamins and minerals (including trace elements) in a food, so as to improve the nutritional quality of the food supply and provide a public health benefit with minimal risk to health.
 - **Biofortification is the process by which the nutritional quality of food crops is improved through agronomic practices, conventional plant breeding, or modern biotechnology**. It involves the breeding of food crops that are rich in micronutrients.
 - Biofortification differs from conventional fortification in that biofortification aims to increase nutrient levels in crops during plant

growth rather than through manual means during processing of the crops.

- Examples of biofortification projects include:
 - **iron-biofortification of rice**, beans, sweet potato, cassava and legumes;
 - **zinc-biofortification of wheat, rice**, beans, sweet potato and maize;
 - provitamin A carotenoid-biofortification of sweet potato, maize and cassava; and
 - amino acid and protein-biofortification of sourghum and cassava.
- The future breeding programmes of new cultivars should **focus on improving the grain ionome (nutritional make-up)** as a remedy to the observed trend of depleting micronutrient levels.

Sustainable agricultural practices:

- Given the ill effects of mono culture practices and intensive agricultural practices backed by intensive fertilizer usage, there is the need for moving towards more sustainable agricultural practices like **organic farming, multi cropping and permanent agriculture** which accord the necessary attention towards the **overall health of the soil**.

6. The debate around gain-of-function research

Context:

- With the re-emergence of the lab-leak origin theory for the SARS-CoV-2, questions are being raised on gain-of-function research.
 - The Wuhan Institute of Virology was said to have conducted gain-of-function research on coronaviruses.

Gain-of-function research:

- Gain of function research is medical research that **deliberately alters an organism in a way that increases its pathogenesis, transmissibility, or host range**.
- Gain-of-function research involves altering a gene, or introducing a mutation in a pathogen to **study its transmissibility, virulence and immunogenicity**.
 - When mutations occur, they alter the structure of the virus resulting in altered functions.

Significance:

- The gain of function research **helps better understand the functioning of the virus** and helps identify possible targets for **development of vaccines and therapeutics** against the virus.
- The study gains all the more significance given the **increasing incidence of 'escape mutants', i.e., drug-resistant strains**. This necessitates the continual need to develop new antiviral drugs and additional options, such as immunotherapy.
- The gain of function research provides valuable insights into better predicting of emerging infectious diseases and ways to control the disease better in future. Thus it involves a more **proactive approach to tackling future pandemics** and helps keep science and governments battle-ready for future pandemics.

Concerns:

- Gain-of-function research involves **genetic engineering of virus**. The **long term impact of such human intervention** remains uncertain.
- Gain-of-function research involves manipulations that **make certain pathogenic microbes more deadly or more transmissible**. Thus some form of gain of function research carries inherent biosafety and biosecurity risks, and are thus also referred to as dual use research of concern (DURC).
 - **Dual Use Research of Concern (DURC)** is life sciences research that, based on current understanding, can be reasonably anticipated to provide knowledge, information, products, or technologies that could be directly misapplied to pose a significant threat with broad potential consequences to public health and safety.
- In case of gain-of-function research, there is the **potential to cause harm through accidental or deliberate escape of the altered pathogens from labs**.
- Such research also raises **ethical concerns** because of the potential risk posed by virulent pathogen to people.

Recommendations:

- Further research in this domain should be backed by **an objective risk-benefit analysis**. The studies should gauge whether the benefits of conducting such research outweigh the risk of pathogens escaping from labs.
- There should be **responsible use of life sciences research**, focusing on **mitigation and prevention of biorisks**.
- All possible steps need to be taken to ensure the safety of the procedure. The **WHO must develop a Global Guidance Framework** for member states to

follow in this direction. This should provide operational guidance on the containment of biohazards and levels of biosafety that all institutions involved in research, development and handling of these microorganisms must comply with.

- To mitigate the associated risks while allowing the benefits of such research, various governments have mandated that DURC experiments be **regulated under additional oversight by designated institutions and government agencies**. This approach needs to be adopted in every country.
- There is the need to ensure **greater transparency** about such research given that unnecessary secrecy over such research makes it liable for misuse. There should be broader community engagement/consultation, and more transparent GOFR decision- and policy-making.

Additional information:

- In India, all activities related to genetically engineered organisms or cells and hazardous microorganisms and products are regulated as per the “**Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells Rules, 1989**”.

7. Panel formed for talks on theatre commands

Context:

A high-level committee has been formed for wider consultations on the creation of integrated tri-service theatre commands.

Details:

- The panel includes the **Vice-Chiefs of the three services, the Chief of Integrated Defence Staff to the Chairman, Chiefs of Staff Committee, and representatives from Ministries** such as Home Affairs, Finance and Law.
- Some aspects like **bringing in paramilitary forces, which are under the Home Ministry, under the purview of the theatre commands and financial implications that may arise in the process of integration** has necessitated the move.

Mandate of the committee:

- The committee will **examine all issues and find a way forward** before a **formal note** on their creation is sent to the **Cabinet Committee on Security**.

- The issue is about **fine-tuning the proposals and forming a consensus on the integrated tri-service theatre commands.**

Integrated Theatre Commands

- There are about 19 military commands in the country and only two of them are tri-service commands – Andaman and Nicobar Command (ANC) and the Strategic Forces Command, which looks after nuclear assets.
- Instead of having separate commands for every service, **the CDS is working on having a joint or theatre command that can carry out all war-fighting formations under a single commander.**
- The commander could either be from the Army, Air Force or the Navy.
- **Theaterisation means putting specific units of personnel from the three services – Army, Navy and Air Force – under a common theatre commander so they fight as a cohesive unit.**
 - Both the US and China follow a theatre command doctrine.

Note:

- It is a part of reforms carried out after the **formation of the post of the Chief of Defence Staff (CDS).**
- The mandate of the Chief of Defence Staff (CDS) includes **bringing about jointness among the three services**, including through the establishment of joint/theatre commands.
- The country's first CDS Gen. Bipin Rawat had **constituted teams headed by the Vice-Chiefs of three services to study and submit recommendations on the formation of various commands.**
- Also, **two proposed commands: air defence and maritime theatre** are being discussed.
 - The proposed **Air Defence Command plans to integrate all air assets of the armed forces.**
 - The **Maritime Theatre Command** plans to bring in **all assets of the Navy, Coast Guard as well as coastal formations of the Army and Air Force under one umbrella.**
 - On land, the **Army's Northern Command and Western Command** would be **converted into two to five theatre commands.**

8. Recovery takes more than reforms

Background:

- Growth estimates of the National Statistical Office show that after a steep contraction in the first quarter of 2020, growth accelerated steadily afterwards bringing hopes of an economic recovery.

- However, the **second wave of the COVID-19 pandemic** has adversely impacted this economic recovery process. So **as against the earlier predictions of a V-shaped economic recovery, India is more likely to witness a W-shaped economic recovery.**
- In this light, the article analyzes the government's policies and their possible impact on the economic recovery process.

Government policy:

Emphasis on long term economic reforms:

- The government has introduced a number of reforms in the economic sphere which it hopes will help the economy recover.
 - This includes the liberalization of the agricultural marketing sector, policies like the Production Linked Incentive scheme under the Atmanirbhar Bharat Abhiyaan, privatization of public sector units, lowering of corporate taxes, etc.
 - The reforms have **helped remove restrictions on private sector activity and helped incentivize private participation in the economy.**

Continued emphasis on fiscal consolidation:

- After the announcement of the limited economic stimulus package during the first wave, the **government reverted to fiscal consolidation** or the paring down of the fiscal deficit. Accordingly, it raised its budgeted expenditure by less than 1% in the last Budget.

Concerns:

Doubts over the effectiveness of the reforms in the short term:

- The article argues that the economic reforms though well-intended, may alone not be sufficient to induce the economic recovery process in India. The current economic situation and expectation of the state of the economy in the near future have **failed to enthuse private sector investment.**

Low public expenditure would impact demand generation:

- The article expresses concerns that the macroeconomic pre-occupation with fiscal consolidation may not be the best policy in the current situation. There has been an **increase in the unemployment rate and this could negatively impact demand in the economy.**

- The decision to limit public expenditure even as the economic recovery process is most likely to be hit by the second wave, will only **negatively impact the economic recovery process.**

Recommendations:

- The government should **adopt higher public expenditure as a way out of the current economic slump even if it leads to a higher than budgeted deficit or inflation.**
 - **India's public debt is low** by comparison with the OECD countries.
 - Inflation from economic expansion could be controlled through the increased availability of food resources.

9. Energy inefficiency can short circuit cooling India

Background:

Threat posed by heat waves:

- Rising temperatures and **heat waves are a growing threat to India as climate change accelerates.**
 - As per the Union Ministry of Earth Sciences' first national climate change report, 'Assessment of Climate Change over the Indian Region', India's average temperature had risen by 0.7 degrees Celsius from 1901-2018.
- **Global warming will lead to more frequent and intense heat waves.**
 - In the last three decades alone, there have been 660 heat waves across India causing 12,273 deaths.

Cooling as an indispensable adaptation to climate change:

- Substantial cooling services to keep citizens healthy and productive may as well become a necessity in the coming years. **Cooling will constitute an important part of India's adaptation measure to climate change.**
 - **The India Cooling Action Plan** projects the number of room air conditioners to become about four times in the next 10 years, and about 10 times in the next 20 years, making India the world's largest energy user for cooling.

Concerns:

- The **current low penetration level of air conditioners (ACs) in India** is a major cause of concern. A recent survey conducted in New Delhi notes that the desired levels of cooling appliances vary greatly even among relatively homogenous communities.
- The **use of inefficient ACs** to meet the cooling needs could severely dent India's climate change mitigation efforts as these inefficient ACs will lead to **high GHG emissions**.
 - As per the survey conducted in New Delhi, energy efficiency does not feature as a priority in the purchase of cooling appliances. Only 7% of the households have an energy-efficient (star-rated) fan, and most people prefer to buy a three-star AC, and less than 20% of AC-owning households bought the highest rated five-star AC.
- There is a **lack of credible data** on important factors like AC ownership and usage which can help frame appropriate policies and interventions to address residential cooling demand.

Factors leading to the use of inefficient cooling options:

Lack of awareness:

- **The low level of energy efficiency awareness** is a major bottleneck that hinders the purchase of more efficient appliances.
- There is a lack of knowledge of the **Star Labelling programme** among the general populace.
 - The Star labelling Programme has been formulated by the **Bureau of Energy Efficiency, under the Energy Conservation Act, 2001**.
 - Presently, the program covers a star rating for 26 appliances/equipment including refrigerators and air conditioners.
 - The objectives of the labelling program are to **provide the consumer with an informed choice about energy-saving** and thereby the cost-saving potential of the marketed household and other equipment.
 - Energy labelling is one of the most cost-effective policy tools for improving energy efficiency and lowering the energy cost of appliances.

Higher upfront cost:

- The higher upfront cost of the higher star rated appliances serves as a disincentive to buy such products upfront.

Low market availability:

- Given the **relatively price-sensitive market in India** and the currently low level of demand for energy-efficient appliances, there is very little output of

higher-rated appliances leading to very low market availability of efficient appliances like air conditioners (four-star and five-star).

Recommendations:

- **Large-scale adoption of efficient cooling appliances will be essential to providing the required thermal comfort in a low carbon manner.**
- The following measures might be taken to encourage the adoption of more efficient appliances.

Awareness generation:

- Awareness campaigns on the benefits of energy efficiency must constitute a major aspect of the outreach program. The prospective customers must be made to realize that **the more expensive price tag would be offset by quantifiable savings on energy costs.**

Incentivize adoption of efficient appliances:

- **Subsidies and financial incentives like rebate programs** that can help **offset the higher initial cost** can help drive up the adoption of more efficient technologies.

Promote passive cooling:

- Encouraging the use of passive cooling alternatives including energy-efficient building designs can help **provide the desired thermal comfort with reduced dependence on energy-intensive cooling technologies.**
 - Passive cooling is a building design approach that focuses on heat gain control and heat dissipation in a building in order to improve indoor thermal comfort with low or no energy consumption. This approach works either by preventing heat from entering the interior or by removing heat from the building.
 - Passive cooling options include augmenting **natural ventilation and employing evaporative, thermal insulation and shading methods.**

10. Embracing cryptocurrency

Context:

- Recently, El Salvador became the first country in the world to adopt bitcoin as legal tender.

- In this context, the **article argues for a more favourable approach towards cryptocurrency in India.**

Background:

India's stand on Cryptocurrency:

- Post-2010, the cryptocurrency market in India developed in a largely laissez-faire regulatory space and this has established a **substantial trading market for cryptocurrencies in India.**
- The **RBI had banned cryptocurrency trading in 2018**, based on concerns over the potential impact the cryptocurrencies could have on the financial stability in the economy.
 - These fears were based on cryptocurrencies' volatility, their susceptibility to hacking, and the fear that they could potentially facilitate criminal activities such as money laundering, terrorist financing and tax evasion.
- **The Supreme Court had asked the Centre in 2019 to frame policies for cryptocurrencies, and in 2020, struck down the curbs imposed by the RBI** while stopping short of commenting on the legal nature of cryptocurrencies.
 - The court reasoned that there were alternative regulatory measures short of an outright ban through which the RBI could have achieved its objective of curbing the risks associated with cryptocurrency trading.
- A **high-level inter-ministerial committee (IMC)** was constituted under the chairmanship of the economic affairs secretary on digital currencies. The government had expressed its openness to evaluate and explore new technologies, including cryptocurrencies, for improving governance.
- The **draft Cryptocurrency and Regulation of Official Digital Currency Bill, 2021** proposes to **criminalize all private cryptocurrencies** while also laying down the **regulatory framework for an RBI-backed digital currency.**
 - The purported reason for the prohibition of private cryptocurrencies is the **imprecise legal nature of cryptocurrencies in India** and the **lack of legal framework** for the regulatory bodies to directly regulate private cryptocurrencies.

Way forward:

Need for legal definition of cryptocurrency and a regulatory framework:

- The fact that cryptocurrency has no legal classification should not be the impetus to prohibit its use in India rather the RBI should come up with an appropriate regulatory framework for cryptocurrencies.

- The methodology adopted in countries like the U.K., Singapore and the U.S could offer valuable lessons for India in this regard.
 - **The U.K. has classified cryptocurrency as property** and this has helped pave the way for cryptocurrencies to be covered within a regulated legal framework of the economy.
 - **The amenability of cryptocurrency transactions to the contract law framework in Singapore** has helped establish a legal framework for cryptocurrency trading.
 - The **trade in cryptocurrency is taxed in the U.S.** which has helped in the oversight and regulation of cryptocurrency trading.

Balanced regulation:

- There is a need for a balanced regulation of the cryptocurrency which could allow private individuals the freedom to harness a powerful new technology like blockchain technology-based digital currency with appropriate regulatory standards.
- Such permissive regulation **recognises the freedom of choice given to people** for using a medium of exchange other than a central bank-backed fiat currency.
- Such an approach would be in line with the rising global trend of embracing cryptocurrencies that **permit the growth of the cryptocurrency market subject to certain safeguards.**

11. Cyberattacks reveal vulnerabilities in critical infrastructures

Civilian targets of cyberattacks

- Several high-profile cyberattacks were reported from the United States during the past several months.
- These attacks were all **primarily on civilian targets**, though each one was of critical importance.
- Obviously cyber, which is often referred to as **the fifth domain/dimension of warfare**, is now largely being employed against civilian targets.
- Most nations have been concentrating till date mainly on erecting cyber defences **to protect military and strategic targets**, but this will now need to change.

Challenges

- Defending civilian targets, and more so **critical infrastructure**, against cyberattacks such as **ransomware and phishing** is almost certain to stretch the capability and resources of governments across the globe.
- The **distinction between military and civilian targets** is increasingly getting erased and the consequences of this could be indeterminate.
- In the civilian domain, two key manifestations of the 'cat and mouse game' of cyber warfare today, are **ransomware and phishing**, including spear phishing.
- **Banking and financial services** were most prone to ransomware attacks till date, but **oil, electricity grids, and lately, health care**, have begun to figure prominently.
- Ransomware attacks have skyrocketed, with demands and payments going into **multi-millions of dollars**.
- India figures prominently in this list, being one of the most affected.
- **Compromised 'health information'** is proving to be a vital commodity for use by cybercriminals.
- All indications are that cybercriminals are increasingly targeting a **nation's health-care system** and trying to gain access to patients' data.
- The available data aggravates the risk not only to the individual but also to entire communities.
- Cybercriminals are becoming more sophisticated, and are now engaged in **stealing sensitive data** in targeted computers before **launching a ransomware attack**.
- Also, today's cybercriminals, specially those specialising in **ransomware and similar attacks**, are different from the ordinary criminals.
- Many are known to practise 'reverse engineering' and employ '**penetration testers**' to probe high secure networks.

Way forward

- The need to be aware of the nature of the cyber threat to their businesses and take adequate precautionary measures, has become extremely vital.
- **Cybersecurity** essentially hinges on **data protection**.
- As data becomes the world's most precious commodity, **attacks on data and data systems are bound to intensify**.
- With mobile and cloud computing expanding rapidly cybersecurity professionals are now engaged in building a '**Zero Trust Based Environment**', viz., zero trust on end point devices, zero trust on identity, and zero trust on the network **to protect all sensitive data**.
- Building **deep technology in cyber** is essential.

- New technologies such as **artificial intelligence, Machine learning and quantum computing**, also present new opportunities.
- Pressure also needs to be put on officials in the public domain, as also company boards, to carry out regular **vulnerability assessments** and create necessary **awareness of the growing cyber threat**.

Conclusion

The threat posed by the cyberattacks highlights the need for improved defences against actual, and potential, cyberattacks by all countries across continents.

12. The world is hardly wired for cyber resilience

Background:

- There have been a **series of high profile cyber attacks in recent months**.
 - The end of 2020 witnessed the **'SolarWinds' cyberattack** involving data breaches across critical wings of the U.S. government like defence, energy and state.
 - Early 2021 witnessed a **cyberattack by a Chinese group called Hafnium**. Thousands of U.S. organizations were hacked and remote control was gained over the affected systems.
 - Then there was the **ransomware attack on Colonial Pipeline** (which is the main supplier of oil to the U.S. East Coast) by Russia/East Europe-based cybercriminals, styled DarkSide. Colonial Pipeline had to pay out several million dollars as ransom to unlock its computers and release its files.
 - **A Russia-backed group, Nobellium, had launched a phishing attack** on 3,000 e-mail accounts, targeting USAID and several other organisations.
 - Recently **JBS SA**, the U.S. subsidiary of a Brazilian meat processing company, was the target of a **ransomware attack**.

Challenges:

Targeting critical civilian targets:

- Unlike the traditional approach to cyber warfare, **cyber attacks are now being employed against civilian targets of critical importance**. The fact that most nations have been concentrating mainly on cyber defences to protect military and strategic targets has left civilian targets vulnerable to attacks.
- Unlike previously where the banking and financial services were most prone to ransomware attacks, recently even oil, electricity grids, and health care are being increasingly targeted.

- Defending critical civilian targets against cyberattacks is almost certain to stretch the capability and resources of governments across the globe.

Increasing sophistication of the cybercriminals:

- The technical competence of cybercriminals has only increased. They have been employing advanced methods like '**penetration testers**' to probe high secure networks.
- **Zero day software vulnerabilities** are being increasingly used for cyber attacks such as **ransomware, phishing and spear phishing**.
 - **A zero-day is a computer-software vulnerability** unknown to those who should be interested in its mitigation. Until the vulnerability is mitigated, hackers can exploit it to adversely affect programs, data, additional computers or a network.
 - Ransomware is malware that employs encryption to hold a victim's information at ransom. A user or organization's critical data is encrypted so that they cannot access files, databases, or applications. A ransom is then demanded to provide access.
 - Phishing is a type of social engineering attack often used to steal user data, including login credentials and credit card numbers or to deploy malicious software on the victim's infrastructure like ransomware. It occurs when an attacker, masquerading as a trusted entity, dupes a victim into opening an email, instant message, or text message.
 - Spear phishing is the fraudulent practice of sending emails ostensibly from a known or trusted sender in order to induce targeted individuals to reveal confidential information.
- Cybercriminals are becoming more sophisticated in their modus operandi. They first steal sensitive data in targeted computers before launching a ransomware attack thus resulting in a kind of '**double jeopardy**' for the targeted victim.

Diversification of motivation for the attacks:

- The motivation for cyberattacks has also diversified beyond just **geopolitical and profits**, with '**insider threats**' due to discontent with the management or personal reasons also emerging as a possible threat.

Targeting of high value and vulnerable sectors:

- Notably, the number of **cyberattacks on healthcare systems has increased** and cybercriminals are increasingly trying to gain access to patients' data. The available data aggravates the risk not only to the individual but also to entire communities.

Challenges associated with data protection:

- With **data becoming valuable** in an increasingly digitized world, attacks on data and data systems are bound to intensify.
- More than three quintillion bytes of data are generated every day and several billion devices are interconnected to billions of endpoint devices and are exchanging petabytes of sensitive data, on the network. This is only bound to grow. **Ensuring data protection of this huge quantity of data is going to be a herculean task.**

Way forward:

Improve awareness and preparedness:

- Businesses need to be aware of the nature of the cyber threat to their businesses and take **adequate precautionary measures.**
- Officials in the public domain and also company boards need to carry out **regular vulnerability assessments and create necessary awareness of the growing cyber threat.**
- There is the need for improved defences against actual, and potential, cyberattacks by all countries across continents.

Zero trust-based environment:

- Cybersecurity professionals are now engaged in building a 'Zero Trust Based Environment', viz., zero trust on end point devices, zero trust on identity, and zero trust on the network to protect all sensitive data.
- Zero Trust Based environment technologies employ: software-defined solutions for **agile perimeter security, secure gateways, cloud access security, privileged access management, threat intelligence platforms, static and dynamic data masking**, etc.

Adopting deep technology:

- Building deep technology in cyberspace is essential. New technologies such as **artificial intelligence, machine learning and quantum computing** present new opportunities which need to be harnessed.

13. Planning for a biosecure future

Context:

- The article analyzes the **biosecurity concerns of synthetic biology**.

Synthetic biology:

- Synthetic biology is a field of science where **new organisms, biological parts and devices can be created and existing natural life forms can be redesigned**.
- Synthetic biology encompasses a broad range of methodologies from various disciplines, such as biotechnology, genetic engineering, molecular biology, molecular engineering, systems biology, membrane science, biophysics, chemical and biological engineering, electrical and computer engineering, control engineering and evolutionary biology.
- Due to more powerful genetic engineering capabilities and decreased DNA synthesis and sequencing costs, the **field of synthetic biology is rapidly growing**. There has been a rapid rise in synthetic biology in the last two decades.

Significance of synthetic biology:

- Genetic engineering is finding increasing application in the area of **medical treatment** by re-engineering cells. Genetic engineering is being used to modify plants to improve resistance to pests in crops and to induce desirable qualities like resistance to droughts, waterlogging and developing faster-growing dwarf varieties. This can help ensure **food security**.

Threat posed by synthetic biology:

- While synthetic biology can be used for human betterment, there are many risks associated with the technology which must be addressed before it becomes widely accessible.
 - Much is still to be understood of the possible **long term implications of genetic engineering**.
 - Insufficiently trained staff, inadequately safeguarded facilities, and lack of proper protocols can also lead to **accidental leaks of experimental pathogens**.
 - There is also the **possibility of deliberate misuse**. A planned attack using highly infectious pathogens synthetically engineered in a lab could have a devastating impact on the target country.

Lacunae in current approach to biosecurity:

Lack of focus on biosecurity:

- As against the focus on the threat posed by weapons of mass destruction like nuclear and chemical weapons, there has been **very little focus on threats emanating from biological sources**.
- Nuclear weapons, facilities and material are tightly controlled through strong treaties and institutional arrangements. Unlike this, the fields of biology or synthetic biology are not regulated internationally despite growing military interest in synthetic biology applications and their potential misuse.

Ineffectiveness of the BTWC:

- There is the **Biological and Toxin Weapons Convention (BTWC) of 1972** which regulates bio-weapons, however, it suffers from the following shortcomings.
 - There is **no implementing body** to oversee this convention which almost renders the convention ineffective.
 - The BTWC also **does not have a verification clause, nor does it have clearly laid down rules and procedures to guide research** in the concerned field.
 - The BTWC while bans bio-weapons, **research for medical and bio-defence purposes are allowed**. This is liable for misuse since bio-defence research routinely uses pathogens and toxins for experimental purposes, processes, know-how and outcomes of bio-defence research could potentially be used to create bio-weapons.
 - Initiatives to enhance the transparency of treaty-relevant biological facilities and activities to help deter violations of the BTWC have not been accepted by the member states.

India's vulnerability:

- India remains grossly underprepared in the domain of biosecurity.
 - There is **poor disease surveillance** to detect any threat in its early stages.
 - **Insufficient coordination among various government departments** dealing with biosecurity issues.
 - Implementation of biosafety guidelines is the responsibility of the Science and Technology Ministry and the Environment Ministry. However, labs dealing with biological research are set up under the Indian Council of Medical Research and the Indian

Council of Agricultural Research, which are under the Ministries of Health and Agriculture, respectively.

- The **bad state of the healthcare system** renders India ineffective in tackling any possible outcomes of a bio attack.
- India, with its **porous borders and ill-trained border control institutions**, is ill-prepared for defending against pathogens or dangerous biological organisms or agents arriving from abroad.

Conclusion:

- The COVID-19 pandemic and its devastating impact have challenged the traditional imagination of national security with even the most developed and rich countries crumbling under the impact of the pandemic.
- The COVID-19 pandemic should serve as a wake-up call to recognize the **biosecurity concerns of synthetic biology** and the national security studies henceforth will have to consider the threat posed by synthetic biology.
- COVID-19 pandemic is an indication of the potential impact of bio-weapons that can come from labs.
- In fact, all exponential technologies such as synthetic biology, artificial intelligence and nanotechnology have to be understood and regulated to counter any unforeseen national and global security implications.
 - Exponential technologies can be defined as those technologies that allow change at an accelerated speed.
- The **upcoming November 2021 BTWC review conference** must take stock of the advances in the field of synthetic biology, address the thinning line between biotechnology research and bio-weapons research, and consider international measures for monitoring and verification.

14. Bitcoin push

Context:

- El Salvador became **the world's first sovereign nation to adopt bitcoin cryptocurrency as legal tender**

Background:

Cryptocurrency:

- A cryptocurrency is a digital asset designed to work as a medium of exchange.

- Cryptocurrencies typically use decentralized control as opposed to centralized digital currency and central banking systems. Cryptocurrencies are **built on the back of blockchain technology, a system of distributed, cryptographically-secured account keeping.**
- **Bitcoin is the first decentralized cryptocurrency.**

Status of cryptocurrencies:

- Most countries have warned their citizens against investing in cryptocurrencies and transacting in them.
- Some countries have tried to use the blockchain technology to create government-sanctioned digital currencies. China, a hub of cryptocurrency activity, has issued a **digital Yuan** based on blockchain technology. The Bank of England has also proposed a **digital Sterling.**
- The RBI had virtually banned cryptocurrency trading in 2018. The Supreme Court had asked the Centre in 2019 to frame policies for crypto, and in 2020, struck down the curbs imposed by the RBI. **India has allowed the treatment of cryptocurrencies as commodities.**
- Bitcoin is the first and biggest of decentralized cryptocurrencies, which are **increasingly becoming mainstream.** Ethereum, Tether, and Binance Coin are some of the many others that have emerged after Bitcoin.
- As per available reports by the end of 2021, at least 4-5 more nations will adopt bitcoin as their sovereign acceptable currency.

Details:

- As per the new law of El Salvador, Bitcoin, as a legal tender, can be used in any transaction and businesses will have to accept that payment form.
- The law also states that tax contributions can be paid via Bitcoin and exchanges in the cryptocurrency will not be subject to capital gains tax.
- Under the new law, El Salvador will promote necessary training and mechanisms so that the population can access bitcoin transactions. However, those who do not have access to technologies that can carry out bitcoin are excluded from being required to accept it as payment.
- The **bitcoin-dollar exchange rate will be set by the market.**

Significance/Relevance of the move:

Reduce the cost of remittances:

- El Salvador's economy is heavily reliant on remittances. According to World Bank data, remittances made up almost \$6 billion in 2019, which was **about 20% of the country's GDP.**

- A large chunk of that \$6 billion is lost to intermediaries who take a cut of the financial transactions in dollars.
- The adoption of Bitcoins will not only help El Salvadoreans **save on transaction fees of banks and agencies but also offers a faster method** to transfer such remittances.

Mitigate the negative effects of being a dollarized economy:

- El Salvador is among the few countries in the world that don't have their own fiat currency, and uses the US dollar as a legal tender. **El Salvador fully 'dollarised' its economy in 2001.**
 - There are 14-15 countries, which don't have their currency and they typically use the US dollar.
- One of the downsides of a dollarized economy is that it gets linked to the monetary policies of the Federal Reserve of the U.S.
- **The U.S. Federal reserve has been increasingly setting rates that has been benefitting the U.S. economy but was harming the economic stability of El Salvador** and Bitcoin was being adopted in order to mitigate these negative impacts.
- Bitcoin or any other form of cryptocurrency is as good as the dollars for such dollarized economies.

Boost financial inclusion:

- El Salvador's decision to make bitcoin a legal tender will boost financial inclusion in their country as majority of the population does not have access to formal banking channels.

Impetus to economy:

- The government also believes that the move will **boost investments, tourism and innovation and bring economic development for the country.**

Concerns:

- Experts have warned of the following concerns with the adoption of Bitcoin as a legal tender.

Decentralized control:

- Given the essentially decentralized control approach associated with cryptocurrencies like the Bitcoin as against the traditional centralized digital currency and centralized banking systems, they **render government**

monetary policies ineffective. This would rob the administration of a vital tool to control the economy.

- They are even deemed a threat to the official currency and monetary system.

Anonymity:

- Governments and economic regulators across the world are wary of private cryptocurrencies also because of the **lack of a central issuing authority or a central validating agency for transactions.**
- Hence these currencies can exist and thrive outside the realm of authority and regulation.
- Their anonymous nature also goes against **global money-laundering** Its use in **illegal online marketplaces that deal with drugs and child pornography** has been well-documented.

Security risk:

- Bitcoin exchanges are digital and therefore **vulnerable to hackers, operational glitches, and malware.**
- By targeting and hacking a cryptocurrency exchange, hackers can gain access to thousands of accounts and digital wallets where the cryptocurrencies are stored.
 - Example- **Gox hacking incident in 2014**, which saw the Japanese exchange close down after millions of dollars in bitcoin were stolen.

High volatility:

- Cryptocurrencies as commodities have been highly volatile.
- They have witnessed **massive swings in their values.** After its introduction in 2009, Bitcoin saw its biggest gain in value last year, having started 2020 at \$7,200 per coin and touching \$65,000 in April of 2021, before falling to \$30,000 in May.
- The move to make Bitcoin a legal tender brings financial risks to ordinary Salvadorans and their country, as the cryptocurrency gains and loses huge amounts of value in a short duration.

Carbon footprint:

- Another major problem associated with crypto currencies is the increasing energy use associated with them.
- **The 'mining' of Bitcoin**, where individuals or companies set up powerful systems to support the blockchain network, for which they are rewarded in the currency, consumes a lot of energy.

- Bitcoin production is estimated to generate between 22 and 22.9 million metric tonnes of carbon dioxide emissions a year. This is a major concern given the current efforts underway to mitigate GHG emissions in line with the Paris climate commitments.

Measures being taken to mitigate some of the challenges:

- The El Salvador government plans to protect citizens from the volatility of Bitcoin prices by **guaranteeing quick convertibility to dollars**.
- The government will enable the purchase of Bitcoins from people unwilling to hold Bitcoins through a **\$150-million trust** created at the country's development bank.
- The **use of Renewable energy for Bitcoin mining facilities** will help address the concerns associated with the large carbon footprint associated with Bitcoins.

15. 'Operation Olivia' to the rescue of Olive Ridleys

Context:

- Indian Coast Guard's "Operation Olivia".

Olive Ridley turtle:

- The olive ridley sea turtle (*Lepidochelys olivacea*), also known commonly as the Pacific ridley sea turtle, is a species of turtle in the family Cheloniidae.
- The species is **one of the most abundant of all sea turtles** found in the world.
- It is **primarily found in warm and tropical waters, primarily in the Pacific and Indian Oceans**, but also in the warm waters of the Atlantic Ocean.

Nesting habits:

- Mating occurs in the offshore waters of the breeding grounds and females then come ashore to nest. **Sea turtles generally return to their natal beach**, or where they were born, to lay eggs as adults.
- The Olive Ridley have a unique nesting habit. They indulge in mass nesting called
 - An arribada is a mass-nesting event when thousands of turtles come ashore at the same time to lay eggs on the same beach.
- Breeding and nesting of the Olive Ridley Turtles is observed **from November to December**.

Threat:

- Heavy **predation of Olive Ridley turtle eggs** by dogs and wild animals
- **Dense fishing activity** along the coasts of Andhra Pradesh, Odisha and Bengal, especially ocean-going **trawlers, mechanized fishing boats and gill-nettors** pose a severe threat to turtles.
- **Beach soil erosion**

Conservation status:

- The Olive Ridley is listed as **vulnerable** under the International Union for Conservation of Nature's Red list.
- It is included in **Schedule I of the Indian Wildlife Protection Act, 1972**, and in the **Appendix I of the Convention of International Trade in Endangered Species of Wild Fauna and Flora**.

Details:

- The annual "Operation Olivia" helps protect Olive Ridley turtles as they congregate along the Odisha coast for breeding and nesting.
 - There are three beaches along the Odisha coast including **Gahirmatha, the mouth of the Devi river, and Rushikulya**.
- The Coast Guard carries out **round-the-clock surveillance** from November till May utilising Coast Guard assets and helps **enforce laws near the rookeries**
- Measures taken include the enforcement of the following laws near the rookeries.
 - The compulsory use of **turtle excluder devices (TED) by trawlers** in the waters adjoining nesting areas
 - **Prohibiting the use of gill nets** on turtle approaches to the shore

Curtailling turtle poaching.

16. Counting the dead

An important characteristic of an infectious disease, particularly one caused by a novel pathogen like SARS-CoV-2, is its severity and its ability to cause death. In the backdrop of discrepancies recorded in reporting of COVID-19 related deaths, the article talks about excess death analysis as one of the best possible ways of estimating the count of COVID-19 deaths.

Importance of fatality rate:

- The real-time mortality impact of the COVID-19 pandemic is an **important statistical measure to guide policy responses**.
- Fatality rates help in **understanding the severity of a disease**.

- It helps determine and identify at-risk populations.
- It also acts as an **indicator in evaluation of quality of healthcare.**

Issue:

- Measuring the real-time mortality is **not an easy task.**
- In January 2021, **based on excess deaths data in Europe and the American continents, WHO had estimated that actual deaths were at least 1.6 times over the official count.**
- The **problem of under-counting** is largely because **patients who die due to cardiovascular issues among others even after apparent recovery from COVID-19 are not tracked and registered as COVID-19-related deaths.**
- Estimations of the actual count of the dead are difficult to obtain in States such as Bihar and Uttar Pradesh, where **public health systems are poor and neither the infections nor deaths have been effectively tracked, especially in rural areas, where many have died outside of hospitals.**

Details:

- Bihar is among the States in India with the lowest civil registration of deaths, with barely 34.1% of the dead being registered, according to the Civil Registration System (CRS) report of 2018.
- In Bihar, the **reported COVID related death toll suddenly increased by 72% following a Health Department review after the Patna High Court found discrepancies.**
- Following criticisms about the methodology to evaluate whether a death was related to COVID-19, the **Kerala health administration in the districts will now audit deaths** rather than a State-level audit committee.

Way Forward – Excess deaths analysis:

- Excess deaths analyses in Gujarat, Chennai and Kolkata suggest that they were nearly 10, five and seven times higher, respectively, than reported fatalities during the second wave.
- **Measuring excess deaths is the best possible way to estimate the count of COVID-19 deaths.**
- It can be arrived at by calculating the excess deaths during the given period when the pandemic has raged, **compared to the baseline mortality occurring in similar time frames before the pandemic.**
- The exercise works best if death registrations are relatively high.
 - **Registration of deaths has improved to 76%** according to Civil Registration System (CRS) 2018.
- If the **CRS datasets**, maintained by the Office of the Registrar General and Census Commissioner of India besides State registrars and municipal officials

with a good quality of registration, are made available, it would enable better estimation of the actual mortality figures.

Conclusion:

Differences in mortality between groups of people and countries are important **proxy indicators of relative risk of death that guide policy decisions** regarding scarce medical resource allocation. Only **honest reporting of the deaths will help provide better mitigation strategies.**

17. Making peace with nature

Context:

- The World Environment Day 2021 celebrations witnessed the launch of the **UN Decade on Ecosystem Restoration 2021 - 2030.**

Background:

- During the Bonn Challenge 3.0 high-level meeting in 2018, El Salvador announced plans to propose a United Nations Decade on Ecosystem Restoration 2021–2030, aimed at boosting existing efforts to restore degraded ecosystems.
 - The **Bonn Challenge aims to restore 350 million hectares of degraded ecosystems globally by 2030.**
- Subsequently in 2019, the UN General Assembly officially adopted the resolution declaring 2021–2030 the UN Decade of Ecosystem Restoration.

Environmental degradation:

- Environmental degradation is the deterioration of the environment through **depletion of resources** such as quality of air, water and soil; the **destruction of ecosystems**; habitat destruction; the **extinction of wildlife; and pollution.**
- Ecosystems and the environment are being degraded at an unprecedented rate.
- Humanity is facing a **“triple environmental emergency” of biodiversity loss, climate disruption and escalating pollution.**

Effect on human beings:

- Environmental degradation is one of the ten threats officially cautioned by the high-level panel on Threats, Challenges and Change of the United Nations.
- Environmental degradation leads to the **reduction of the capacity of the environment to meet social and ecological objectives and needs.**
 - The degradation of land and marine ecosystems **undermines the well-being of 3.2 billion people** and costs about 10 per cent of the annual global gross product in **loss of species and ecosystems services.**
 - Key ecosystems that deliver numerous services essential to food and agriculture, including **supply of freshwater**, protection against hazards and provision of habitat for species such as fish and pollinators, are declining rapidly.
 - Currently, about 20 per cent of the planet's vegetated surface shows **declining trends in productivity with fertility losses** linked to erosion, depletion and pollution in all parts of the world. By 2050 degradation and climate change could reduce crop yields by 10 per cent globally and by up to 50 per cent in certain regions.
- The COVID-19 pandemic is a direct result of the degradation of natural areas, species loss, and exploitation. The clearance of forests has led to zoonotic pathogens more frequently jumping from wildlife to humans, creating **public health emergencies.**

Ecosystem restoration:

- Ecosystem restoration is defined as a process of reversing the degradation of ecosystems, such as landscapes, lakes and oceans to **regain their ecological functionality**; in other words, to **improve the productivity and capacity of ecosystems** to meet the needs of society.
- Ecosystem restoration would focus on re-establishing ecological integrity.
- This can be done by allowing the natural regeneration of overexploited ecosystems or by planting trees and other plants or by adopting soil enhancement measures or improved and sustainable management practices.

UN Decade on Ecosystem Restoration:

- The UN Decade on Ecosystem Restoration aims **to prevent, halt and reverse the degradation of ecosystems on every continent and in every ocean.**
- It is a **joint initiative by the UN Environment Programme and the UN Food and Agriculture Organization.**
- The UN has called for the restoration to nature of a total area the size of China.
- Ecosystem restoration promoted through this UN Decade takes a **multi-functional landscape approach**, looking at the mosaic of interdependent land

uses in which ecological, economic, social, and development-based priorities can find convergence, balance, and complementarity.

- As part of the efforts towards ecosystem restoration, there would be an emphasis on building a strong, **broad-based global movement** to facilitate global cooperation for the restoration of degraded and destroyed ecosystems. The initiative will aim to enhance cooperation and resource mobilization to increase the flow of financial resources, technologies, knowledge, and capacity building to countries and jurisdictions working towards ecosystem restoration.

Significance of the effort:

- Ecosystem restoration benefits people and nature.

Counter triple environmental emergency:

- The initiative will help counter the 'triple environmental emergency' that the world faces today of climate disruption, biodiversity loss and escalating pollution.
- The envisaged efforts could contribute about a third of the needed climate change mitigation, as well as protect nature and biodiversity. Ecosystem restoration could remove up to 26 gigatons of greenhouse gases from the atmosphere by **reviving natural carbon stores**.
- The initiative can help halt the collapse of biodiversity by **rebuilding homes for wildlife by restoring forests**.

Move towards a more sustainable future:

- The envisaged efforts will help put the world on track for a sustainable future.
- **Mainstreaming ecosystem restoration in policy and planning** will help address current developmental challenges due to land degradation, biodiversity loss, and climate change vulnerability through climate change mitigation and adaptation.

Benefits to humans:

- Ecosystem restoration approach offers significant benefits to humans.
 - Ecological integrity will help **ensure food security and water supply for humans** and will thus help manage the associated risks of conflict and migration.
 - A well-planned ecosystem restoration approach offers an **unparalleled opportunity for job creation**. The enhanced opportunities for livelihood can help end poverty.

- The initiative also makes economic sense given that the restoration of 350 million hectares of degraded terrestrial and aquatic ecosystems by 2030 could **generate US\$9 trillion in ecosystem services**. The benefits obtained from ecosystem generation on average exceed the costs of the initial investment tenfold, whereas the cost of inaction is at least three times the cost of ecosystem restoration.

Raise awareness:

- The initiative will help **raise awareness of the importance of functional ecosystems for human well-being** and productive activities, local development and the economic sustainability of society.

Link with other initiatives:

- Ecosystem restoration is recognized as a key component in achieving targets under some important international conventions and agreements.
 - Ecosystem restoration is fundamental to achieving the **Sustainable Development Goals**, mainly those on climate change, poverty eradication, food security, water and biodiversity conservation.
 - It would also be an important pillar of international environmental conventions, such as the **Ramsar Convention on Wetlands**, the Strategic Plan for Biodiversity 2020 and its **Aichi Biodiversity Targets**, the United Nations Framework Convention on Climate Change and **Paris Agreement**, the **United Nations Convention to Combat Desertification** and its target of Land Degradation Neutrality
 - Planned activities during the UN Decade on Ecosystem Restoration are also designed to contribute to the **Bonn Challenge** to restore degraded and deforested land.

Link with health:

- **Healthier ecosystems** and a healthier respect for the wild spaces of our world will give us a healthier planet and healthier people.
- Ecosystem restoration is a necessary intervention to counter the increasing number of zoonotic pathogens jumping onto humans. The recent COVID-19 pandemic is an illustration of this.

Steps to be taken:

GHG mitigation:

- There must be a concerted effort to **reduce carbon dioxide emissions as part of climate change mitigation efforts**.

- Globally the net carbon dioxide emissions should reduce by 45% by 2030 compared to 2010 and must reach net-zero emissions by 2050 to be able to achieve the 1.5°C Paris Agreement target.
- This needs the **transformation of energy systems, land use, agriculture, forest protection, urban development, infrastructure, and lifestyles.**

Conserving biodiversity:

- The ecosystem restoration approach must be aligned with conserving and restoring biodiversity given the **critical importance that biodiversity plays in maintaining ecological balance.**

More sustainable approach:

- There is an urgent need to **transform the economic, financial and production systems towards sustainability.**
- This would require eliminating environmentally harmful subsidies, considering natural capital in calculating the wealth of the nation and **investing in low-carbon and nature-friendly technologies.** Such an approach will help minimize air and water pollution and waste.
- The world should work towards creating food systems that work with nature and reduce waste.
- The government has to incentivize financial flows and investment patterns towards sustainability by appropriate policy measures and fiscal support.

Participative approach:

- Transformational ecosystem restoration requires a participative approach.
- The initiative will only succeed if everyone plays a part. While efforts from national governments are vital, everyone has a role to play, including the private sector, NGOs and individuals.

Conclusion:

- In the light of the “triple environmental emergency” that the world faces today, **reconciling humanity with nature is essential.**
- There has never been a more urgent need to restore damaged ecosystems.
- Ecosystems support all life on Earth. **The healthier our ecosystems are, the healthier the planet – and its people.**

Additional information:

- The **New York Declaration on Forests (NYDF)** is a voluntary and non-binding international declaration to take action to **halt global deforestation by 2030**.
- In 2019, India raised its ambition for restoration, promising an increase in **restored degraded land** from 21 to **26 million hectares by 2030 under the Bonn Challenge**.

18. Centre announces hike in MSP for paddy, pulses, oilseeds

Context:

The Central government has **hiked the minimum support price (MSP)** for common paddy for the coming Kharif season.

Details:

- The decision was taken by the **Cabinet Committee on Economic Affairs**.
- It is about 4% higher than last year's price.
- The Centre said the higher rate of returns being promised for urad, tur and oilseeds was a deliberate policy move.
 - The **differential remuneration** is aimed at encouraging **crop diversification**.
- Concerted efforts were made over the last few years to **realign the MSPs in favour of oilseeds, pulses and coarse cereals**.
 - This was to encourage farmers to shift to larger area under these crops and adopt the best technologies and farm practices, to correct the demand-supply imbalance.
- Added focus on **nutri-rich nutri-cereals** is to **incentivise its production in the areas where rice-wheat cannot be grown without long term adverse implications for groundwater table**.

What is minimum support price ?

- The MSP is the **rate at which the government purchases crops from farmers**, and is based on a calculation of at least **one-and-a-half times the cost of production incurred by the farmers**.
- It is a form of **government intervention to insure the farmers against a steep decline in the prices of their goods** and to help them prevent losses.
- The **Cabinet Committee of Economic Affairs announces MSP** for various crops at the beginning of each sowing season **based on the recommendations of the Commission for Agricultural Costs and Prices (CACP)**.

- The CACP takes into account **demand and supply, the cost of production and price trends in the market** among other things when fixing MSPs.
- The government reports the MSP towards the **beginning of both cropping seasons i.e. Rabi and Kharif.**
- Read more on the Minimum Support Price (MSP) in the link.

Issue:

- Farmers are upset with the three farm bills passed by the government, with one of the reasons being that none of them mentions anything about MSP.
- While the government does declare the MSP twice a year, there is **no law that makes MSP mandatory.**
- The protesters have been **asking for a statutory entitlement for all farmers** so that a **remunerative MSP can be ensured for all farmers.**
- The farmers **want the government to guarantee an MSP when they will be dealing with private players.**

19. Encouraging accord

- In the context of the Finance Ministers from the Group of Seven (G7) nations having reached a landmark agreement on setting a **global minimum corporate tax rate**, this article discusses the **potential advantages** of such a policy.

Details:

- The Group of Seven nations have backed a **minimum global corporation tax rate of at least 15%.**
- They also seek to put in place measures to ensure that taxes are paid in the countries where businesses operate based on the **principle of 'Significant Economic Presence'.**

How would a global minimum tax work?

- The global minimum tax rate would **apply to overseas profits of a multinational.**
- The envisaged framework allows individual governments to set whatever local corporate tax rate they want.

- But if companies pay lower rates in a particular country, their **home governments could “top-up” their taxes to the minimum rate**, thus eliminating the advantage of shifting profits.

Reasons for the move:

- A global minimum corporate tax will allow the major economies to **discourage multinationals from shifting profits – and tax revenues – to low-tax countries.**
- This proposal from the major economies aims to reduce tax base erosion without putting their firms at a financial disadvantage, allowing competition on innovation, infrastructure and other attributes.

Significance:

Reduce tax base erosion:

- This measure will **help close cross-border tax loopholes** used by some of the world’s biggest companies, thus will help **limit base erosion and profit sharing (BEPS).**
- Increasingly, income from intangible sources such as drug patents, software and royalties on intellectual property has migrated to the low tax jurisdictions, allowing companies to avoid paying higher taxes in their traditional home countries.
 - As per some estimates, countries are losing \$427 billion every year to tax havens. **India suffers an annual loss of \$10.3 billion from global tax abuse.**

In tune with changed pattern of economy:

- This agreement marks a much necessary reform of the global tax system to make it fit for the **current global digital age** where **cross-border digital services are gaining prominence.**

End the so called race to the bottom and its negative consequences:

- The introduction of a global minimum corporate tax will contribute to ending the decades-long **“race to the bottom on corporate tax rates”**, in which countries have resorted to ultra-low tax rates and tax exemptions to lure multinationals companies to invest.
- Such measures have **cost such countries hundreds of billions of dollars** whereas the corporate entities have only grown richer.

Form the basis of a global pact:

- This landmark agreement could form the basis of a worldwide deal.
- **The Organization for Economic Cooperation and Development** has been coordinating tax negotiations among 140 countries on **rules for taxing cross-border digital services and curbing tax base erosion, including a global corporate minimum tax**. The OECD and G20 countries aim to reach consensus on both by mid-year.

Move towards more equitable taxing rights:

- The agreement has committed to reaching an equitable solution on the allocation of taxing rights. It will focus on **protecting the interest of the market countries** by awarding such countries certain degree of taxing rights on the profits of the multinational enterprises.
- This will help ensure that MNCs would pay taxes where they operate and record their profits from based on the concept of 'Significant Economic Presence'.

Challenges:

- Any final agreement could have major repercussions for low-tax countries and tax havens and is bound to be opposed by such countries.
- Though there seems to be broad agreement on the framework of a global minimum corporate tax, there continue to be **differences over the rate** of such a tax.
- The **inclusion of investment funds and real estate investment trusts** under such a system could also lead to some differences during the negotiations

20. CHIME telescope yields unprecedented results

Context:

Scientists with the **Canadian Hydrogen Intensity Mapping Experiment (CHIME) Collaboration** have assembled the **largest collection of fast radio bursts (FRBs)** in the telescope's first FRB catalogue.

Fast Radio Bursts (FRB):

- FRBs are **oddly bright flashes of light, registering in the radio band of the electromagnetic spectrum, which blaze for a few milliseconds** before vanishing without a trace.
- FRBs have been spotted in various and distant parts of the universe, as well as in the Milky Way.
- Their **origins are unknown** and their **appearance is highly unpredictable**.

Details:

- CHIME collaboration includes researchers at the **Pune-based Tata Institute for Fundamental Research (TIFR)** and the **National Centre for Radio Astrophysics (NCRA)**.
- It is a **large stationary radio telescope in British Columbia, Canada**.
- CHIME **comprises four massive cylindrical radio antennas** located at the Dominion Radio Astrophysical Observatory, operated by the National Research Council of Canada.
- The telescope receives radio signals each day **from half of the sky as the Earth rotates**.
- CHIME **focuses incoming signals using a 'correlator'**.
 - Correlator is a **powerful digital signal processor** that can work through huge amounts of data, at a rate of about **seven terrabytes per second**.
 - This enables CHIME to reconstruct **and look in thousands of directions simultaneously**, helping it detect FRBs a thousand times more often than a traditional telescope.

Observations:

- The **telescope has detected 535 new fast radio bursts** in its first year of operation itself (2018-2019).
- Most bursts likely originated from far-off sources within distant galaxies.
- Scientists have recorded **FRBs that repeat and those that don't**.
- **Repeating FRBs last slightly longer and emit more focused radio frequencies** than bursts from single, non-repeating FRBs.
- They are **evenly distributed in space**, seeming to **arise from all parts of the sky**.
- Scientists calculated that **bright fast radio bursts occur** at a rate of about **800 per day** across the entire sky.

Significance:

- **Catching sight of an FRB is considered a rare thing in the field of radio astronomy**.
- Prior to the CHIME project, radio astronomers had only caught sight of around 140 bursts in their scopes since the **first FRB was spotted in 2007**.
- CHIME project has **nearly quadrupled the number of fast radio bursts discovered** to date.
- With more observations, astronomers hope to find out their **extreme origins and properties**.

- They plan to use the bursts, and their dispersion estimates, to map the distribution of gas throughout the universe.

21. Rengma Nagas demand autonomous council

Context:

The Rengma Nagas in Assam have written to Union Home Minister **demanding an autonomous district council.**

Background:

- Recently, an announcement was made that the **Central and State governments would upgrade the Karbi Anglong Autonomous Council (KAAC) into a territorial council.**
- The **National Socialist Council of Nagaland (NSCN-IM)** has said that the proposed plan is **not acceptable as it alienates the ancestral land of the Rengma Nagas in Assam.**
- The NSCN-IM asserted that Karbi Anglong, earlier known as **Rengma Hills**, was a victim of an aggressive influx of outsiders for vested interests.
- It highlighted that **the Rengma issue was one of the important agendas of the Indo-Naga political talks.**

Why are the Rengma Nagas demanding an autonomous district council?

- Rengma Nagas are demanding a separate legislative seat for Rengmas.
- The Rengma Naga Peoples' Council (RNPC) said that the **Rengmas were the first tribal people in Assam to have encountered the British in 1839**, but the existing Rengma Hills was eliminated from the political map of the State and replaced with that of Mikir Hills (now Karbi Anglong) in 1951.
- It asserted that **during the Burmese invasions of Assam in 1816 and 1819, it was the Rengmas who gave shelter to the Ahom refugees.**
- It said that the **Rengma Hills was partitioned in 1963 between Assam and Nagaland** at the time of the creation of Nagaland State and the **Karbis, who were known as Mikirs till 1976, were the indigenous tribal people of Mikir Hills.**
 - Therefore, the Rengma Hills and Mikir Hills were two separate entities till 1951. **Karbis have no history in the Rengma Hills.**
- **More than 3,000 Rengma Nagas were forced to relocate** to relief camps in 2013 after several people were killed in a series of attacks following a **call given by a Karbi insurgent group.**

- People who are presently living in Rengma Hills are from Assam, Arunachal Pradesh and Meghalaya. They do not know the Karbi language of Karbi Anglong.

What are Autonomous District Councils?

- As per the **Sixth Schedule of the Indian Constitution**, four states viz. Assam, Meghalaya, Tripura and Mizoram contain Tribal Areas which are different from the Scheduled Areas.
- Though these areas fall within the executive authority of the state, **provision has been made for the creation of the District Councils and regional councils for the exercise of certain legislative and judicial powers.**
- **Each district is an autonomous district and Governor can modify/divide the boundaries of the said Tribal Areas by notification.**
- In Assam, there are **3 Autonomous Councils under the Sixth-Schedule** of the Indian Constitution.
 - Bodoland Territorial Council
 - Dima Hasao Autonomous District Council
 - Karbi Anglong Autonomous District Council

22. 'New IT rules only to tackle misuse of social media, offer redressal forum'

Context:

Information Technology and Law Minister Ravi Shankar Prasad's comments on Information Technology (Guidelines For Intermediaries And Digital Media Ethics Code) Rules, 2021.

Background:

- Information Technology (Guidelines For Intermediaries And Digital Media Ethics Code) Rules, 2021 was enacted by the government in February 2021.

New Information Technology Rules

The new Rules have been passed under Sections 69A(2), 79(2)(c) and 87 of the Information Technology Act, 2000. These new rules supersede the previously enacted Information Technology (Intermediary Guidelines) Rules 2011.

- The Rules aim to provide a robust complaint mechanism for the users of social media and over-the-top (OTT) platforms to address their grievances.
- They place special emphasis on the protection of women and children from sexual offences on social media.

- The rules stress the point that online content publishers and social media intermediaries should follow the Constitution of the country and subject themselves to domestic laws.
- With these rules, India joins other international regimes that have provisions for digital media regulation and provides a comprehensive mechanism for the protection of digital media consumers.

IT Rules Background

In 2018, the Supreme Court had observed that the Indian Government may frame necessary guidelines to eradicate child pornography, rape and gangrape imageries, videos and sites in content hosting platforms and other applications.

- In 2020, an Ad-hoc committee of the Rajya Sabha submitted its report on the issue of social media pornography and its effect on children and society as a whole. The report recommended tracing the originator of such content.
- In 2020, the GOI also brought OTT platforms under the ambit of the Information and Broadcasting Ministry.

New Guidelines for Social Media Intermediaries

The new rules classify social media intermediaries into two categories:

1. Social media intermediaries
2. Significant social media intermediaries

The above classification is based on the user size and once it has been defined through the notification of the Government, it would act as the threshold between the two. This is because there are additional compliance measures for significant social media intermediaries given the large number of users and the volume of content they process.

What are internet intermediaries?

Internet intermediaries can be described as entities that facilitate access to the internet or services on the internet (Association Progressive Communications 2014). For example, internet service providers, social media networks, search engines, etc. Generally, the intermediaries adopt a passive approach to the content they provide or host (unlike book publishers). Since they generally do not have editorial control over the content, countries are encouraged to enact safe harbour protections which offer immunity to intermediaries from criminal liability. In India, the safe harbour provisions have been defined under Section 79 of the IT Act.

- Due diligence to be followed by intermediaries under the new rules

- According to the new rules, in case due diligence is not followed by the intermediary, the safe harbour provisions would not apply to them.
- Mandatory grievance redressal mechanism
 - Intermediaries shall appoint a Grievance Officer to deal with complaints and share the name and contact details of such officers.
 - This officer should acknowledge the complaint received within 24 hours and resolve the issue within 15 days.
- Ensuring online safety and dignity of users
 - Intermediaries should remove or disable, within 24 hours of the complaint received, content that displays partial or full nudity, sexual act, morphed images, etc.
 - Complaints of such nature can be filed either by individuals or any person on behalf of the individuals.
- Additional due diligence for significant social media intermediaries
 - They have to appoint a Chief Compliance Officer, a Nodal Contact Person and a Resident Grievance Officer, and all these officers should be Indian residents.
 - They should publish a monthly compliance report detailing the complaints received.
 - Establishing the identity of the originator of the message/content
 - Such intermediaries offering services chiefly in the nature of messaging shall enable identification of the first originator of the information.
 - The purpose of this identification is for the prevention, detection, investigation, prosecution or punishment of an offence related to sovereignty and integrity of India, the security of the State, friendly relations with foreign States, or public order, or in relation to rape, sexually explicit material or child sexual abuse material punishable with imprisonment for a term of not less than five years.
 - Here, the social media intermediaries offering messaging services will have the responsibility to help law enforcement agencies identify and track the first originator of any contentious or problematic information.
 - This can only be executed through an order of a competent court or the Competent Authority under Section 69 of the Act and must only be employed as a measure of last resort.
- Unlawful information removal
 - An intermediary upon receiving actual knowledge in the form of an order by a court or being notified by the appropriate govt. or its agencies through authorized officer should not host or publish any information which is prohibited under any law in relation to the

interest of the sovereignty and integrity of India, public order, friendly relations with foreign countries, etc.

New Guidelines for OTT Platforms, News Publishers & Digital Media

Over-the-top (OTT) Platforms

- The new rules call OTT platforms 'publishers of online curated content'.
- They would have to self-classify the content into five categories based on age.
 - U (Universal)
 - U/A 7+
 - U/A 13+
 - U/A 16+
 - A (Adult)
- OTT platforms would be required to provide parental lock systems for content classified U/A 13+ or higher, and have age verification mechanism for content classified as 'Adult'.
- The rating for the content should be prominently displayed before the programme starts so that users can make informed decisions based on suitability. Along with the rating, the content's description should also be provided with a viewer discretion message if applicable.

News Publishers

- Publishers of news on digital media should observe Norms of Journalistic Conduct of the Press Council of India and the Programme Code under the Cable Television Networks Regulation Act 1995 in order to provide a level playing field between the offline (Print, TV) and digital media.

Grievance redressal mechanism

- A three-level grievance redressal mechanism has been mandated with different levels of self-regulation. They are:
- **Level-I: Self-regulation by the publishers**
 - Publisher should appoint a Grievance Redressal Officer who is a resident of India.
 - This officer should take his/her decision on complaints within 15 days.
- **Level-II: Self-regulation by the self-regulating bodies of the publishers**
 - The self-regulating bodies of the publishers should register themselves with the Ministry of Information & Broadcasting.
 - One publisher can have more than one self-regulating bodies.
 - Such bodies would be headed by a retired judge of the Supreme Court, a High Court, or an eminent independent person and shall not have more than six members.

- This body should oversee that the publisher adheres to the Code of Ethics.
- The body will also address grievances that are not resolved within 15 days by the publisher.
- **Level-III: Oversight mechanism**
 - An oversight mechanism will be framed by the Information and Broadcasting Ministry.
 - It shall publish a charter for self-regulating bodies, including Codes of Practices.
 - It shall also establish an Inter-Departmental Committee for hearing grievances.
- Subsequently, WhatsApp has moved the Delhi High Court against the rules, citing concerns.
- Some social media firms have raised concerns over the clause related to employees being jailed under the new Rules.
- As per Rule 4(A), social media platforms need to **appoint a chief compliance officer who shall be responsible for ensuring compliance with the Act** and the rules thereunder and shall be liable in any proceeding relating to third-party information where he/she fails to make sure that due diligence was followed by the intermediary.

Details:

- The minister stressed that the rules only give a redressal mechanism to users, with **complaints to be handled between the users and the social media intermediary**. He stressed that there would be no involvement of the government.

23. G7 nations agree on uniform minimum corporate tax

Context:

- Finance Ministers from the **Group of Seven (G7) nations** have reached a landmark agreement in London setting a **global minimum corporate tax rate**.

Details:

- The Group of Seven nations have backed a **minimum global corporation tax rate of at least 15%**.

- They also seek to put in place measures to ensure that taxes are paid in the countries where businesses operate based on the **principle of 'Significant Economic Presence'**.

How would a global minimum tax work?

- The global minimum tax rate would **apply to overseas profits of a multinational**.
- The envisaged framework allows individual governments to set whatever local corporate tax rate they want.
- But if companies pay lower rates in a particular country, their **home governments could "top-up" their taxes to the minimum rate**, thus eliminating the advantage of shifting profits.

Reasons for the move:

- A global minimum corporate tax will allow the major economies to **discourage multinationals from shifting profits – and tax revenues – to low-tax countries**.
- This proposal from the major economies aims to reduce tax base erosion without putting their firms at a financial disadvantage, allowing competition on innovation, infrastructure and other attributes.

Significance:

Reduce tax base erosion:

- This measure will **help close cross-border tax loopholes** used by some of the world's biggest companies, thus will help **limit base erosion and profit sharing (BEPS)**.
- Increasingly, income from intangible sources such as drug patents, software and royalties on intellectual property has migrated to the low tax jurisdictions, allowing companies to avoid paying higher taxes in their traditional home countries.
 - As per some estimates, countries are losing \$427 billion every year to tax havens. **India suffers an annual loss of \$10.3 billion from global tax abuse.**

In tune with changed pattern of economy:

- This agreement marks a much necessary reform of the global tax system to make it fit for the **current global digital age** where **cross-border digital services are gaining prominence**.

End the so called race to the bottom and its negative consequences:

- The introduction of a global minimum corporate tax will contribute to ending the decades-long “**race to the bottom on corporate tax rates**”, in which countries have resorted to ultra-low tax rates and tax exemptions to lure multinationals companies to invest.
- Such measures have **cost such countries hundreds of billions of dollars** whereas the corporate entities have only grown richer.

Form the basis of a global pact:

- This landmark agreement could form the basis of a worldwide deal.
- **The Organization for Economic Cooperation and Development** has been coordinating tax negotiations among 140 countries on **rules for taxing cross-border digital services and curbing tax base erosion, including a global corporate minimum tax**. The OECD and G20 countries aim to reach consensus on both by mid-year.

Move towards more equitable taxing rights:

- The agreement has committed to reaching an equitable solution on the allocation of taxing rights. It will focus on **protecting the interest of the market countries** by awarding such countries certain degree of taxing rights on the profits of the multinational enterprises.
- This will help ensure that MNCs would pay taxes where they operate and record their profits from based on the concept of ‘Significant Economic Presence’.

Challenges:

- Any final agreement could have major repercussions for low-tax countries and tax havens and is bound to be opposed by such countries.
- Though there seems to be broad agreement on the framework of a global minimum corporate tax, there continue to be **differences over the rate** of such a tax.
- The **inclusion of investment funds and real estate investment trusts** under such a system could also lead to some differences during the negotiations

24. U.S. delays tariffs against digital services tax

Context:

- The United States had recently announced a 25% tariff on \$2 billion of imports from six countries, namely India, Austria, Italy, Spain, Turkey, and the United Kingdom.
- The tariff was subsequently suspended for up to 180 days to give space for ongoing international tax negotiations to continue.

Details:

Imposition of the tariff as a retaliatory measure:

- The proposed tariff was aimed as a retaliatory measure against the concerned countries' imposition of a digital services tax impacting the tech corporations based in the U.S.
 - **The Finance Bill, 2021 of India** had introduced an amendment imposing a 2% digital service tax on trade and services by non-resident e-commerce operators with a turnover of over ₹2 crore.
- A "Section 301" investigation initiated by the previous U.S. administration had found digital services taxes imposed by each of these countries to be discriminatory against U.S. tech firms.
 - Under Section 301 of the Trade Act of 1974, the Office of the **United States Trade Representative (USTR)** enjoys a range of responsibilities and authority to investigate and take action to enforce U.S. national interests under trade agreements and respond to certain foreign trade practices.

Temporary suspension of the proposal:

- The Biden administration's move to temporarily suspend the proposal seems to be an attempt to hold up the threat of USTR sanctions while allowing some space for tax negotiations with the nations concerned.

Concerns:

Global concerns:

- The previous administrations use of Section 301 powers on China, had led to an **escalatory tariff war** and tectonic shifts in global supply chains leaving

many economies in a weakened condition. The U.S.'s trade war with China had an adverse impact for the whole global economy.

- The global economy which has been severely impacted by the pandemic and are only limping back on a **feeble post-COVID-19 recovery**. A new trade war front could be damaging not only to them, but also to the broader global economy.

Indian concerns:

- Any move to abolish or reduce the digital services taxes in India will **dent the government's revenue prospects**.
 - India's digital service tax could yield approximately \$55 million annually.
- If the U.S. chooses to go ahead with its retaliatory tariffs, close to \$118 million of India's exports to the U.S. would be subject to it. This would **dent Indian products competitive pricing ability and subsequently reduce its trade competitiveness**.
 - The proposed tariff would impact 26 high value categories of goods, including basmati rice, cigarette paper, cultured pearls, semi-precious stones, certain gold and silver jewellery items and specific types of furniture products.

Way forward for India:

- **India will have to balance between the two prerogatives of avoiding getting into any escalating matrix of retaliatory taxation with the U.S** that would damage its economic recovery process while also ensuring that it does not yield on its **intent to tax global tech firms** which is not only the right thing to do but also an financial necessity for India.

25. HC imposes fine on Juhi Chawla in 5G case

Context:

The Delhi High Court rejected actor Juhi Chawla's suit against the rollout of 5G technology in India, terming it a publicity stunt done without any personal knowledge of the issue.

Background:

- The actor had moved the Delhi High Court **against the rollout of 5G technology** in India.

- In her plea, she alleged that **no person, animal, bird, insect & plant will be able to avoid exposure to levels of RF radiation** that are 10 to 100 times greater than what exists today.
- The plea also demanded that the department concerned should certify that 5G technology is safe for humans and also animals and birds.
- This recent lawsuit by the actor and environmental activist has **rekindled the debate on the possible harmful effect of 5G on humans.**

What is 5G technology, and how is it different?

- 5G stands for **5th generation mobile network.**
- It is a new global wireless standard after 1G, 2G, 3G, and 4G networks.
- The new network has been designed for **enhanced connectivity across devices** – cell phone or an IoT device in a smart home.
- The wireless technology is **meant to deliver much higher data transfer speeds** than what was possible on 4G. Also, **5G uses higher frequency waves than earlier mobile networks.**
- Higher frequency means a shorter wavelength.
 - 5G waves are able to travel a shorter distance than 4G waves.
 - Therefore, an extensive network of 5G requires more ground-based transmitters.

What are the concerns?

- 5G emits its own electromagnetic radiation like all other radio waves. The concern is that these radiations can be harmful to humans and other organisms.
- Besides, critics and studies claim that the **increased number of transmitters** will further **increase exposure** to the radiation, potentially **impacting a much wider number of people and animals.**

Arguments against the claims:

- Though the studies are accurate in their own regard, **none of them conclusively points out an impact to humans from Radio Frequency Radiations.**
- While the case that 5G is harmful to humans is not as strong, there are concrete understandings of radiations that suggest **no such connection is possible.**
 - Radio wave band that is used for mobile phone networks (including 5G) is **non-ionising.** Such radio waves **lack sufficient energy to cause cellular damage** by breaking DNA apart.

Existing guidelines:

- **Higher energy radiation** levels such as medical x-rays and gamma rays are known to **have health risks with extended exposure**.
 - For such energy waves, there are **strict advisory limits for exposure**.
- Guidelines on the use of radio waves are also in place, and the 5G spectrum falls easily under those limits.

26. The time to limit global warming is melting away

Context:

The world is facing two momentous challenges: COVID-19 and climate change. Both these challenges require all the countries to come together to find a way forward. In 2015, the world signed the Paris Agreement, to **limit global temperature rises to well below 2°C, aiming for 1.5°C**, as it is expected to avoid the worst effects of climate change. The article talks about the need for strong action to avert the harmful effects of climate change.

India's response:

- India has a strong record of tackling climate change.
- It has set impressive **domestic targets to have 450GW of renewable energy by 2030**.
- It was instrumental in initiating the **International Solar Alliance and the Coalition for Disaster Resilient Infrastructure (CDRI)**.
- India played a critical role in delivering the landmark **Paris Agreement**.
- India has **quadrupled wind and solar capacity** in the last decade.

COP26:

- The 2021 United Nations Climate Change Conference, also known as COP26, is the **26th United Nations Climate Change Conference**.
- It is scheduled to be held in the **city of Glasgow from 1 to 12 November 2021** under the **presidency of the United Kingdom**.
- This provides a platform to get the world on track to address the enormous threat of climate change and build a cleaner, brighter future for everyone.

What is the way forward?

- In terms of limiting warming, every fraction of a degree makes a difference.
- The **Climate Action Tracker** estimates that countries' current emissions reduction targets would still **result in average temperature rises of 2.4°C**.

- To limit warming to 1.5°C, **global emissions must be halved by 2030**. This is what makes COP26 so critical.
- To keep 1.5°C within reach, globally, **net zero must be reached by the middle of this century**. Strong action must be taken over the next decade.
- Another major goal is to **protect people and nature from the worst effects of climate change**.
 - The two cyclones, Tauktae and Yaas, that hit India show that the country must work on the real need for **flood defences, warning systems and other vital efforts** to minimise, avert and address the loss and damage caused by climate change.
- **Developed countries must deliver the \$100 billion they promised annually to support developing countries**.
- **The entire globe must come together to deliver on these goals**.
 - That includes **building consensus among governments** for an ambitious, balanced and inclusive outcome.
 - There is a need for **bringing businesses and civil society on board** and building up **international collaboration in critical sectors**.

COP26 provides a strong platform for keeping alive hopes of limiting global warming to 1.5°C. It is a great chance to act towards building a brighter future with green jobs and cleaner air.

27. Saving biodiversity, securing earth's future

India's vast and rich biodiversity gives the nation a unique identity. The country has varied ecosystems across land, rivers, and oceans. The country is home to nearly **8% of global biodiversity on just 2.3% of global land area**, and containing sections of **four of the 36 global biodiversity hotspots**. The editorial talks about the need for **rebuilding the relationship with nature, saving biodiversity with a view to securing Earth's future**.

Value of forests:

- While it is not possible to arrive at the precise economic value of all ecosystem services provided by biodiversity, according to estimates, **forests alone yield services worth more than a trillion rupees per year**.
- The **value would be much greater** with grasslands, wetlands, freshwater, and marine added.

Concerns:

- Present times are witnessing **worldwide declines in biodiversity**.

- Globally, **7% of intact forests have been lost since 2000.**
- Recent assessments indicate that over a **million species might be lost forever** during the next several decades.
- **Climate change and the pandemic** add to the existing stresses on the natural ecosystems.
- The pandemic has exposed the **dysfunctional relationship between humanity and nature.**
- Some of the issues that have come to the fore are:
 - the emergence of infectious diseases
 - lack of food and nutritional security
 - rural unemployment
 - climate change, with all its stresses on nature, rural landscapes, and public health.

National Mission on Biodiversity and Human Well-Being (NMBHWB):

- In 2018, the **Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC)** in consultation with the Ministry of Environment, Forest, and Climate Change and other Ministries approved an ambitious **National Mission on Biodiversity and Human Well-Being (NMBHWB).**
- A Bengaluru-based Biodiversity Collaborative is **working with the National Biodiversity Authority** to hold consultations and prepare road maps of the Mission.
- The mission will be steered by a core of the country's leading biodiversity science and conservation organisations, from public, academic, and civil society sectors.

Significance of the Mission:

- Mission programmes offer **nature-based solutions to numerous environmental challenges**, including degradation of rivers, forests, and soils, and ongoing threats from climate change, with the goal of creating climate-resilient communities.
- **Scientific inputs**, especially related to geospatial informatics and policy, **can guide the development of strategies** for conservation and ecosystem management.
- The Mission will:
 - strengthen **the science of restoring, conserving, and sustainably utilising** India's natural heritage
 - **embed biodiversity as a key consideration** in all developmental programmes, particularly in agriculture, ecosystem services, health, bio-economy, and climate change mitigation

- establish a **citizen and policy-oriented biodiversity information system**
- enhance capacity across all sectors for the **realisation of India's national biodiversity targets** and United Nations Sustainable Development Goals (UN SDGs).
- It will allow India to emerge as a **leader in demonstrating the linkage between the conservation of natural assets and societal well-being.**
- The Mission's comprehensive efforts will empower India to restore, and even increase natural assets by millions of crores of rupees.
- Mitigation programmes will lessen the impacts of climate change and other natural disasters, such as pandemics and floods.

Way Forward:

- One of the ways to mitigate climate change and curtail future outbreaks of infectious diseases is to **repair the dysfunctional relationship with nature.**
- The concept of **One Health for all living organisms**, including the invisible biota in soils that sustain the agricultural systems must be rethought and reimagined.
 - **Integrating human health with animal, plant, soil and environmental health** has both the preventive potential to curtail future pandemics along with the interventional capability for unexpected public health challenges.
- India can **rejuvenate agricultural production systems and increase rural incomes from biodiversity-based agriculture.**
 - It will also help create millions of green jobs in restoration and nature tourism.
- There is a need for an **extensive cadre of human resources** required to meet the enormous and complex environmental challenges.
 - This will require **training professionals in sustainability and biodiversity science**, along with an **investment in civil society outreach.**
- **Preserving biodiversity is directly relevant to the social, economic, and environmental well-being of people.**

28. Strong policies on black carbon can sharply cut glacier melt: World Bank study

Context:

World Bank has released a report titled “**Glaciers of the Himalayas, Climate Change, Black Carbon and Regional Resilience**”.

Details:

- The research covers the **Himalaya, Karakoram and Hindu Kush (HKHK) mountain ranges**, where glaciers are melting faster than the global average ice mass.
- The rate of retreat of HKHK glaciers is estimated to be 0.3 metres per year in the west to 1.0 metre per year in the east.
- Industry and residential burning of solid fuel together account for 45–66% of regional anthropogenic [man-made] BC deposition, followed by on-road diesel fuels (7–18%) and open burning (less than 3% in all seasons) in the region.
- **Glacier melt produces flash floods, landslips, soil erosion, and glacial lake outburst floods.**

Issue:

- **Black carbon (BC) deposits produced by human activity accelerate the pace of glacier and snow melt in the Himalayan region.**
- BC is produced by incomplete combustion of fossil fuels and biomass and emissions.
- It is a **short-lived pollutant** that is the **second-largest contributor to warming the planet after carbon dioxide (CO₂)**. Unlike other greenhouse gas emissions, BC is quickly washed out and can be eliminated from the atmosphere if emissions stop.
- It is part of a larger basket of aerosols that impact climate change directly and indirectly.
- Anthropogenic black carbon deposits such as soot are **changing temperatures, precipitation patterns and accelerating glacier melts.**
- Deposits of BC act in two ways hastening the pace of glacier melt: by **decreasing surface reflectance of sunlight** and by **raising the air temperature.**

Policy Measures to cut BC emissions:

Some of the ongoing policy measures to cut BC emissions are:

- **Enhancing fuel efficiency** standards for vehicles
- **Phasing out diesel vehicles and promoting electric vehicles**
- **Accelerating the use of liquefied petroleum gas** for cooking and through clean cookstove programmes
- **Upgrading brick kiln technologies**

Way Forward:

- **Full implementation of current policies** to mitigate BC can achieve a **23% reduction.**

- With all existing measures, water from glacier melt is still projected to increase in absolute volume by 2040, with impacts on downstream activities and communities.
- However, **enacting new policies** and incorporating them through **regional cooperation among countries** can achieve **enhanced benefits**.

29. Significant progress in SDGs on clean energy, health: NITI index

Context:

NITI Aayog has launched the third edition of the Sustainable Development Goals (SDG) India Index 2020.

Sustainable Development Goal Index

- The index was first launched by NITI Aayog in **2018**.
- The index has been comprehensively documenting and ranking the **progress made by States and Union Territories towards achieving the Sustainable Development Goals**.
- 100 being the highest score, it implies that the State/UT has achieved the targets set for 2030. '0' score implies that the state is at the bottom of the table.
- **NITI Aayog has the twin mandate to oversee the adoption and monitoring of the SDGs in the country**, and also **promote competitive and cooperative federalism among States and UTs**.
- The SDG India Index 2020–21, developed in collaboration with the United Nations in India, tracks the progress of all States and UTs on **115 indicators that are aligned to MoSPI's National Indicator Framework (NIF)**.
- In the current edition, **115 indicators incorporate 16 out of 17 SDGs**, with a qualitative assessment on Goal 17 and cover 70 SDG targets.

Highlights:

- This edition of the index report focuses on the **significance of partnerships** as its theme.
- India's overall SDG score improved by 6 points – from 60 in 2019 to 66 in 2020–21.
- According to the 2020 SDG Index, **India saw significant improvement** in the Sustainable Development Goals (SDGs) related to **clean energy, urban development and health** in 2020.

- All the States showed some improvement from last year's scores.
- Mizoram and Haryana saw the biggest gains.
- The SDGs on **eradication of poverty and hunger both saw significant improvement.**
- The SDGs that deal directly with wages and industrial growth reflect the fact that India's economy has taken a beating over the last year.
- There has been a **major decline in the areas of industry, innovation and infrastructure** as well as **decent work and economic growth.**
- **Clean Water and Sanitation SDG also saw a drop.**
- **Kerala** retained its position at the **top of the rankings**, with a score of 75, followed by **Tamil Nadu and Himachal Pradesh**, both scoring 72.
- **Bihar, Jharkhand and Assam** were the **worst performing States.**

States and Union Territories are classified as below based on their SDG India Index score:

- Aspirant: 0–49
- Performer: 50–64
- Front-Runner: 65–99
- Achiever: 100

Issues:

- Although the index shows improvement on the inequality SDGs, the **NITI Aayog has omitted key economic indicators used to measure inequality in income and expenditure** last year.
 - In 2019, the indicators for inequality included the **growth rates for household expenditure per capita among the bottom 40% of rural and urban populations**, as well as the **Gini coefficient** (a measure of the distribution of income) in rural and urban India.
 - The 2018 indicators included the **Palma ratio** (metric for income inequality).
- Such economic measures have been omitted from the indicators used for this SDG for 2020.
- **Greater weightage is given to social equality indicators**, such as:
 - The percentage of women and Scheduled Caste/Scheduled Tribe representatives in State Legislatures and the Panchayati raj institutions.
 - Levels of crime against the SC/ST communities.
- The only economic indicator in 2020 is the **percentage of the population in the lowest two wealth quintiles.**

Sustainable Development Goals

- The SDGs were developed by a global consultative process on holistic development and are **17** in number.
- They have a **2030 deadline**.

30. A far-reaching tax measure

Context:

- The **U.S. proposal to impose a global minimum tax on foreign income earned by U.S. corporations** aimed to disincentivise American companies from moving their commercial functions out of the U.S. due to the increase in the U.S. corporate tax rate.

Background:

Base erosion and profit shifting:

- Base erosion and profit shifting (BEPS) refers to corporate tax planning strategies used by multinationals to **“shift” profits from higher-tax jurisdictions to lower-tax jurisdictions, thus “eroding” the “tax base” of the higher-tax jurisdictions.**
- Such BEPS strategies aim at **exploiting gaps and mismatches in tax rules** to avoid paying tax.
- Developing countries suffer from BEPS disproportionately. BEPS practices cost countries USD 100-240 billion in lost revenue annually.
- Working together within **OECD/G20 Inclusive Framework on BEPS**, over 135 countries and jurisdictions are collaborating on the implementation of 15 measures to tackle tax avoidance, improve the coherence of international tax rules and ensure a more transparent tax environment.

Addressing tax challenges posed by digitalization of the economy:

- As part of its global efforts to address the challenge posed by BEPS, in May 2019, the Inclusive Framework agreed to a Programme of Work for Addressing the Tax Challenges of the Digitalisation of the Economy.
- The Programme of Work is divided into two pillars:
 - **Pillar One addresses the allocation of taxing rights between jurisdictions** and considers various proposals for new profit allocation and nexus rules based on the concepts of “significant economic presence”.

- **Pillar Two** (also referred to as the “Global Anti-Base Erosion” or “GloBE” proposal) calls for the development of a coordinated set of rules to address ongoing risks from structures that allow MNEs to shift profit to jurisdictions where they are subject to no or very low taxation.

Global minimum corporate tax:

- The Pillar Two proposal aims to provide **jurisdictions with the right to “tax back”** where other jurisdictions have either not exercised their primary taxing right or have exercised it at low levels of effective taxation and in this direction recommends a **global minimum corporate tax**.
- This move intends to achieve minimum effective taxation of more than 10%.

Details:

- The recent U.S. proposal is similar to Pillar Two, except for the rate of the effective minimum tax. While the OECD was considering a 10-12% rate, the U.S. has proposed a 21% rate.
- The U.S. proposal indicates that the U.S. is pushing the OECD to swiftly achieve consensus on the global minimum tax rate, in the absence of which the U.S. proposes to apply its domestic law version of Pillar Two at a rate of 21%.

Significance of global minimum corporate tax:

Curtail tax evasion:

- A global corporate minimum tax will help curb tax base erosion and profit shifting.
 - Some of the world’s biggest corporations, including digital giants such as Apple, Alphabet and Facebook, as well as major corporations such as Nike and Starbucks **pay very low effective rates of tax**. These companies use their subsidiaries to shift profits out of major markets into low-tax countries.

Impetus to more sustainable reforms:

- A global minimum corporate tax will neutralize the impact of tax incentives and ensure that companies choose to be situated in a particular country based on other commercial benefits.
- With tax incentives neutralised, countries may have to compete on other factors like **better regulatory regimes, ease of doing business, access to global talent**, among others. Hence the countries will be incentivized to undertake such more meaningful and sustainable reforms.

Concerns associated with global minimum corporate tax:

Against the autonomy of nations:

- The calls for a global minimum corporate tax have been criticized by countries such as Ireland, which argue that this provision **goes against the principle of fiscal autonomy**. The proposal infringes upon the tax sovereignty of nations.

Render small economies uncompetitive:

- The global minimum tax rates would also **render the smaller jurisdictions and economies incapable of competing with larger economies**. In a world where there are income inequalities across geographies, a minimum global corporation tax rate could **crowd out investment opportunities for developing economies and play to the advantage of advanced economies**.
- They argue that the fight against unfair tax competition envisioned through the global minimum corporate tax has become a **fight against competitive tax systems which could actually prove beneficial for economic growth**.

Scope for disagreements and implications:

- The U.S. push for a global minimum corporate tax at a 15% rate can cause international disagreements. Several countries have taken a different approach to the rate of global minimum tax. While France and Germany have expressed support, the EU has raised concerns regarding the high rate proposed by the United States.
- The disagreements on tax allocations may actually **lead to a tax-related trade war or entrenchment of unilateral levies** which will only further harm both global and national economies already struggling amid the COVID-19 pandemic.

Impact on India:

- India has been part of the Pillar Two discussions and has not objected in principle to the proposal.

Positive:

- The proposal will help **increase India's tax revenues** since the proposal would also cover offshore structures set up by Indian companies.
 - Start-ups and large Indian conglomerates commonly use offshore structures for conducting global operations. Revenue from such operations is often retained offshore and not repatriated to India.

- The State of Tax Justice report of 2020 notes that **India loses over \$10 billion in tax revenue due to the use of offshore structures**, particularly through investments made by Indian residents through Mauritius, Singapore and the Netherlands.

Negative:

- **The lower tax rate tool often used by India to attract foreign investment into India may become ineffective** with the introduction of a global minimum corporate tax rate.

31. What explains the surge in FDI inflows?

Context:

- **Impressive growth in total foreign direct investment (FDI) inflow in 2020-21** reported by the Ministry of Commerce and Industry

Details:

- As against the claim being made by the government that its measures on the fronts of Foreign Direct Investment (FDI) policy reforms, investment facilitation and ease of doing business have resulted in increased FDI inflows into the country, the article raises doubts over this development based on the following arguments.

No net increase in FDI:

- The direct investment in India has actually decreased while it is the 47% increase in **repatriation/disinvestment** that accounts for the rise in the gross inflows into India. Hence there is a wide gap between gross FDI inflow and direct investment to India.

Surge led by FPI:

- **Short-term foreign portfolio investments** are entirely responsible for the surge in foreign investment.
- FDI inflows have increasingly consisted of private equity funds or portfolio investments, which are usually short-term investments in domestic capital (equity and debt) markets meant to realise better financial returns.
- In principle, private equity funds do not make long-term greenfield investment and hence is **not adding to fixed investment, output growth and employment creation**.

Negligible impact on domestic output:

- The ratio of **net FDI to GDP** has remained just over 1% (left-hand scale), with no discernible rising trend being observed over the years.
- Likewise, the proportion of **net FDI to gross fixed capital formation (fixed investment)** has remained range-bound between 4% and 6%.
- Thus, FDI inflow's contribution to domestic output and investment remains modest.

Rise in stock prices:

- While the FII inflow did little to augment the economy's potential output, it has resulted in a substantial rise in stock prices.
 - While GDP has contracted by 7.3% in 2020-21 on account of the pandemic and the economic lockdown, the **BSE Sensex has nearly doubled**.
 - **BSE's price-earnings (P-E) multiple** – defined as share price relative to earnings per share – is among the world's highest.

32. New IT Rules is not the way forward

Traceability clause and issues involved

- **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021** imposes certain obligation on significant social media intermediaries.
- Rule 4(2) puts an obligations to **ensure traceability of the originator** of information on their platforms.
- Consequently, WhatsApp has filed a petition in the Delhi High Court.
- WhatsApp contends that the mandate for **traceability violates the privacy rights of Indian citizens**, by rendering WhatsApp unable to provide encrypted services.

Government's response

- The Government primarily relies on the argument that: **privacy is not an absolute right**, and that the traceability obligation is **proportionate**, and sufficiently restricted.

- Notably, the new Rules mandate traceability only in the case of significant social media intermediaries i.e. those that meet a user **threshold of 50 lakh users**, which WhatsApp does.
- Traceability is also subject to an order being passed by a court or government agency and only in the absence of any alternatives.
- While it is indeed true that **privacy is not an absolute right**, the Supreme Court of India in the two **K.S. Puttaswamy decisions of 2017 and 2018** has laid conditions for restricting this right.
- In Puttaswamy cases, the Supreme Court clarified that any restriction on this right must be **necessary, proportionate and include safeguards against abuse**.

Issues with traceability

- **Not proportionate:** A general obligation to enable traceability as a systemic feature across certain types of digital services is neither suitable nor proportionate.
- **No safeguard against abuse:** The Rules lack **effective safeguards** in that they fail to provide any **system of independent oversight** over tracing requests made by the executive.
- This allows government agencies the ability to seek any messaging user's identity, virtually at will.
- **Presumption of criminality:** Weakening encryption – which a traceability mandate would do – would **compromise the privacy and security of all individuals** at all times, despite no illegal activity on their part, and would create a **presumption of criminality**.

Way forward

- **Explore the alternatives:** The Government already has **numerous alternative means of securing relevant information** to investigate online offences including by accessing unencrypted data such as metadata, and other digital trails from intermediaries.
- **Already has ability to access encrypted data:** The surveillance powers of the Government are in any case vast and overreaching, recognised even by the Justice **B.N. Srikrishna Committee report of 2018**.
- Importantly, the Government already has the **ability to access encrypted data under the IT Act**.
- Notably, Section 69(3) of the **Information Technology Act** and Rules 17 and 13 of the Information Technology Rules, 2009 **require intermediaries to assist with decryption** where they have the technical ability to do so, and where law enforcement has no alternatives.

- **Judicial scrutiny of Section 79 of IT Act:** The ability of the government to issue obligations under the guise of “due diligence” requirements under Section 79 of the IT Act must be subject to judicial scrutiny.
- **Legislative changes needed:** The long-term solution would be for legislative change along multiple avenues, including in the form of revising and reforming the now antiquated IT Act, 2000.

Conclusion

While, undoubtedly, there are numerous problems in the digital ecosystem that are often exacerbated or indeed created by the way intermediaries function, ill-considered regulation of the sort represented by the new intermediary rules is not the way forward.

33. Drones are now a favoured terror tool

Context:

In the first such instance in India, **explosive devices were dropped from drones** in the technical area of the Air Force Station in **Jammu, triggering blasts**.

- This represents the start of a new dimension to the terror cycles that the Kashmir Valley has experienced.
- There have been warnings that Pakistan-based terrorist groups could attempt to target military bases with drones.

Concerns:

- **Pakistan based outfits have been deploying drones** over the past two years, to **smuggle arms, ammunition and drugs into Indian territory**, besides conducting **aerial surveillance**.
- According to government figures, 167 drone sightings in 2019 and 77 in 2020 were recorded along the border with Pakistan.
- In early 2021, the **Border Security Forces (BSF) foiled a few attempts to drop weapons and drugs by using drones** on this side of the International Border in Jammu’s Samba and Kathua belt.
- **Quadcopters** are also being deployed by Pakistani agencies for **spying activities in the border areas**.
- Another emerging challenge for the security forces is the increasing use of **improvised explosive devices**.

Issue:

- Drones have **developed significantly and acquired massive leaps in capability.**
- Weaponised drones were first used by the Islamic State in northern Iraq in 2016 and then in Syria.
- They have wreaked havoc on Al Qaeda and other terrorist organisations in Afghanistan and other hotspots, **used for targeted and precise eliminations by both Israelis and Americans.**
- In the war between Armenia and Azerbaijan drones swooped down on their targets such as the formidable Russian S300 Air defence system, before such systems had the time to react.
- What makes drones particularly dangerous is the fact that **they fly very low making them undetectable to radar and leaving little by way of reaction time once detected.**

Way Forward:

- With the increasing use of drones for **cross-border smuggling**, the Indian security agencies must look for various **ways to put in place reliable systems as part of a smart border management mechanism for deterrence.**
- In terms of border security, **drone jammers may not prove to be more effective.** Drones fly low and therefore cannot be detected by any radar system.
- Anti-drone jammers cannot be very effective in the border areas, but they can be **deployed at security-sensitive installations** to prevent attacks.
- India can sign **Geo fencing agreements with commercial drone manufacturers.**
 - Such an agreement would ensure that manufacturers **pre-programme codes into their products that prevent them from flying over or around certain areas** – especially around **critical infrastructure.**
 - It involves sharing the coordinates of sensitive locations with foreign manufacturers.
- There is a need to **reinvent border management through other viable options for surveillance, detection and use of anti-drone techniques.**

Note:

- The **Defence Research and Development Organisation (DRDO) has developed an anti-drone technology for short ranges** which was deployed for Prime Minister's security during the Independence Day address in August 2020.
- Navy is procuring **Smash-2000 rifles to counter drones.**

- In January 2020, the **Ministry of Civil Aviation (MoCA)** made it mandatory for operators to register their drones.
- Provisions exist for the online issuance of unique identification numbers for drones through the **Ministry's Digital Sky platform**.

34. Reopen the files, reconsider privatisation

Background:

Pandemic induced economic crisis:

- India is currently going through its worst economic crisis.
 - The Indian economy has experienced its **highest ever GDP contraction in 2020**.
 - **Unemployment levels have risen, income levels have fallen**, estimates point to bank **non-performing assets (NPAs) rising** and the **fiscal deficit has also risen**.
- Against this backdrop, the article discusses certain aspects of the envisaged Central government policy of aggressive privatisation of public enterprises.

The new disinvestment policy for public sector enterprises:

- The Indian Finance Minister in her Budget speech for 2021-22, announced a **new policy for central public sector enterprises (CPSEs)**.
- The policy proposes to privatize state-owned companies in the coming years and would serve as a roadmap for the disinvestment of government-owned firms across sectors.
- This policy proposes a differentiated approach to strategic and non-strategic sectors and envisages **ambitious disinvestment targets**.
 - For the financial year 2022, the government has announced a disinvestment **target of Rs 1.75 lakh crore**. This is to be raised from the stake sale in public sector companies and financial institutions.

Arguments in favour of privatization:

Increase efficiency:

- There are umpteen examples around the world that show what the economy could gain by privatizing state-run businesses given that the private sector is inherently more efficient. Thus privatization marks an **important step in India's programme of reforms to achieve long-term sustainable growth**.

Asset recycling:

- Privatization also allows for asset recycling: the government monetizes existing infrastructure assets through their sale to the private sector, and then **invests the proceeds in new projects or long-term investment funds.**

Source of revenue for government:

- The privatization of state-owned companies over the years could provide the funds needed to rebuild the economy and allocate **money for infrastructure creation and welfare schemes.**
 - India has recently announced a **national asset monetization pipeline** to fund much-needed infrastructure and welfare schemes.

Offset debt and ensure fiscal stability:

- Privatization is also beneficial to gain long-term balance sheet stability and offset debt from the incoming revenue stream. This has become all the more important due to the **adverse economic impact of the pandemic.**

Arguments against the present approach to privatization:

May not lead to new Greenfield investment:

- The taking up of stakes by the private sector in the public sector enterprises results in **no real value addition to the economy in the near term.** This only marks a transfer of ownership and results in no new greenfield investment.

Lower realization of value:

- The target-driven approach to disinvestment may result in a scenario where the government may have to **sell their stakes at fair or lower than fair valuations.**

Loss of strategic control:

- Privatization decreases the government control on strategic sectors which will allow it some leverage during crisis periods as observed during the COVID-19 pandemic. Privatization may result in a scenario where **India might lose the strategic capacity that its ownership of public enterprises provides it.**
 - In dealing with the novel coronavirus pandemic crisis, the Government has been able to use its ownership to get banks and public enterprises to do so many things on an immediate basis.

- The sale of the public sector entities to foreign entities, firms as well as funds, has adverse implications from the perspective of being 'Atma Nirbhar'.

Concerns over job losses:

- The **public sector enterprises provide for reservations** in recruitment to socially and economically backward classes. Privatization will end this affirmative intervention. Also, there are concerns that **privatization could lead to job losses**.

Details:

- The author, a former secretary of the Department of Industrial Policy and Promotion, Government of India, suggests different approaches to different categories of public sector enterprises that face their own set of issues and hence need relevant solutions.

Beyond redemption entities:

- There exist some public sector units which have been sick for a long time. They are **plagued by multiple issues- obsolete technology, plants and machinery and inefficient managerial and human resources**.
- The article suggests **closing such enterprises in a time-bound manner** while ensuring the employees are adequately compensated.
- The **assets of such companies should be sold**. The land owned by these entities amount to their largest asset base and prudent disposal of this should be a focus.
- These enterprises may be taken away from their parent line ministries and brought under one holding company which should have the sole mandate of speedy liquidation and asset sale.

Entities with potential for turnaround:

- There are enterprises that **have been financially sick but can be turned around**.
 - Example – Air India and the India Tourism Development Corporation (ITDC) hotels.
- Ministerial micromanagement is one of the major reasons for their poor performance.
- For such companies, **introducing private management** through privatisation or induction of a strategic partner is the best way forward.
- As the health of these enterprises improves over time, so will their valuation. The government can then reduce its stake further and get more money. This

will ensure better revenue flows rather than outright privatization when they are in a financially weak position.

- Under current circumstances, very few investors would be interested in taking up stakes, as is evident from the Air India example.

Profitable enterprises:

- For profitable public sector enterprises, the article suggests adopting **the Chinese model approach**.
 - The Chinese have nurtured their state-owned enterprises to **increase their competitiveness in cost, quality, and technology**. This has allowed them to succeed in both the domestic and global markets. In the Fortune 500 list, there are 91 state-owned Chinese enterprises.
- With such profitable public enterprises, the Government can continue to reduce its shareholding by offloading shares and even reducing its stake to less than 51% while **remaining the promoter and being in control**.
- Also, **greater autonomy and flexibility** should be provided to the management. These entities should be allowed to take well-considered commercial risks and invest patient capital in strategic areas where risk-averse private investment may not be willing to invest.

Conclusion:

- The article argues for a more **pragmatic approach to privatization** rather than one led by ideology.
- **Calibrated divestment to get maximum value over the medium term after considering market conditions should be the goal** instead of being led by strict time-bound targets for disinvestment.

35. Rattling foreign investors

Background:

FDI into India:

- **India has been emerging as a major destination for foreign direct investment (FDI)**.
 - The Commerce Ministry recently reported India attracting the highest ever FDI of \$81.72 billion in 2020-21.

India's BIT disputes:

- In 2020, India lost two high-profile **bilateral investment treaty (BIT) disputes** to two leading global corporations – **Vodafone and Cairn Energy** – on retrospective taxation. India has challenged both the awards at the courts of the seat of arbitration.
- Another high-profile BIT dispute has been the one involving the cancellation of an agreement between Antrix, a commercial arm of the Indian Space Research Organisation, and **Devas Multimedia**, a Bengaluru-based start-up, for the lease of satellite spectrum.
 - The agreement was arbitrarily struck down on the grounds of national security.
- India has lost all the subsequent legal disputes challenging the government's move. **The ICC arbitration tribunal** has even ordered Antrix to pay \$1.2 billion to Devas after a U.S. court confirmed the award earlier this year. India's challenge to the verdict has also been turned down.
- India seems to be dragging its feet on the issue of compliance with these verdicts.

Concerns:

Impact on India's image as a favourable FDI destination:

- The article argues that the failure of India to honour its contracts and also the reluctance to enforce tribunal awards could hurt India's image as a favourable FDI destination.
- An important factor that propels investors to invest in foreign lands is the host states honouring contracts and India's approach to deliberately delaying compliance of tribunal awards is sending out **a wrong message to foreign investors**.
- Such behaviour **decreases the confidence in the host state's credibility towards the rule of law, and increases the regulatory risk enormously for the investor**.
- Such an attitude will not be helpful in attracting global corporations into India and may even push out foreign investment already in India.

Threat of legal proceedings:

- **Cairn has launched legal proceedings in the U.S.** to enforce the arbitral award of \$1.2 billion by seizing the assets of Air India.

Conclusion:

- The article suggests honouring the arbitral awards and restoring India's lost credibility in the eyes of the investor community.

36. Flying terror

Context:

- In the first such instance in India, **drones were used to attack an Indian Air Force base in Jammu**. Explosive devices were dropped from drones triggering blasts.
- There have been reports of at least two more subsequent attempts to use drones to attack military targets.

History of use of drones in warfare:

- In 2018, **Syrian rebels used homemade drones to attack Russian military bases in Syria**.
- There has been an assassination attempt on the Venezuelan President Nicolas Maduro using an explosive-laden drone.
- In 2019, **Houthi rebels claimed responsibility for bombing Saudi oil installations using drones**.

Concerns:

Technology backed terrorism:

- The use of drones represents a new mode of terrorism characterized by the increasing use of technology. This helps **reduce costs and the risk of identification for terrorists while increasing their efficacy**. The exponential proliferation of new technologies and Artificial Intelligence will only make the threat posed by drones increase exponentially.

Redundancy of available tools to counter drones:

- The conventionally available tools would be redundant in combating the threat posed by drones. **Since drones fly very low it is extremely difficult to detect them using radars and they also leave little by way of reaction time once detected**.

Easy accessibility:

- The fact that drones are **available in open markets for very cheap prices** makes them easily accessible for terrorists to procure. This could enable even individuals with sufficient motivation and skills to carry out drone attacks without the threat of being identified by intelligence agencies.
- Thus drones offer the non-state actors **cheap and affordable ways of targeting the security agencies**.

Increased capacity of drones:

- Drones have developed significantly and acquired massive leaps in capability. **The increased speed, range, manoeuvrability and load-carrying capacity** have turned them into potential weapons that could be used to target adversaries. Such drones can hit strategic targets and cause huge damage.
- **Small size, stealth drones pose a lethal threat to strategic installations.**

No comprehensive regulation:

- The existing international framework for controlling the proliferation of technology that can be weaponized, such as the **Wassenaar Arrangement and Missile Technology Control Regime**, may be termed ineffective in addressing the threat posed by drones.
- The Wassenaar Arrangement aims to **promote transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies**. The aim is also to prevent the acquisition of these items by terrorists.

Recommendations:

- Requisite measures in terms of **anti-drone capabilities**, as well as **policy measures**, should be put in place to counter the threat posed by drones.
- Requisite Counter-Unmanned Aircraft Systems capability must be developed and made available. There is an urgent need for an **anti-drone system shielding critical installations in the country**. This could involve anti-drone techniques like **drone jammers, Directed Energy Weapons such as lasers and the use of suitable guns, missiles and other hard kill options**.
- Enhanced **international cooperation and consensus on the development and deployment of technologies** are required to combat such new methods of terror attacks.
- **Tighter regulation of drones sales and operations** needs to be implemented to prevent their use for terrorist activities.

37. Global minimum tax may help India but can cause international disagreements

The US proposal for global minimum tax

- In its recent proposal, the U.S. sought to impose a global minimum tax **on foreign income earned by U.S. corporations**.

- The proposal is intended to disincentivise American companies from **inverting their structures** due to the increase in the U.S. corporate tax rate.
- The U.S. is now **discussing a floor of 15% for the minimum tax rate.**
- The proposal is similar to Pillar Two, except for the rate of the effective minimum tax.

Similarity with Pillar Two Proposal

- **The Pillar Two proposal** was the Organisation for Economic Co-operation and Development's (OECD) plan to plug the remaining **Base Erosion and Profit Shifting (BEPS)** issues
- It provide jurisdictions **the right to "tax back"** where other jurisdictions have either not exercised their primary taxing right or have exercised it at low levels of effective taxation.
- For instance, if an **Indian-headquartered multinational corporation (MNC)** has an entity in Singapore or the Netherlands **through which global operations are run**, and its income from global operations is not taxed at an effective rate of 10% or 15%, then it can be taxed in India.
- **India has been part of the Pillar Two** discussions and has not objected in principle to the proposal.

How Global Minimum Tax would benefit India?

- The proposal, along with the increased tax bill for U.S. companies, may benefit the Indian revenue department.
- The State of Tax Justice report of 2020 notes that **India loses over \$10 billion in tax revenue** due to the use of offshore structures, particularly through investments made by Indian residents through Mauritius, Singapore and the Netherlands.
- This is supported by the **overseas direct investment (ODI) data** from 2000 to 2021 published by the Reserve Bank of India.
- **Start-ups and large Indian conglomerates** commonly use **offshore structures** for conducting global operations.
- Revenue from such operations is often **retained offshore** and not repatriated to India.
- **Tax advantages incentivise such structures**, due to which taxes on such income are not paid in India.
- Once these proposals are implemented, **Indian companies would have to pay additional taxes on their offshore structures** to the extent that the **effective rate of tax is lower than the global minimum tax rate.**

Challenges

- **Lack of consensus:** Several countries have taken a **different approach to the rate of global minimum tax.**
- While France and Germany have expressed support, the EU has raised concerns regarding the **high rate proposed by the United States.**
- **Tax sovereignty issue:** Countries have stated that the proposal infringes upon their **tax sovereignty** and that the fight against unfair tax competition should not become a fight against competitive tax systems.

Conclusion

As economies struggle amid the COVID-19 pandemic, the necessity of encouraging trade and economic activity should be prioritised over disagreements on tax allocations. A tax-related trade war or entrenchment of unilateral levies may further harm both global and national economies.

38. Need to deal with distortions built into GST

Context

The Goods and Services Tax (GST) Council in India is still engaged in a discussion on whether life-saving and hard-to-come-by products should be taxed. Such delay in decision-making can largely be explained by the distorted design and incentive structure of the GST itself.

Imbalance in collection and distribution of taxes

- The taxes collected under GST are accumulated by the Union government and a portion is **transferred back to each state under a formula.**
- As is the case with most federal countries, there is a large **imbalance in the collection and distribution of taxes** between states.
- this holds true also for **income accrued to, and distributed, from the GST pool.**
- Four states – Maharashtra, Tamil Nadu, Karnataka, and Gujarat contribute nearly as much as **the remaining 27 states combined.**
- Most federal countries exhibit this characteristic where a few large, rich, provinces or states contribute disproportionately.

Variation in dependence of States on transfers from the Union government

- Only about **30 per cent of the overall revenue** of the states mentioned above – Maharashtra, Tamil Nadu, Gujarat, and Karnataka – **comes from the Union government.**

- But for the **remaining 27 states, roughly 60 per cent of their revenues** are obtained through transfers from the Union government.
- For the smaller Northeastern states, these transfers from the Union government constitute 80-90 per cent of their total revenues.
- In effect, the states that contribute the most to the GST pool are **the least dependent on transfers from the Union government** while the ones that contribute the least are the most dependent.

Two problems in net-transfers in India

1) One-sided transfers

- In almost every federal union, **net-transfers work to reduce differences in development** between states over time.
- However, Over the last 25 years or so, net transfers have become increasingly one-sided in India.
- That is, the quantum of net-transfers diminishes, as states become more equal through such transfers.
- But in India, **the opposite has occurred.**

2) Indirect taxes and cess

- The Union government of the last seven years has greatly exacerbated this problem through two actions.
- First, it has reconstructed the composition of taxation away from the fair and progressive channel of **direct taxation towards the inherently regressive and unfair channel of indirect taxes.**
- Second, the Union has shifted a large proportion of taxation roughly **18 per cent of its overall revenues into cesses**, a special form of taxes that **remain outside the GST pool** and hence do not have to be shared with the states.
- Since 2014, cess revenues grew 21 per cent every year leading to a **doubling in terms of its share of GDP.**

Implications of these two problems for fiscal federalism

- The combined effect of these problems is that all states (collectively) get a lower share of overall revenues.
- Individual states face an **ever-increasing disparity** in the ratio of funds received from the Union as a proportion of taxes collected by the Union from that state.
- This is **an affront to fiscal federalism** and an assault on “cooperative federalism”.

Issue of 'one state one vote' system

- States that are more dependent on transfers from the Union **want to maximise GST collections** while states that are less dependent can afford to **be more sensitive to citizens' concerns**.
- The case of **taxes on Covid products** is perhaps the starkest instance of such differences.
- **Most large states are ready to forego this tax revenue** for humanitarian considerations.
- But 19 states representing the remaining 30 per cent of the population seem keen to continue to levy GST on Covid products.
- These are mostly smaller states.
- Given the smaller population of such states, the adverse impact of Covid taxes will be minimal for them.
- **But they will reap the benefits of additional revenues from GST on Covid products** levied on the much larger populations of the bigger states.

Conclusion

When direct tax policy decisions are legislated by Parliament, which has proportional representation from states according to their size of the population, indirect tax policy decisions should not be subject to one state one vote system.

39. World Competitiveness Index 2021

Why in News

According to the **World Competitiveness Yearbook (WCY)**, **India** maintained **43rd rank** on the **annual World Competitiveness Index**.

- The World Competitiveness Index is a **comprehensive annual report** and worldwide reference point on the competitiveness of countries.

Key Points

- **About:**
 - **Published by:** WCY was **first published in 1989** and is compiled by the **Institute for Management Development (IMD)**.
 - In 2021, the IMD examined the impact of **Covid-19** on economies around the world.
 - It provides **extensive coverage of 64 economies**.
 - **Factors:** It measures the prosperity and competitiveness of countries by examining four factors (334 competitiveness criteria):
 - Economic performance

- Government efficiency
- Business efficiency
- Infrastructure
- **Top Global Performers:**
 - **Europe:**
 - The European countries display regional strength in world competitiveness ranking with Switzerland (1st), Sweden (2nd), Denmark (3rd), the Netherlands (4th).
 - **Asia:**
 - The top-performing Asian economies are, in order, Singapore (5th), Hong Kong (7th), Taiwan (8th) and China (16th).
 - Singapore was 1st in the **2020 World Competitiveness Index**.
 - **Others:**
 - The **UAE and the USA remain in their same spots** as last year (9th and 10th, respectively).
- **India's Performance:**
 - **In Comparison to BRICS Nations:** Among the **BRICS nations**, India ranked second (43rd) after China (16th), followed by Russia (45th), Brazil (57th) and South Africa (62nd).
 - **Performance on Four Factors:** Among the four indices used, **India's ranking in government efficiency increased** to 46 from 50 a year ago, while its **ranking in other parameters** such as economic performance (37th), business efficiency (32th) and infrastructure (49) **remained the same**.
 - **Improvements in Government Efficiency:** Mostly due to relatively stable public finances. Despite difficulties brought by the pandemic, in 2020, the government deficit stayed at 7%. The Government also provided support and subsidies to the private companies.
 - **India's Strengths:**
 - India's strengths lie in investments in telecoms (1st), mobile telephone costs (1st), ICT services exports (3rd), remuneration in services professions (4th) and terms of trade index (5th).
 - **India's Weaknesses:**
 - India's performance is the worst in sub-indices such as broadband subscribers (64th), exposure to **particulate pollution** (64th), **human development index** (64th), **GDP per capita** (63rd) and **foreign currency reserves per capita** (62nd) among others.
- **Analysis:**
 - **Qualities of Top Performers:** The qualities such as **investment in innovation, digitalisation, welfare benefits, diversified economic activities, supportive public policy and leadership**, resulting in social

cohesion have helped countries better manage the crisis and thus ranking higher in competitiveness.

- **Addressed Unemployment:** Competitive economies succeeded in transitioning to a remote work routine while also allowing remote learning.
- **Public Spending:** The effectiveness of key public spending, such as public finance, tax policy and business legislation, are seen to relieve the pressure on the economies hit by the Covid-19.
- **Recent Steps Taken by India to Increase its Competitiveness :**
 - The government has introduced the **Production-Linked Incentive (PLI) Scheme** in various sectors for enhancing India's manufacturing capabilities and exports.
 - The five pillars of '**Atmanirbhar Bharat Abhiyan (or Self-reliant India Mission)**' are - Economy, Infrastructure, System, Vibrant Demography and Demand.

Way Forward

- As Michael Porter has stated, a nation that ensures balance between economic and social progress can enhance its productivity, followed by creating competitiveness and thus, prosperity.
- Therefore, it is necessary to create an environment which not only pushes the businesses to compete successfully in local as well as international markets, but ensures that the average citizen's standard of living also improves.
- Governments need to provide an environment characterized by efficient infrastructures, institutions and policies that encourage sustainable value creation by the enterprises.

40. It's time for RBI to turn its attention to inflation

How inflation benefits government as a borrower

- Rising inflation hurts lenders and **benefits borrowers.**
- To that extent, the government, one of the biggest borrowers, stands to benefit as **high inflation will lower the national debt load in relation to the size of the economy.**
- The Union budget 2021-22 assumed a **14.4 per cent growth in nominal GDP**, however, actual growth is set to exceed this.
- The **GDP deflator**, which **measures the difference between nominal and real GDP**, is a weighted average of WPI and CPI, with a higher weightage to WPI.

- And given that **nominal GDP is used as a base for computing the fiscal ratios**, all of these will get deflated.
- **The value of past debt and debt servicing costs** thus gets pared in real terms as inflation rises.
- Viewed from a debt dynamics perspective, as the gap between growth and interest rates rises, **the debt/GDP ratio falls**.

Impact on other stakeholder

- That inflation **reduces purchasing power** and hits private consumption is well known.
- Overall food CPI inflation (5 per cent) was lower than **non-food inflation (7.1 per cent) in May**.
- **Lower food inflation, coupled with higher non-food inflation** means **reduced purchasing power for farmers**.
- Inflation trends, specifically input prices (reflected better by WPI), matter **for corporate performance as well**.
- While producers seem to be **bearing a part of the burden of rising input costs** for now, these could get passed on in greater measure to consumers once demand recovers.
- Rising inflation **reduces returns on fixed income instruments**, including **bank deposits**, which account for over 50 per cent of households' financial savings.
- This has already induced a shift to riskier asset classes such as equities, which has **ramifications for overall financial stability**.

Way forward

- The RBI will have to closely monitor inflation trends and calibrate its policy response.
- It has not intervened on high inflation since the onset of the pandemic and, rightly so, **in order to support growth**.
- But the current spell of inflation is over a high base and a continuation of recent trends will persuade it to turn the focus back on inflation.
- Given the need for monetary policy to stay accommodative, it might be **time to consider other supply-side interventions** such as cuts in excise rates on petroleum products to soften the inflation blow.

Conclusion

Given the impact rising inflation has for the broader sections of the economy, it is time for RBI to turn its attention to inflation.

