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Current Affairs, April 2022

INDEX

1. Polity and Governance	6
1.1 Urban Local Bodies (ULBs)	6
1.2 Election Freebies	8
1.3 Localisation of Sustainable Development Goals (Sdgs)	9
1.4 India's Investigative Agencies	11
1.5 Prison Reforms	13
1.6 Phone Tapping	15
1.7 India Stays Out Of Global Declaration on Future on Internet	17
1.8 The Department Of Personnel and Training (Dopt) Lays Down Norms for Quota in Promotions	18
1.9 Broadcast Seva Portal	18
2. International Relations	19
2.1 United Nations Human Rights Council	19
2.2 Weapons of Mass Destruction (Wmd)	23
2.3 India Us Relations	25
2.4 Space Situational Awareness (SSA)	29
2.5 India-Japan Relations	30
2.6 India Turkmenistan Relations	32
2.7 Maritime Rescue Co-Ordination Centre	34
2.8 'India Out' Campaign Maldives	35
2.9 India and the European Commission Agreed To Launch India- Eu Trade And Technology Council (TTC)	35
2.10 India Gets Elected To Four UN Economic and Social Council (Ecosoc) Bodies	36
2.11 Raisina Dialogue 2022	36
2.12 International Telecommunication Union (ITU)	36
3. Economics	37
3.1 Poverty Estimates	37
3.2 Current Account Deficit (CAD)	39
3.3 Open Network for Digital Commerce	41
3.4 Digital Banking Units	43

3.5	Standing Deposit Facility (SDF)	45
3.6	Coal Sector in India	47
3.7	Semiconductor Manufacturing in India	50
3.8	Reserve Bank of India Releases Its Annual 'Report on Currency and Finance (RCF)' For the FY 2021-22	54
3.9	Ways and Means Advances (WMA)	54
3.10	Counter-Cyclical Capital Buffer	55
3.11	Rbi Tightens Non-Banking Financial Company (NBFC) Lending and Disclosure Guidelines	56
3.12	Central Government Amends Nidhi Rules, 2014	56
3.13	Foreign Exchange Management Act (FEMA), 1999	57
3.14	Women Workforce	57
3.15	Smart Cities Mission	58
3.16	India's 9th Hydrocarbon Basin	58
3.17	Kwar Hydroelectric Project	59
4.	Security And Defence	60
4.1	Cryptocurrency Crimes	60
4.2	Financial Action Task Force (FATF)	62
4.3	Armed Forces (Special Powers) Act (Afspa) In North East	64
4.4	New Cybersecurity Guidelines	66
4.5	Pinaka Missile Systems	67
5.	Environment And Ecology	68
5.1	Uniform Carbon Trading Market	68
5.2	Pradhan Mantri Urja Suraksha Evam Utthaan Mahabhiyaan (Pm Kusum) Scheme	70
5.3	State Energy & Climate Index	73
5.4	Sustainable Sand Management	74
5.5	Scope of Authority Under Dam Safety Act 2021	76
5.6	Punjab-Haryana Dispute Over Rivers Waters	77
5.7	Ministry Of Environment Extends Tenure of Green Permits	77
5.8	Mother Nature A 'Living Being' With Legal Entity: Madras High Court (HC)	78
5.9	Prakriti	78
5.10	Global Land Outlook 2: Land Restoration for Recovery and Resilience	79
5.11	World Bank Published "Carbon Revenues from International Shipping" Report	79
5.12	Trem Stage-Iv Emission Norms	80

5.13	Global Assessment Report On Disaster Risk Reduction 2022	80
5.14	Study Points That Sea Floor Spreading Has Slowed By 35% Globally	81
5.15	Geomagnetic Storm	81
5.16	Ernardinelli-Berstein Comet	82
6.	Social Issues	83
6.1	Universal Social Security	83
6.2	Civil Registration System (CRS)	85
6.3	Learning Poverty	88
6.4	Online Gaming	89
6.5	Accessible India Campaign	91
6.6	E-Detailed Action Report (E- DAR) Portal	92
7.	Science and Technology	93
7.1	Traditional Medicine	93
7.2	One Health	95
7.3	European Organization for Nuclear Research (CERN)	97
7.4	Gagan	98
7.5	Space Bricks	99
7.6	W Boson	99

1. Polity and Governance

1.1 Urban Local Bodies (ULBS)

The Delhi Municipal Corporation (Amendment) Act, 2022 was just passed, with the goal of reuniting Delhi's three municipal corporations (MCD).

- The Delhi Municipal Corporation (Amendment) Act 2022 modifies the 'Delhi Municipal Corporation Act, 1957,' thus undoing an earlier 2011 amendment to the Act that divided the erstwhile MCD into independent Municipal Corporations of North, South, and East Delhi.
- The division was first recommended in the Ministry of Home Affairs' Balakrishnan Committee Report in 1987, which was supported in the 2001 Virendra Prakash Committee Report.

Need for the Law

- To create compact municipalities at various centres in Delhi in the interest of providing more efficient civic services to the public. Earlier trifurcation was uneven in terms of territorial divisions and revenue-generating potential.
- There was huge gap in the resources available to the 3 corporations compared to their obligations.
- Increasing the financial difficulties of the 3 Municipal Corporations in Delhi
- Municipalities are intended to serve and be responsive to local civic needs. However, recent reports underscore the extent to which municipalities (urban local bodies) are mismanaged.

Why does the problems associated with urban local bodies remain unaddressed even after they have been identified year after year?

- Shortage of funds: There is acute scarcity of funds among ULBs as tax collections are extremely low, further SFC (State Finance Commission) are not constituted regularly and its suggestions are not implemented.
- For instance, poor finances of Bihar's ULBs is due to delays in release of grants, and inadequate devolution of funds.
- Unplanned urbanisation: The municipal services have failed to cope with the increasing needs of the population, both qualitatively and quantitatively leading to haphazard growth of cities as seen in Delhi-NCR region.
- Excessive state control: Functions have not been devolved and Mayor office has become ceremonial position with lack of concrete powers.

- **Multiplicity of Agencies:** Overlaps in jurisdiction of Department of Health and Family Welfare (DoHFW) and the city/town municipal corporations leads to a complex service delivery, reduced access for the most vulnerable population.
- For instance, in Bangalore, there is a mix of primary health centres (PHC) operated by the Bruhat Bengaluru Mahanagara Palike (BBMP) as well as the state DoHFW.
- **Lack of human resources:** Untrained manpower, shortage of qualified technical staff and managerial supervisors has led to failure in delivery of public services.
- **Irregular Elections:** Elections are not held regularly, defeating the goal of decentralised governance. For instance, Tamil Nadu elections for ULBs held after 10 years.

Way forward

- **Devolving functions:** Effective devolution of functions as laid down by 74th amendment act, 1992 and giving powers and autonomy to Municipalities, Mayor's office is the need of the hour.
- **Building human resource capacity:** To deliver the functions efficiently and effectively, city governments need human resources with adequate skills and capacities.
- States need to follow the example of Madhya Pradesh, Gujarat, and Tamil Nadu and create a specialised municipal cadre for effective administration.
- **Increasing accountability:** To ensure accountability of the elected representatives, robust by-laws outlining the working of the corporation and procedure rules need to be enacted. Additionally, citizens of the ward should have the authority to remove the person from their post.
- **Making cities financially independent:** To increase their revenue, city governments should expand coverage and increase efficiency in tax collection along with transferring the power and authority to introduce new taxes and revise tax rates.
- Mumbai is the only example of a city where sanctioning powers have been given to ward committees.
- **Active citizen participation:** For transparency and accountability in the governance process, there needs to be active citizen participation, particularly in areas such as budget- making and urban planning.
- **Citizen grievance redressal mechanisms:** The complaint redressal mechanism should be centralised for all the public services delivered in the city, irrespective of whether they're delivered by a city, state, or central agency.
- **Regular Elections:** Elections to ULBs shall be completed before the expiry of their duration. In case of dissolution, election shall be held within six months from that date.

1.2 Election Freebies

The chairwoman of the 15th Finance Commission recently expressed alarm about rising political election freebies, stating that the concept of sub-national bankruptcy should be considered.

About Election Freebies

- Election Freebies are irrational freebies offered or distributed by political parties as part of electoral promises.
- In recent years, election freebies have become an intrinsic feature of Indian elections, with cumulative increases in each election. Free energy, water, rides, loan forgiveness, allowances, laptops, and so on.

Some of these 'freebies' help them to meet basic needs of people and uplift their living standard, helping to temporarily address other issues as well such as unemployment, rising cost of living, economic inequalities etc. But it goes against the roots of free and fair election in a democracy and gives rise to several issues.

Issues with Freebies: Negative Impact of Freebies

- Economic Issues: Freebies are a huge drain on the state exchequer affecting the fiscal balance and macroeconomic stability of the country. If not checked it can lead to greater risks including state bankruptcy due to high debt-to-GDP ratio (see image). E.g.
- The debt-to-GDP ratio of Punjab reached 53.3% in 2021-22 due to high-subsidy burden.
- Telangana has committed 35% of revenue receipts, almost 63% of state's own tax revenue, to finance populist schemes which are centered around freebies.
- Political Issues: It goes against Article 14 by distorting the level playing field among political parties, favoring the party in power over others. It also unduly influences voters leading to short-sightedness in their judgement.
- Socio-psychological Issues: Distorted economic decisions lack equity and fairness, leading to various socio- psychological issues such as reduced efforts or laziness, threats to social cohesion by creating artificial divides between haves and have-nots of the associated freebies. E.g.
- In Rajasthan, 56% of tax and non-tax revenues are spent on pension and salaries. The state's recent decision to revive the old pension scheme will further lead to greater social inequalities.
- Environment: Freebies promote unsustainable practices by pushing governments and people away from environmentally sustainable practices. E.g.
- Free electricity reduces incentives for farmers and domestic households to install solar panels or adopt more efficient public transport systems.

Way Forward

- Solution to election freebies start with recognition of delicate interplay between politics and economics. Following steps can be taken optimize efforts to counter this issue-
- Empowering Election Commission to enforce MCC by giving it legal status and power to de-register political parties if they violate MCC guidelines. (Committee on Electoral Reforms, Government of India.)
- Differentiating between freebies with priority to DPSPs based or merit goods such as PDS system, education, health etc. for greater prosperity.
- Need Based Freebies with Transparency by segregating haves and have-nots and identifying real beneficiaries. E.g., ensuring that farm loan waiver reaches only actual farmers.
- Financial Budgeting on freebies between subsidies and freebies with awareness programmes to educate people to promote demand-based interventions.
- Achieve a more inclusive and higher economic Growth rate to meet people's aspirations of jobs, better living standard, lesser inequalities etc. to reduce temptation towards freebies.
- Outcome-oriented government schemes can help in this through better policy reach and expenditure efficiency.
- Use of public money without proper responsibility carries other risks as well such as tax avoidance from taxpayers. Therefore, if not checked, it can lead to a culture of competitive freebie politics (domino effect) at all levels, creating threat to macroeconomic stability and integrity of the nation.

1.3 Localisation of Sustainable Development Goals (SDGs)

The Ministry of Panchayati Raj and the United Nations Development Programme have signed a joint declaration of agreement on the localization of Sustainable Development Goals (SDGs) (UNDP).

SDGs and their Implementation

- The SDGs are a series of 17 Sustainable Development Goals (SDGs) agreed by the United Nations Sustainable Development Summit in 2015 to end poverty, fight inequality and injustice, and combat climate change by 2030.
- SDG localisation is the process of incorporating sub-national contexts into SDG attainment. This comprises:
- The application of the Sustainable Development Goals as a framework for local development policy, and identifying how local and regional governments might contribute to the achievement of SDGs

Significance of SDGs Localisation

- The success on SDGs achievement depends on its implementation at all territorial levels. To do so, we need to:

- Interpret the Goals and targets within the local context, i.e., making the global goals a reality in urban and rural areas,
- Associate them with the roles and responsibilities of local bodies, and
- Monitor their implementation at sub-national level.
- SDGs localisation helps in this by localising the development, based on shared learning and effective partnerships for-
- Improved state capacities, localised solutions, and promotion of cooperative and competitive federalism with various benefits.

Challenges in SDG Localisation

With less than a decade left to achieve sustainability, localisation of SDGs is vital to accelerate the implementation of the SDGs. To do so, a number of challenges need to be addressed such as:

- **Local Translation and Adaptation:** India is a diverse country with hundreds of languages, socio-cultural practices etc. So, the first challenge is to accommodate these differences within SDGs localisation.
- **Infrastructure Challenge:** SDGs localisation demands system-wide alignment for data collection, implementation and monitoring. So, we need to overcome challenges related to availability of local data and capacities to perform local monitoring.
- **Governance Challenge:** The prevalence of top-down approach and apathy from state and bureaucracy towards local bodies create functional and coordination issues (vertical and horizontal) among all stakeholders.
- The lack of political will and support for local governance adds to it.
- **Devolving Responsibility Without Resource:** Availability of funds have remained a concern for local bodies since their formation. Localised SDGs will add more responsibilities with limited funds transfer and local resource mobilization.
- The reduced revenues of the state since covid-19 are another setback to it.
- **Awareness on SDGs:** Limited awareness of the SDGs at the sub-national level is another challenge towards successful SDGs localisation.

Efforts taken for localization of SDGs

- In India, the overall coordination for implementation of SDGs is handled by the National Institution for Transforming India or NITI Aayog with twin mandate of:
 - Overseeing the adoption and monitoring of the SDGs in the country, and
 - Promote competitive and cooperative federalism among States and UTs.
- To do so, NITI Aayog launched the annual 'SDG India Index' in 2018 which monitors progress of states and Union Territories (UTs) on SDGs and localisation of SDGs through eight steps.

1.4 India's Investigative Agencies

The Chief Justice of India (CJI) recently proposed the establishment of a "independent umbrella institution" to bring together various investigative agencies such as the Central Bureau of Investigation (CBI), the Enforcement Directorate (ED), and the Serious Fraud Investigation Office (SFIO) under one roof.

Agencies of India:

<p>CBI</p>	<ul style="list-style-type: none"> • It is the premier investigating police agency in India, established in 1963, and functions under Ministry of Personnel, Pension & Public Grievances • Its establishment was recommended by Santhanam Committee on Prevention of Corruption (1962-64). • It is the nodal police agency in India, which coordinates investigation on behalf of Interpol Member countries. • Motto: Industry, Impartiality and Integrity. • It is not a statutory or constitutional body. • It is governed by the Delhi Special Police Establishment (DSPE) Act, 1946. • It focuses on combating corruption in public life, curb economic and violent crimes through meticulous investigation and prosecution. • It helps to fight cyber and high technology crime. • Lokpal Act, 2014 provided the appointment of CBI director through high-powered committee comprising Prime Minister, CJI and leader of opposition. • In 2021, President promulgated two ordinances to extend the tenures of the Directors of the CBI and ED for up to five years, from fixed tenure of two years. • It provides assistance to Central Vigilance Commission (CVC) and Lokpal.
<p>ED</p>	<ul style="list-style-type: none"> • Established in 1956 with its Headquarters at New Delhi. • Specialized financial investigation agency under Department of Revenue, Ministry of Finance. • Responsible for enforcement of Foreign Exchange Management Act, 1999 (FEMA) and certain provisions under Prevention of Money Laundering Act (PMLA), 2002. • FEMA is a civil law while PMLA is criminal law.
<p>SFIO</p>	<ul style="list-style-type: none"> • It is a multi-disciplinary organization under Ministry of Corporate Affairs. • Consists experts in field of accountancy, forensic auditing, law, information technology, investigation, company law, capital market and taxation for detecting and prosecuting or recommending for prosecution white-collar crimes/frauds. • Headquarter at New Delhi. • Accorded statutory status under Companies Act, 2013. • Power to arrest accused people for violation of Company law.

	<ul style="list-style-type: none"> To assist officers of SFIO on investigations, the Computer Forensic and Data Mining Laboratory (CFDML) was set up in 2013.
National Investigation Agency (NIA)	<ul style="list-style-type: none"> Governed by its own NIA Act, 2008. Headquarters is at New Delhi. Gives powers to the central agency to take suo motu cognizance of terror activities across the country. Governing body is Ministry of Home Affairs. Functions as the Central Counter Terrorism Law Enforcement Agency in the country.

Analysis of the Functioning of investigative agencies

- Multiple agencies: Single incident investigated by multiple agencies, often leading to dilution of evidence, a contradiction in depositions, overlapping of powers and prolonged incarceration of innocents.
- Delay in trials: Lack of public prosecutors and standing counsels, seeking adjournments, and filing voluminous documents in pending trials, undue imprisonment of undertrials, cherry-picking of the evidence, and repeated transfers of officers leading to unnecessary delays in investigation.
- General consent: When a general consent is withdrawn by several states like Mizoram, West Bengal, Maharashtra etc. CBI needs to seek case-wise consent from the concerned state for investigation.
- CBI officers thus lose all powers of a police officer as soon as they enter the state unless the state government has allowed them.
- Section 6 of DSPE Act empowers state government to give or deny consent to CBI officer.
- Inadequate Infrastructure: National Investigation Agency (NIA) is nodal counter terror body but is still lacking infrastructure, manpower and fleet of vehicles to conduct investigations and quick mobilization.
- Falling credibility: Image of investigative agencies like CBI, ED and SFIO has been tarnished by allegations of corruption, excesses, lack of impartiality, and a close nexus with the political class. Example, Bofors scandal, Hawala scandal.
- CBI denied information, claiming exemption under section 24 of Right to Information Act, thus, hampering public accountability.
- Lack of autonomy: Agencies like CBI is administratively and financially dependent on the Department of Personnel and Training and lacks functional autonomy.
- Federalism: Central government decision of entrust the pan India investigation of offences to any agency without the consent of the state government violates constitution as public order and policing are matters of the state government.
- UAPA (Unlawful Activities (Prevention) Act, 1967) is one of the Acts that were added to the schedule of the NIA Act. The Agency is given pan India jurisdiction to investigate offences covered in the Acts.

- Reforms needed in investigative agencies
- Umbrella organisation: It is required to bring various agencies under one roof to improve coordination, resources and intelligence sharing along with clearly defining its powers, functions and jurisdictions.
- Also, it will save the investigative agencies from being blamed as a tool of harassment and end multiplicity of agencies.
- Regular upgradation: There is a need for regular upgradation of knowledge, deployment of state-of-the-art technology, and international exchange programmes to learn the best practices.
- State agencies must be equipped to deal with increasing challenges in the field of investigation.
- Performance audit: Annual audit of the performance of the institution by the appointing committee to address loopholes and improve efficiency of investigative agencies.
- Autonomy: The agency should be made independent with functional autonomy without the administrative control of government. Its director should be given power of the Secretary to the government and should report to the Prime Minister or the Minister concerned.
- Women participation: There is need for more women's representation in policing system so that women victims feel confident to approach and report crimes.
- Improving credibility: There should be a harmonious relationship and collaboration between the State and Central agencies to reclaim social legitimacy and public trust by breaking the nexus with the political executive.
- It is essential that all institutions, including police and investigative bodies, uphold and strengthen democratic values and not allow any authoritarian tendencies to creep in.

1.5 Prison Reforms

The Ministry of Home Affairs (MHA) has established guidelines for the Modernisation of Prisons (MoP) Project's execution.

Background

Prison is a State subject under List-II of the Constitution's Seventh Schedule, and its management and administration is governed solely by the Prisons Act, 1894, and the respective State Governments' Prison Manuals.

Need for Prison Reforms

- Overcrowding: "Prison Statistics India", brought out by National Crime Records Bureau stated that in 2019, there were nearly 4.8 lakh inmates in 1,306 facilities against the sanctioned strength of 4.1 lakh, with an occupancy rate of 118%.

- This undermines the ability of prison systems to meet the basic needs of prisoners, such as healthcare, food, and accommodation.
- This also endangers the basic rights of prisoners, including the right to have adequate standards of living and the right to the highest attainable standards of physical and mental health.
- No separation of under-trials: Around 75% of inmates in our jails are under-trials. As these awaiting trial inmates come into touch with their incarcerated inmates, they get influenced into the world of crime.
- Health consequences of imprisonment: Prisoners health conditions deteriorate in prisons which are overcrowded, where nutrition is poor, sanitation inadequate and access to fresh air and exercise often unavailable.
- Imprisonment and poverty: Imprisonment contributes directly to the impoverishment of the prisoner, of his family. Family experiences financial losses as a result of the imprisonment of one of its members, exacerbated by the new expenses that must be met - such as the cost of a lawyer, food for the imprisoned person, transport to prison for visits and so on.
- Severe staff crunch: About 30% of the sanctioned jail executive staff posts still lie vacant. At national level there is an average 7 inmates per staff in all jails in India (2020).
- Issues of women prisoners: There is a severe lack of female staff, inadequate numbers of toilets, bathrooms and other basic preconditions for sanitation and hygiene. Also physical and sexual violence is a common scenario in prison.
- Detrimental social impact: Imprisonment disrupts relationships and weakens social cohesion. The disruption of the family structure affects relationships between spouses, as well as between parents and children, reshaping the family and community across generations.
- COVID-19 induced changes: Many prison systems have failed to implement critical COVID-19 preventive measures. People in prison are especially vulnerable due to cramped living conditions, lack of hygiene supplies and poorer health status.

Way forward

- Issue of overcrowding can be addressed by:
- Open Prisons: It is a correctional institution in which inmates are trusted to serve out their sentences under limited supervision and are often not locked up in jails. They are free to go to work and return to the jail after working hours.
- Improving the system of Parole and Furlough, so that inmates can maintain their social links while our prisons are less cramped.
 - Grant of parole and furlough must be balanced against public interest and can be refused to certain categories of prisoners.

- Fast-Track Courts: should be established so that no innocent prisoner should be forced to spend too much time in jail.
- Adherence to key international rules and standards such as:
 - UN Standard Minimum Rules for the Treatment of Prisoners (the Nelson Mandela Rules) that set out the minimum standards for the treatment of people in prison and for good prison management.
 - UN Rules for the Treatment of Women Prisoners and Non-custodial Measures for Women Offenders (the Bangkok Rules) give guidance to reduce unnecessary imprisonment of women, and to meet the specific needs of women who are imprisoned.
 - UN Standard Minimum Rules for Non- custodial Measures (the Tokyo Rules) provide a set of basic principles to promote the use of non-custodial measures and sanctions, as well as minimum safeguards for persons subject to alternatives to imprisonment.
- Use of technology: Automation and other technological advances can significantly ease the burden on prison staff, although the use of such technology needs to be balanced with the necessity for critical interaction between prison staff and people detained.
- A National Commission for Prisons: should be established to provide a national perspective on prisons and be a central body responsible for these.
- A robust grievance redressal mechanism: should be put in place in all prisons to ensure the rights of prisoners are not violated and their concerns are heard impartially.
- Healthcare needs: Both physical and mental health needs should be addressed appropriately and regularly. Inmates should have access to doctors and psychologists as and when needed.
- Skill development: Educational facilities, Vocational training and skilling facilities in prison should be also be upgraded as it can improve the daily lives of prisoners and give them economic support after release.

1.6 Phone Tapping

In 2019, an IPS officer was charged for tapping the phones of political leaders.

- Definition of phone tapping: Phone tapping is the hidden surveillance of internet-based communications and phones by a third party. Phone tapping can also refer to wiretapping, line bugging, or phone interception. It began in the United States in the 1890s, with the advent of the telephone recorder.
- Legal requirements: The Indian Telegraphic Act of 1885 governs phone tapping.

Indian Telegraph Act, 1885

- Authority to use the telephone: Both the central and state governments have the authority to use the telephone under Section 5 (2) of the Indian Telegraph Act of 1885.
- In the state, police have the authority to eavesdrop on the phone.

- At the center, 10 agencies are empowered to do so: Information Bureau, CBI, Enforcement Department, Drug Enforcement Department, Direct Tax Central Committee, Revenue Information Department, National Investigation Agency, R & AW, Signal Information Bureau, Delhi Police Commissioner.
- Eavesdropping by other agencies is considered illegal.

Reasons for Phone Tapping:

Phone tapping is the center or if the center or state requires it for the benefit of "public security", "India's sovereignty and integrity, national security, friendship with foreign countries". State can do. Or to prevent incitement to commit public order and morals or criminal offenses. "

Press Exception: Press releases intended to be published in India by central or state government-certified correspondents shall not be intercepted or withheld unless transmission is prohibited in this subsection.

Authority to Issue Phone Tapping Orders:

Under Rule 419A of the 2007 Indian Telegraph (Revised) Regulation, phone tapping orders can only be issued by the Secretary of State, the Ministry of Interior, or government responders. Your order will be sent to your service provider in writing. Only then can you start tapping. The competent authority must record the reason for the wiretapping in writing.

- However, in exceptional cases, the order may be issued by an officer who does not fall below the rank of Joint Secretary to the Government of India, or by a subordinate authority, including the head of an authorized law enforcement agency or a second-highest officer. I have. By competent officers not below the ranks of central and state level police inspectors.
- This order must be communicated to the competent authority within a certain period of time.

Checks against misuse of power of phone tapping

- Last resort: The law is clear that interception must be ordered only if there is no other way of getting the information.
- Time limit: The directions for interception remain in force, unless revoked earlier, for a period not exceeding 60 days. They may be renewed, but not beyond a total of 180 days.
- Review committee: Any order issued by the competent authority is reviewed by a committee headed by the Cabinet Secretary with the Law and Telecom Secretaries as members. In states, it is headed by the Chief Secretary with the Law and Home Secretaries as members. The review committee may set aside the directions and orders for destruction of the copies of the intercepted message or class of messages
- Destructions of records: Records pertaining to such directions shall be destroyed every six months unless these are, or are likely to be, required for functional requirements. Service providers too are required to

destroy records pertaining to directions for interception within two months of discontinuance of the interception.

- Procedural transparency: There are multiple provisions aimed at keeping the process transparent:
- Written direction to service provider: The directions for interception have to be conveyed to designated officers of the service providers in writing by an officer not below the rank of SP or Additional SP or equivalent.
- Disclosure of information: Directions for interception are to specify the name and designation of the officer or the authority to whom the intercepted call is to be disclosed

Responsibility of service providers

- The designated nodal officers of the service providers are supposed to issue acknowledgment letters to the security/law enforcement agency within two hours on receipt of an intimation.
- They are to forward every 15 days a list of interception authorisations received to the nodal officers of the security and law enforcement agencies for confirmation of authenticity.
- They shall put in place adequate and effective internal checks to ensure that unauthorised interception of messages does not take place and extreme secrecy is maintained.
- In case of unauthorised interception, the service provider may be fined or even lose its licence. Recourse against illegal phone tapping
- Unauthorized tapping is in violation of the right to privacy and the aggrieved person can file a complaint in the Human Rights Commission.
- An FIR can be lodged in the nearest Police Station when unauthorized phone tapping comes into the knowledge of the person.
- Additionally, the aggrieved person can move the Court against the person/company doing the Act in an unauthorized manner under Section 26 (b) of the Indian Telegraphic Act which provides for 3 year imprisonment for persons held for tapping. The person (s) can also be prosecuted for authorized tapping but sharing of the data in an authorized manner.

1.7 India Stays Out of Global Declaration On Future On Internet

- Aiming to keep the Internet open, free, and neutral, the declaration is a political commitment among the partners to advance a positive vision for the Internet and digital technologies.
- Around 60 countries have signed the declaration include the US, European Union, United Kingdom, Canada and France. India, China and Russia are among the large nations that are not part of this declaration.
- Key principles of Declaration
- Commitments to protect human rights and fundamental freedoms of all people,

- Promote a global Internet that advances the free flow of information, advancing “inclusive and affordable” connectivity,
- Promote trust in the global digital ecosystem, including through protection of privacy,
- Protecting and strengthening the multi- stakeholder approach to governance.
- Earlier, a report titled, “The return of digital authoritarianism: internet shutdowns” highlighted that
- Number of countries that shut down the internet in 2021 has increased to 34 from 29 in 2020.
- India is the top country to impose internet shutdowns in 2021 for the fourth consecutive year.
- India also did not sign the Budapest Convention.

1.8 The Department Of Personnel And Training (DoPT) Lays Down Norms For Quota In Promotions

- The DoPT has asked all departments of central government to collect the data on inadequacy of representation of Scheduled Castes and Scheduled Tribes before implementing the policy of reservation in promotion in government offices.
- The memorandum referred to the January verdict of the SC (upheld the M. Nagaraj v. Union of India, 2006 judgement) having three conditions were laid down by the apex court
- The collection of quantifiable data regarding the inadequacy of representation of SCs and STs.
- The application of this data to each cadre separately.
- The cadre being the unit of operation of the promotion roster.

Reservation in promotion

- Article 16 (4A): Empowers State to make provisions for reservation in matters of promotion to SC/ST.
- Nagaraj v. Union of India, 2006: SC laid down 3 criterion to be followed for implementing reservation in promotion.
- Jarnail Singh v L.N. Gupta (2018): SC held that states need not be required to collect quantifiable data on the backwardness of the SCs and STs.

1.9 Broadcast Seva Portal

- It is an online portal solution for speedy filing and processing of applications of broadcasters for various kinds of licenses, permissions, registrations, etc
- It is launched by Ministry of Information & Broadcasting.
- It is a simple and user-friendly web portal that provides a broadcaster with an end-to-end solution and would bring Transparency, Accountability & Responsiveness in the ecosystem.
- It will reduce the turnaround time of applications and at the same time will help applicants track the progress.

2. International Relations

2.1. United Nations Human Rights Council

Russia was suspended from the UN Human Rights Council, according to a resolution passed by the UN General Assembly. More on the news

- The US proposed the resolution to expel Russia from the Council in response to reports that Russian military killed civilians while fleeing from towns near Kyiv, Ukraine's capital.

With 93 votes in favour, 24 votes against, and 58 abstentions, the motion was passed.

About UN Human Rights Council

It is an inter-governmental body within the United Nations system, made up of 47 States, is responsible for the promotion and protection of all human rights around the globe. It reports directly to the General Assembly's 193 members.

Background:

It was established in 2006 by Resolution 60/251 as a subsidiary body to the UN General Assembly. It replaced the former Commission on Human Rights, which operated from 1946 to 2006.

- Commission on Human Rights was created in 1946 as a subsidiary body of the U.N. Economic and Social Council (ECOSOC).
- The initial mandate of the commission was to establish international human rights standards and develop an international bill of rights.

Mandate and Role in the U.N. System

- It is responsible for promoting universal respect for the protection of all human rights and fundamental freedoms for all.
- It aims to prevent and combat human rights violations, including gross and systematic violations, and to make recommendations thereon.
- It also works to promote and coordinate the mainstreaming of human rights within the UN system.
- It receives substantive and technical support from the U.N. Office of the High Commissioner for Human Rights (OHCHR), an office within the U.N. Secretariat.
- Its decisions, resolutions, and recommendations are not legally binding.

Membership:

The Council comprises 47 members apportioned by geographic region (Refer infographic).

- **Eligibility:** All U.N. members are eligible to run for a seat on the Council. Countries are nominated by their regional groups and elected by the General Assembly through secret ballot with an absolute majority required.
- The General Assembly takes into account the candidate States' contribution to the promotion and protection of human rights, as well as their voluntary pledges and commitments in this regard.
- **Term:** Members of the Council serve for a period of three years and are not eligible for immediate re-election after serving two consecutive terms.
- **Suspension of Membership:** If a Council member commits “gross and systematic violations of human rights,” the General Assembly may suspend membership with a two-thirds vote of members present.
- **Meetings:** The Council is headquartered in Geneva, Switzerland, and meets for three or more sessions per year for a total of 10 or more weeks. It can hold special sessions on specific human rights situations or issues at the request of any Council member with the support of one-third of the Council membership.

Significance of UNHRC

- **Platform for Dialogue among states:** The Council serves as a forum for dialogue among States, with input from other stakeholders. Through dialogue and cooperation, it contributes towards the prevention of human rights violations and respond promptly to human rights emergencies.
- **Special procedures to monitor human rights:** The Council has created or renewed the mandates of various “special procedures.” The special procedures are experts appointed to monitor human rights around priority themes or in specific countries with serious human rights problems.
- **Reviewing Human rights record:** The Council also manages the Universal Periodic Review (UPR), a process through which each UN Member State’s overall human rights record is reviewed.
- In addition, the Council receives complaints alleging patterns of human rights violations, which are considered by the Working Group on Communications and may be referred to the Working Group on Situations.
- The Working Group on Situations reports substantiated claims of consistent patterns of gross violations to the Council and makes recommendations for action.
- **Encourages Civil Society Participation:** It explicitly acknowledges the role of non-governmental organizations at the national, regional and international levels, in the promotion and protection of human rights”. Therefore, council works in close cooperation in the field of human rights with Governments, regional organizations, national human rights institutions and civil society.

Others:

- Promotes the implementation of human rights obligations undertaken by States.

- Provides advisory services, technical assistance and capacity building in consultation with and with the consent of Member States concerned.
- May issue resolutions calling on States to take specific actions or uphold certain principles, or it may create mechanisms to investigate or monitor questions of concern.

Achievements of UNHRC

- Country specific reports and commissions of inquiry: Between 2006 and 2015, the number of country-specific reports submitted by special procedures increased by 104 percent and the number of governments issuing standing invitations to the independent experts almost doubled to 114.
- Resolution on Internet free speech: In 2012, UNHRC unanimously adopted a resolution to protect the free speech of individuals on the Internet, the first such U.N. resolution of its kind.
- Special rapporteurs on Iran: It highlighted the woeful human rights situation there, citing Iran's extremely high rate of executions, constraints on an independent judiciary, violations of due process, women's rights, and systematic discrimination against religious minorities.
- Resolution on prevention of violations: The resolution (adopted in 2020) highlights the need for the UN system to support states in building national resilience, as well as the possibility for council to resort to dialogue and cooperation to prevent violations and respond promptly to human rights emergencies.
- Recognition of the Right to a Healthy Environment as a Human Right: In 2021, members of the UNHRC adopted resolution recognizing the human right to a safe, clean, healthy and sustainable environment.

Concerns with Human Rights Council

- Membership criteria: It requires candidates to commit to the highest standards of human rights, and states should take into account a nominee's human rights record when voting. Both of these rules are basically unenforceable.
- UN members have very different views on human rights. For example, US wanted only "democratic nations" to be eligible. Such a criterion would lead to debates over meaning of "democracy", and would seem to prioritise civil and political rights over economic, social and cultural ones.
- In any case, the "measurement" and respective ranking of human rights records across states is contentious.
- Consequently, Council sometimes includes countries widely perceived as human rights abusers.
- Lack of competitiveness in council election: In some elections, countries have run unopposed after regional groups nominated the exact number of countries required to fill Council vacancies. For instance, October 2021 election.

- Prone to politicization: States generally vote in favour of their national interests rather than human rights interests if the two should clash. Thus Council remains prone to politicization, as evidenced by decisions that privilege political interests over human rights protection.
- Reprisals against Human rights defenders: NGO representatives invited to speak at the Council are too often interrupted with harassing points of order from repressive delegations.
- Others:
- Council's closed ballot elections in the General Assembly may make it easier for countries with questionable human rights records to be elected to the Council.
- The submissions and statements of governments perceived to be human rights abusers are taken at face value rather than being challenged. The process gives these same countries a platform to criticize countries that may have generally positive human rights records.
- Many experts have also expressed concern regarding some member states' rejection of UPR recommendations and nonparticipation in the UPR process.
- Further, it remains difficult to build consensus on specific issues relating to human rights.

Road Ahead

- Procedural reforms: Some experts and policymakers have proposed requiring open ballots in Council elections to hold countries publicly accountable for their votes. Experts also suggest lowering the two-thirds vote threshold to make it easier to remove a Council member.
- Protecting Human Rights Defenders from Reprisals: Any state found to be responsible for reprisals against human rights defenders, and which fails to rectify them, should be disqualified from sitting on the Council.
- Strengthening UPR: This can be done through systematic follow-up and implementation and adopting a more rigorous test. It can also be made a part of the selection process for election to Council or can be connected to other parts of the UN responsible for the provision of material and technical assistance to states.
- Other measures
- Provision of timely and accurate information to reduce politicization and build consensus.
- Ensuring National implementation of international human rights obligations and commitments and addressing human rights situations.
- Strengthening delivery of international human rights technical assistance and capacity-building support and additional resources for human rights reporting.
- India voted no, claiming that it had chosen the side of "peace" and "stands for a quick end to war."

2.2. Weapons of Mass Destruction (WMD)

Weapons of Mass Destruction and Changes in Its Transportation System (Prohibition of Illegal Acts) Law 2022 was recently passed by Lok Sabha to ban the funding of weapons of mass destruction.

More about the news

- Weapons of Mass Destruction and Its Delivery System (Prohibition of Illegal Acts) Act, 2022 amends Weapons of Mass Destruction and Its Delivery System (Prohibition of Illegal Acts) Act, 2005.
- The 2005 Act prohibits illegal activities (manufacturing, etc.) , Transportation or transfer related to weapons of mass destruction and their means of transportation).
- Recent amendments have expanded the scope of banned activities to include already banned financing activities.
- The revised law prohibits individuals from directly or indirectly funding prohibited activities related to weapons of mass destruction and their delivery systems.
- Empower the central government to freeze, confiscate, or grant the financial assets and economic resources of those involved in such activities.

Key developments that echoes the need for amendment

- To align with international benchmarks: The relevant organisations at the international level, such as the Financial Action Task Force have expanded the scope of targeted financial sanctions and demand tighter controls on the financing of WMD activities.
- To keep pace with evolving threats: With advancements in technologies, new kinds of threats have emerged that were not sufficiently catered for in the existing legislation. These include developments in the field of drones or unauthorised work in biomedical labs that could maliciously be used for terrorist activity.

About Weapons of Mass Destruction (WMD)

- There is no single, authoritative definition of a WMD in international law and the expression is usually understood to cover nuclear, biological, and chemical (NBC) weapons.
- According to the United States Department of Homeland Security, “A weapon of mass destruction is a nuclear, radiological, chemical, biological, or other device that is intended to harm a large number of people.
- It is therefore categorised as a class of weaponry with the potential to:

- Produce in a single moment an enormous destructive effect capable to kill millions of civilians, jeopardize the natural environment, and fundamentally alter the lives of future generations through their catastrophic effects;
- Cause death or serious injury of people through toxic or poisonous chemicals;
- Disseminate disease-causing organisms or toxins to harm or kill humans, animals or plants;
- Deliver nuclear explosive devices, chemical, biological or toxin agents to use them for hostile purposes or in armed conflict.

What are the weaknesses of the global governance against WMD threats?

- Inclusivity and Discrimination Issues: WMD regimes apply different requirements to different nations. For example, NPT permits five specific countries to possess nuclear weapons but has no mechanism for other countries' accession while they possess nuclear weapons.
- Ability to withdraw easily: For example, the United States and Russia ended the Intermediate Range Nuclear Forces Treaty in 2019 rather than working to address their mutual concerns about one another's adherence to it. These types of examples could lead to further crumbling of existing global governance.
- Blatant use of WMD: The greatest weakening of norms against WMD stems from the use of chemical weapons, which has become far too common and no longer appears to be effectively deterred.
- Dual-use nature of so many technologies involved in WMD production and use.
- Accountability deficit: Numerous instances of WMD use and testing remain essentially unpunished.
- Broader political and security trends: This includes range of issues among Russia, the United States, and European nations; North Korea's nuclear and missile programs; continuing uncertainty regarding the future of the Iran nuclear agreement; trade wars; terrorism; rising cyber threats; civil conflicts; and more.
- Arms racing among holders of world's largest nuclear weapon arsenals, the United States and Russia, to match and out manoeuvre the other. On the other hand players like China have sought to diversify into some new nuclear capabilities.

Related News

World's stockpile of nuclear weapons increasing: Report by Nuclear Weapons Ban Monitor (NWBM)

- Objective of the report is to track the progress being made to eradicate the world of nuclear weapons, as set out in the treaty on the prohibition of nuclear weapons (TPNW), which came into force in 2021.

Key findings of the report

- World's nine nuclear-armed states has a combined arsenal of 12,705 warheads at the beginning of 2022.
- Approximately 90% of the world's nuclear warheads are owned by Russia and US.

- Countries including China, India, North Korea and Pakistan, continued to increase their stockpiles last year and, at this rate, could soon reverse the overall pace of decline in nuclear weapons.

About NWBM

- It is established as research programme in 2018, produced and published by Norwegian People's Aid (NPA), a partner organization of International Campaign to Abolish Nuclear Weapons (ICAN).
- ICAN is a coalition of NGOs promoting adherence to and implementation of UN nuclear weapon ban treaty.
- It evaluates nuclear-weapons-related policies and practices of each of the 197 states that are party/not party to global treaties on nuclear weapon reduction.

2.3 India US Relations

In Washington, DC, India and the United States had their fourth '2+2' dialogue.

More on the news

- In 2023, both parties anticipate India co-hosting the Indo-Pacific Armies Chiefs Conference (IPACC) and the Indo-Pacific Armies Management Seminar (IPAMS).
- They also signed a Memorandum of Understanding on Space Situational Awareness and committed to expanding bilateral space cooperation.
- Both countries hoped to expand the COVID-19 Learning Exchange virtual platform, which is funded by USAID to include more demographic groups in initiatives and allow cities and health officials to share best practices.

About India US relations

- India and United States enjoy a comprehensive global strategic partnership covering almost all areas of human endeavour, driven by shared democratic values, convergence of interests on a range of issues, and vibrant people- to-people contacts.
- India US relations have had a turbulent past. During cold war, India's policy of non-alignment and its relations with the erstwhile Soviet Union and the US-Pak alliance were major irritants.
- While the end of Cold War led to a gradual improvement in relations, these shifts came to a halt in May 1998 when India conducted nuclear tests and the US imposed wide ranging sanctions. With start of 21st century, there was a convergence of interests in a diverse set of issue-areas like:
 - Preventing Asia from being dominated by any single power,
 - Eliminating the threats posed by state sponsors of terrorism,

- Arresting the further spread of weapons of mass destruction and related technologies,
- Protecting the global commons, especially the sea lanes of communications etc.
- Current heightened cooperation between India and the US can be attributed to two major factors: global COVID-19 pandemic, and China's moves, both its domestic actions on the COVID-19 pandemic and in Hong Kong and increasingly provocative regional behaviour. Areas of engagements
- Trade and Economic relations: Trade and investment ties are a key aspect of U.S.-India bilateral relations. Bilateral trade in goods and services stood at US\$ 146 billion in 2019. In 2020, total U.S.-India merchandise trade (exports plus imports) accounted for about 2% of U.S. merchandise trade, and about 12% for India.
- India was the United States' 11th -largest overall goods trading partner; and the United States was India's largest merchandise export destination and third-largest merchandise import supplier (after China and the European Union).
- US replaced Mauritius as second largest source of foreign direct investment into India during 2020-21 with inflows of USD 13.82 billion. US is one of the top 5 investment destinations for Indian FDI.
- International cooperation: India and the United States cooperate closely at multilateral organizations, including the United Nations, G-20, Association of Southeast Asian Nations (ASEAN) Regional Forum, International Monetary Fund, World Bank, and World Trade Organization.
- During first Quad (India, Japan, United States & Australia) Leaders' Summit in March 2021, both countries reiterated their common vision for a free, open and inclusive Indo-Pacific region.
- Defence cooperation: India-US defence cooperation is based on "New Framework for India US Defence Cooperation", which was renewed for a period of ten years in 2015. India has procured defense items of around US\$ 21 billion from the US since 2008.
- US recognized India as a "Major Defence Partner in 2016.
- Several defense agreements have been signed like Logistics Exchange Memorandum of Association (August 2016); Communications Compatibility and Security Agreement (September 2018); Industrial Security Agreement (December 2019); Basic Exchange and Cooperation Agreement (October 2020).
- Bilateral military exercises like Yudh Abhyaas, Vajra prahar, etc. and defense exchanges are important aspect of deepening military-to-military cooperation. Two countries now conduct more bilateral exercises with each other than they do with any other country.
- In addition to a number of service-to-service exercises, in 2019 a tri-services exercise– Tiger Triumph- was conducted.
- S&T and Space Cooperation: India-US cooperation in Science and Technology has been growing steadily under the framework of the India-US Science and Technology Cooperation Agreement signed in 2005, which was renewed for a period of ten years in 2019.

- India and the U.S. have a long history of cooperation in the civil space arena in Earth Observation, Satellite Navigation, Space Science and Exploration. The ISRO and NASA are working together to realize a joint microwave remote sensing satellite for Earth observation, named NISAR.
- Diaspora/People-to-People ties: About 4.2 million Indian Americans/Indian origin people reside in the US. The Indian Americans (3.18 million) constitute the third largest Asian ethnic group in the US.
- Other areas of cooperation include Education, Health, Energy, cyber security, civil nuclear cooperation, Counterterrorism and Counter Narcotics etc.

Challenges in India US relations

- Economic sphere: The main divergences are pharma patents, data flows, e-commerce, and regulatory precision. On pharma, Americans want long term protection to monetize and recoup investments whereas Indians want lower cost and greater access. On data, the U.S. takes a light touch on privacy with basic consumer protections.
- India remained on the Priority Watch List of the U.S. 2021 “Special 301” report, which cited concerns like India’s patent treatment, high IP theft rates, and lax trade secret protection.
- U.S. is concerned about persisting investment barriers, due to India’s restrictive rules for e-commerce platforms and other issues affecting the investment climate, such as India’s regulatory transparency and localization policies.
- Two countries are locked in a ‘low intensity trade war’ through imposition of tariffs, thus restricting trade. United States has longstanding concerns over India’s tariff regime, especially in agriculture. India opposes the continued U.S. steel and aluminium tariffs, applied since 2018.
- Additionally, US had cancelled India’s developing country status under the Generalized System of Preferences (GSP) in 2019.
- Strategic and security sphere: Lack of a formal alliance does place some systemic limits which could manifest as differences.
- India remains reluctant to become fully plugged into US defence systems due to India’s longstanding
- commitment to non-alignment (and its post-Cold War variants of strategic autonomy/omni- or multi-alignment).
- India’s preference for India to be a pole in a multipolar world is also not entirely in concordance with an American view that does not see the benefits of multipolarity in the same way. Rather, U.S. global leadership and American primacy are Washington’s objectives.
- Further, given the U.S. withdrawal from Afghanistan, counter-terrorism cooperation between India and the U.S. may become more difficult.
- Countering America’s Adversaries through Sanctions Act (CAATSA): CASTSA, which restricts defence purchases from Russia, Iran and North Korea continues to be a sore spot in the relationship. Given that

Russia is a declared U.S. competitor and adversary, expanding and deepening India-Russia defense cooperation complicates and could limit what the United States does with, shares with, and sells to India.

- US has expressed concern regarding new streams of arms like the S-400 air defense system, because they diminish prospects for interoperability of and secure communications between U.S. and Indian forces, and preclude sharing of existing sensitive weapons technologies.
- Divergences on WTO issues: Two nations, at times, use the WTO to enforce trade rules and settle trade disputes against each other. US and some developed countries also are critical of India, China, and others for self-designating as developing countries to claim special and differential treatment under WTO rule.
- In 2021, US voiced support for the concept of a waiver of certain WTO IPR obligations for COVID-19 vaccines. But India and some other countries seek a broader WTO IPR waiver for COVID-19-related health products and technologies.
- Differences remain on other issues under negotiation, like e-commerce customs duties and fisheries subsidies.

Road Ahead

- Long term convergence: Notwithstanding the substantial disagreements between India and US on variety of issues, the relationship is too valuable to both the parties. US sees India's potential to be an important contributor to Asian security and prosperity.
- India's China challenge, regional and global aspirations, and increasing role in multilateral fora – and a growing acceptance of reliance on U.S. cooperation in these spheres ensure the two countries will continue to find convergence in the long term.
- Turning challenges into opportunities: Quad's support for India's pharmaceutical industry to help manufacture vaccines for global distribution and US's decision to avoid demanding that India quickly commit to net-zero emissions have transformed potentially prickly challenges into opportunities for cooperation.
- Managing differences by understanding each other's concerns: This was seen when US had allowed some exceptions to the Chabahar port from its sweeping sanctions on Iran, appreciation for India's inescapable dependence on Russian arms and recently both sides have shown willingness to understand each other's positions on Ukraine.
- Going forward, the Government of India could consider devoting some diplomatic capital to negotiate possible solutions to avoid sanctions (particularly when it impacts India's energy security) while maintaining its strategic relationship with the US.
- India expects greater openness from the United States to cooperation and understanding of Indian needs in emerging areas such as digital tech and e-commerce.

- There is also a need for deeper appreciation of Indian values that emanate from India's own unique history and politics.

2.4 Space Situational Awareness (SSA)

As a result of the inked MoU, space has become an increasingly important and vital aspect of India-US ties.

What exactly is SSA?

The activity of tracking objects in space, identifying them, defining their orbits, comprehending the environment in which they operate, and projecting their future positions and dangers to their operations is known as SSA.

SSA's Importance for India

- To protect space assets, SSA can assist with debris tracking, collision avoidance, threat prediction and monitoring (see infographic), and satellite anomaly detection.
- Space superiority: SSA aids decision makers in gaining and maintaining space dominance by providing information on opponent space operations, detecting adversary counter-space activities, tracking adversary missile launches, and so on.
- Dramatic rise in number of space objects: The advent of private players and the growing importance of the commercial sector has rapidly transformed the use of space. The number of objects in space is increasing exponentially, heightening the risk of collisions between space objects.
- o Currently there are a total number of 19,432 objects on orbit of which only 2216 are active satellites.

Steps taken in the light of importance of SSA

- ISRO has set up a Directorate of Space Situational Awareness and Management (SSAM) aiming at protecting high valued space assets from space debris close approaches and collisions.
- A control centre is being established at Bengaluru to systematically carryout all activities related to SSAM.
- It would host a range of activities pertaining to protection of Indian Space assets from inactive satellites, pieces of orbiting objects, near earth asteroids and adverse space weather conditions.
- It would assimilate the tracking data of inactive satellites from indigenous observation facilities and generates useful information from bare observations through analysis.
- It would also enable research activities pertaining to active debris removal, space debris modelling and mitigation.
- Network for space object Tracking and Analysis (NETRA) Project: It is an early warning system in space to detect debris and other hazards to Indian satellites.

- Currently there are 15 functional Indian communication satellites in the geostationary orbit of 36,000 km; 13 remote sensing satellites in LEO of up to 2,000 km; and eight navigation satellites in medium earth orbits which would come under its supervision.
- Global cooperation: India is an active member of Inter-Agency Debris Coordination Committee (IADC) and also engages in several initiatives with North American Aerospace Defense Command (NORAD).
- Multi Object Tracking Radar (MOTR): Currently used for proximity analysis, but when used in conjunction with NETRA and a dedicated Command Centre, it could drastically improve the observation accuracy of space assets.

2.5 India-Japan Relations

Cooperation in the following areas:

Economic and Commercial Cooperation:

- Since 2011, the two countries have had a Comprehensive Economic Partnership Agreement (CEPA), which boosts bilateral trade.
- Japan has invested approximately \$35 billion in India over the last two decades, primarily in the automobile, electrical equipment, telecommunications, chemical, and pharmaceutical industries.
- Japan is India's largest bilateral donor, with Japanese ODA funding some of the country's most important infrastructure projects, including the Delhi-Mumbai Industrial Corridor and the Ahmedabad-Mumbai High Speed Rail Link, among others.
- Following the supply chain interruptions caused by Covid-19, India and Japan have formed the Supply Chains Resilience Initiative with Australia (SCRI).



Defence and Strategic Cooperation:

- For long, India and Japan are working with Germany and Brazil for permanent membership of UNSC (as G4 or Group of Four).

- With start of 2+2 Dialogue (Foreign and Defence Ministerial Dialogue), defence and strategic cooperation between two nations has expanded beyond national boundaries.
- Quadrilateral Security Dialogue (Quad) between India, United States, Japan and Australia for Free and Open Indo-Pacific.
- Cultural Relations: Starting from 1st Cultural Agreement of 1957, India and Japan cultural relations have gone uphill through friendly exchanges and enhanced people-to-people contact.
- Skill Development: Japan has set up 12 Japan India Institute of Manufacturing. Also, Japan has offered to train 30,000 Indian youth in Japanese style manufacturing in the next 10 years.

Nuclear Energy	<p>After brief pause and economic sanctions on India post 1998 Nuclear Tests, in 2017 both nations signed an Agreement for Cooperation in the Peaceful Uses of Nuclear Energy, helping in-</p> <ul style="list-style-type: none"> • Enhanced Cooperation in energy security and Clean Energy, • Opening doors to commission global nuclear reactors with Japanese parts, and • Boost India's claim for NSG membership.
Space Cooperation	<p>In 2019, the first India-Japan space dialogue was organized for bilateral cooperation in space.</p> <ul style="list-style-type: none"> • Presently, ISRO and Japan Aerospace Exploration Agency (JAXA) are working on a joint lunar polarexploration (LUPEX) mission. • The mission aims to send a Lander and Rover to the Moon's south pole around 2024
India-Japan Digital Partnership (I-JDP)	<p>Launched in 2018 to take the Science and Technology of 1985 further through greater focus on 'Digital ICT Technologies'. This includes setting up a Startup Hub between India and Japan</p>
Emerging Technologies	<p>Launched 'India-Japan Emerging Technology and Innovation Fund' in 2019, a fund-of-funds for emerging technology startups in Internet of Things (IoT), Artificial Intelligence (AI), Machine Learning etc.</p>

Challenges in India-Japan Relationship

- Limited Success of CEPA: Despite elimination of tariffs over 90% of Japan imports and 97% of Indian imports by CEPA in 2011, the trade between two nations has grown marginally from \$13.1 billion in 2010 to \$17.6 billion in 2019.
- Rising Trade Imbalance: After initial pickup in Indian exports, the trade deficit between two nations has increased with Japan exporting \$12.7 billion goods (from \$8.3 billion in 2010), showing only one side increase
- The higher minimum standards on everything in Japan, further acts as entry barrier for Indian companies and products; reducing dynamism in investment.

- Difference on Cross-border Data Flow: While India is looking at data localization (e.g. RBI rules on payment systems), under 'Osaka Track' Japan along with number of other G-20 nations proposed standardization of cross-border data flow with international rule-making on e-commerce trade
- No Concrete Achievement by Asia-Africa Growth Corridor (AAGC): Since 2016 launch, AAGC has not been able to move much beyond vision statement or provide alternative to Chinese OBOR.

Way Forward

While the special strategic and global partnership between two nations allows them to work on strategic goals, both nations need to remove the anomalies of trade and accelerate their cooperation at the global stage. Based on values of trust and democracy, the partnership between two nations allows opportunities to overtake others and go beyond bilateral relations for truly global benefits of India-Japan relationship.

2. 6 India Turkmenistan Relations



The President of India conducted a state visit to Turkmenistan, marking the first time an Indian president has visited the country.

- In the domains of disaster management, financial intelligence, culture, and youth issues, both sides signed and exchanged four Memorandums of Understanding/Programs of Cooperation.
- A commemorative stamp commemorating the 30th anniversary of the establishing of diplomatic relations between India and Turkmenistan was also released.

About India Turkmenistan relations

- India enjoys close, friendly, and historical ties with Turkmenistan. Both countries share centuries-old civilizational and cultural linkages.
- Archaeological finds in south Turkmenistan have revealed contacts with Indus Valley Civilization. 'Turkmen Gate' built in Delhi in 1650's also testifies to centuries-old ties between India and Turkmenistan.

- India was one of the first countries to recognize Turkmenistan's independence in 1991 and establish formal diplomatic relations in 1992. It considers Turkmenistan as part of its extended neighbourhood.

Areas of engagement

- Political relations: India-Turkmenistan political relations have been warm and cordial. Institutional mechanisms between the two governments, namely Foreign Office Consultations (FOC) and Inter-Governmental Commission (IGC) furthers bilateral cooperation.
- Both cooperate under the India-Central Asia Dialogue mechanism as well.
- Trade & Commercial Relations: Total trade for the year 2019-20 stood at US\$29.97 million with India registering a surplus of US\$22.83 million.
- Major items of import from India include electronic and electrical items, machinery and woven apparel and pharmaceuticals etc. Exports to India comprises of fertilizers, cotton, inorganic chemicals (e.g. Iodine) etc.
- Education: India provides training for Turkmen nationals under its ITEC programme. Since the inception of the programme for Turkmenistan in 1994, over 400 Turkmen nationals have been trained in various courses. In addition, India provides ICCR Scholarships to students from Turkmenistan to pursue graduation, post-graduation and Ph.D.
- Culture: In 2015, Hindi Chair was established in Azadi Institute of World languages, Ashgabat where Hindi is being taught to university students. 'Vishwa Hindi Diwas' is celebrated in Turkmenistan every year. Indian Cinema and TV serials are popular with Turkmen people.
- Similarly, Indian music also holds a special place in the hearts of Turkmen people. Indian film festivals are held on regular basis in different cities in Turkmenistan. Central Asia's first Yoga and Traditional Medicine Centre was inaugurated in Ashgabat in July 2015.

Challenges in India Turkmenistan relations

- Connectivity concerns: The adverse geographic terrain and the thorny India-Pakistan border dynamic, greatly impedes connectivity, thereby curbing greater economic cooperation between India and the region.
- Further, planned connectivity projects are facing serious financial, political, and security challenges, frustrating oil and gas diplomacy. E.g., TAPI Project.
- Unrealised trade potential: Bilateral trade is far below its potential. Besides the physical barriers, factors such as trade regulatory hindrances and political fragility have often created obstacles in the free flow of trade.
- Security challenges: Security challenges include international terrorism, cross border terrorism, extremism, radicalisation, illegal migration, trafficking in narcotic drugs and psychotropic substances, and transnational organised crime.

Road Ahead

- Strengthening connectivity: Turkmenistan has conveyed readiness to join the International North-South Transport Corridor (INSTC) and also proposed that the Kazakhstan-Turkmenistan-Iran railway line could be a linked corridor of the INSTC to streamline movement of goods between Turkmenistan and India and beyond.
- During recent meet, Turkmenistan has agreed to examine India's proposals of ensuring integrity, safety and security of the project by integrating "the Business Principles" in various Agreements pertaining to TAPI gas pipeline project.
- Increasing cooperation in various sectors: Sectors like energy, petrochemicals, transport, communications, information and technology, textile, leather and footwear, chemicals, pharmaceuticals, renewable energy, etc. hold huge potential for greater cooperation between the two countries.
- Turkmenistan has also expressed interest in studying the possibility of joining the International Solar Alliance (ISA) and Coalition for Disaster Resilient Infrastructure (CDRI).
- Strengthening ties at geo-political level: Given the broad consensus between two countries on regional and global geo-political and economic issues, cooperation should be strengthened through enhanced interaction in the United Nations and other regional and international organisations.
- Greater attention to all facets of cultural cooperation: Cultural cooperation can be strengthened through regular Film Festivals, cooperation between museums, translation of literary work, digitization of manuscripts, restoration work related to cultural heritage archaeological survey, etc.

2.7 Maritime Rescue Co-ordination Centre

Bharat Electronics Ltd (BEL) and Sri Lanka have signed a Memorandum of Understanding to establish a state-of-the-art Maritime Rescue Co-ordination Centre (MRCC) in Colombo.

Maritime Rescue Coordination Centre Information (MRCC)

- MRCCs are part of an international network that monitors sea lanes under the auspices of the United Nations' International Maritime Organisation, with the goal of providing rapid response to emergencies such as ships in distress, people rescue and evacuation, and the prevention and containment of environmental disasters such as oil spills. The Navy or Coast Guard in each country coordinates the work of MRCCs.
- In India, the Coast Guard is the co-ordinating agency. In Sri Lanka, it is the Navy.
- The agreement appears to be part of India's SAGAR (Security and Growth for all in the Region) initiative in the Indian Ocean Region (IOR) and will also help in enhancing maritime security in the region.

2.8 'India Out' campaign Maldives

This measure was made to safeguard the Maldives' long-standing bilateral relations with India, as well as the country's national and regional security.

The 'India Out' campaign was viewed as a well-organized attempt to sabotage bilateral relations by instigating discontent.

One of the reasons for this was cooperation between the two sides in 2021 to develop a harbour on the Uthuru Thilafalhu (UTF) atoll for the Maldivian coast Guard as it was rumoured.

Maldives is strategically important for India due to

- Maldives' proximity to the west coast of India,
- its situation at the hub of commercial sea lanes running through Indian Ocean
- Both countries have signed a security cooperation pact with a credit line from India for capacity building in the maritime domain.
- Maldives is part of the Colombo Security Conclave (India initiated) which envisages peaceful cooperation in Indian Ocean along with Sri Lanka and Mauritius.
- India is constructing High Impact Community Development Project (HICDP) in various atolls of Maldives.
- India's approach for Maldives is driven by the vision of Security and Growth for All in the Region (SAGAR) to assist island nations in Eastern Indian Ocean.

2.9 India and the European Commission Agreed To Launch India- Eu Trade and Technology Council (TTC)

This strategic coordination framework would enable both partners to address challenges at the intersection of commerce, trusted technology, and security, deepening EU-India collaboration in these areas.

TTC symbolises India's heightened political importance in an uncertain global strategic climate, ranking first for India and second for the EU (after the US-EU TTC of 2021).

TTC will

- Provide political-level oversight to India-EU relationship.
- Resolve economic divergences for an early and comprehensive India-EU trade and investment agreement.
- Bring India-EU politically closer to address current challenges and geopolitical circumstances in Indo-Pacific region.
- Better coordination in multilateral bodies such as G20, WTO etc. on issues of mutual interest.
- India-EU relations date to early 1960s, with India being amongst the first countries to establish diplomatic relations with European Economic Community.

- EU as a block is India's largest trading partner.
- In 2004, relationship was upgraded to a 'Strategic Partnership'. In 2020 'India-EU Strategic Partnership: A Roadmap to 2025' was adopted.

2.10 India Gets Elected To Four UN Economic and Social Council (Ecosoc) Bodies

- ECOSOC is one of the six principal organs of the UN System established by the UN Charter in 1945.
- The 54-member ECOSOC is at the heart of the United Nations system to advance the three dimensions of sustainable development – economic, social and environmental.
- It is elected by the General Assembly.
- India was elected to the UN ECOSOC for the term 2022-24, last year, in the Asia-Pacific States category along with Afghanistan, Kazakhstan and Oman.

2.11 Raisina Dialogue 2022

- It is a multilateral conference committed to addressing the most challenging issues facing the global community, held annually in New Delhi since 2016.
- It takes its name from Raisina Hill- the seat of the Indian government.
- It is hosted by the Observer Research Foundation (an independent think tank) in collaboration with the Ministry of External Affairs.
- It has emerged as India's flagship conference on geopolitics and geo-economics.
- It brings together global leaders in policy, business, media, civil society, defense and foreign policy.

2.12 International Telecommunication Union (ITU):

- India secured leadership position in ITU's Council Standing Committee on Administration and Management.
- ITU, founded in 1865, is United Nations specialized agency for information and communication.
- It is governed by Plenipotentiary Conference and Administrative Council.
- Plenipotentiary Conference is supreme organ of the Union.
- ITU currently has a membership of 193 countries and over 900 private-sector entities and academic institutions.
- India has been a regular member of ITU since 1952.
- It empowers people around world through technology education and training.
- It supports communications in the wake of disasters and emergencies.
- Headquartered- Geneva, Switzerland.

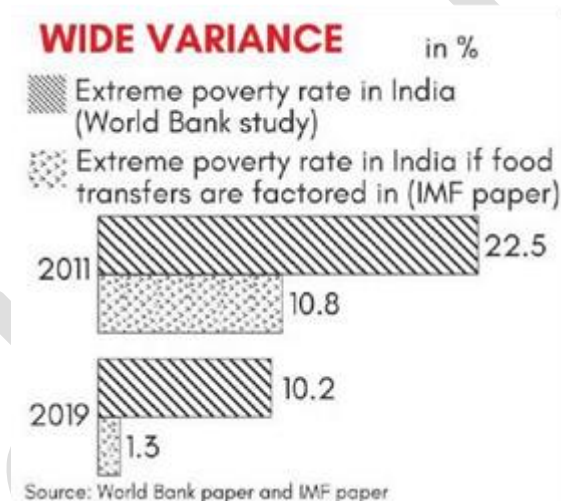
3. Economy

3.1 Poverty Estimates

Two divergent estimates of poverty and inequality in India were recently published by writers connected with the International Monetary Fund (IMF) and the World Bank (WB).

More information on News

- The World Bank research based its findings on the Consumer Pyramid Household Survey (CPHS) conducted by the CMIE (Centre for Monitoring Indian Economy) (from 22.5 percent in 2011 to 10.2 percent in 2019).
- In comparison, the IMF article claimed that India has practically eliminated extreme poverty, citing the Consumer Expenditure Survey and other data sets, including subsidy adjustments, to reach 1.3 percent in 2019 from 10.8 percent in 2011.



About poverty and various measures against poverty

- Poverty is broadly defined as the condition of people and communities who lack access to money and resources to enjoy a decent standard of living.
- Usually measured as absolute or relative poverty based on the poverty line or poverty line, people below this line / line are considered poor.
- Absolute or extreme poverty means lack of sufficient resources to secure basic necessities such as clean drinking water, food and sanitation.
- For example, people with daily income of less than \$ 1.9 on a Purchasing Power Parity (PPP) basis are considered very poor by the World Bank.
- Relative poverty represents the income and resource status of an individual or household and is considered appropriate or socially acceptable in the society in which they live.

- However, poverty has many aspects that change with time and place, resulting in various measures of poverty.

In India also a number of initiatives have been taken to measure poverty.

Starting from Dadabhai Naoroji to the recent National Multidimensional Poverty Index from NITI Aayog in collaboration with UNDP and Oxford Poverty and Human Development Initiative (OPHI).

But we still lack a common agreement on what poverty actually is and how it should be measured.

Importance of accurate Poverty Estimates

- Address the intergenerational cycle of poverty by overcoming the permanent disadvantages faced by children for enhanced productivity.
- Evidence-led policy making for targeted policy interventions and sustainable results.
- Bringing inclusive growth by addressing the inequalities and other issues of basic needs, learning and job opportunities.
- Ensure full and effective enjoyment of human rights by ensuring civil, social, and cultural participation
- Finding areas of social-economic discrimination within communities, some groups (e.g., person with disabilities) and within family. For instance, women face disproportionate burden of children, leading to the issue of time poverty.
- Time poverty is the state of having little time for self. It leads to poor food choices, health, mental stress etc. among women and girls. Challenges in accurate Poverty Estimation
- Availability of Data: Adoption of large number of indicators for poverty estimation have some theoretical justification but limited number of indicators are used because of dearth of data availability.
- Economist Bias: Calculation of poverty estimates is usually dominated by economists under the agencies responsible for collection of data on overall economy. It leads to use of income and consumption data as proxy indicators of actual well-being.
- Data Lag: Even within these data sets we can have significant lag in household data or data errors. E.g., the Consumer Expenditure Survey (CES) is conducted every five year and the 2017-18 CES data was withheld due to quality issues; almost 10 year of data lag on CES.
- Difficulties in adoption of indicators: Identifying and designing indicators which can offer meaningful comparisons between rich and poor sections of society/counties are difficult to design as the weights and range of variation of various elements tend to vary with context.
- Complexities in Qualitative data collection: Understanding poverty and well-being is a complex process due to India's high socio-economic diversity. Also, for such a large population, collecting comparable data on subtle and complex elements/sections of society like women is difficult. Conclusion The National Multidimensional Poverty Index created by NITI Aayog can be further improved using disaggregated data

on sub- indicators for targeted policy making with other steps such as:

- Collecting specific data based on gender, age, vulnerability etc.
- Shifting to a higher low middle income (LMI) poverty line of PPP (\$3.2 a day) for even higher efforts to reduce poverty.
- Using cost-effective high frequency surveys, i.e., income and consumption surveys based on economic modelling or wireless technology to capture real time poverty data.

3.2. Current Account Deficit (CAD)

India's current account deficit (CAD) was \$23 billion (2.7 percent of GDP) in the December quarter of FY2022, a nine-year high since the CAD hit \$31 billion in the December quarter of 2012.

- The Balance of Payments (BoP) tracks transactions in commodities, services, and assets between citizens of a country and the rest of the globe during a specific time period, usually a year.
- The current account can also be described as the difference between national (including public and private) savings and investment when looking at investment-savings dynamics.
- CAD is one of the two primary accounts in the Balance of Payments (BoP), and it keeps track of a country's exports and imports of goods and services, as well as transfer payments.
- When exports exceed imports, there is a trade surplus and when imports exceed exports there is a trade deficit.
- Transfer payments are receipts received by the residents 'for free', without any present or future payments in return. It includes remittances, gifts and grants. Capital account is the second account, recording all international purchases and sales of assets such as money, stocks, bonds, etc. for a specified time, usually a year.

India's CAD trend

- Trend in the past: India is a CAD country and it has faced BoP crisis in 1991 due to higher CAD, on account of increased oil prices, along with other reasons.
- Recent trend: In the last few years, it recorded few isolated quarters of Current Account surplus such as Q1 of 2021-22- after more than a decade gap but failed to sustain it (see image).
- Trends in merchandise and services trade: Behind the continued CAD of India is its trade deficit in Merchandise Goods as it has trade surplus in services, and it is the world's largest recipient of remittances (US\$ 87 billion).
- For instance, for FY 2021-22, Merchandise trade deficit was about US\$ 192 Billion whereas Services trade surplus was about US\$ 105 Billion.

Primary reasons behind India's CAD

- Increased domestic demand/consumer spending due to domestic economic growth which is reflected in revival of imports post-pandemic recovery.
- Uncompetitive exports due to unfavorable policies, exchange rate or lack of essential goods exports.
- Increased Energy imports due to increasing demand and lower domestic production. E.g., in 2021-22, India's domestic crude oil production fell by 2.67%.
- Rise in Global Commodity Prices, especially high import commodities such as crude oil, gas, coal, edible oils, gold, etc.

Potential threats from increasing CAD

Based on historical perspective, India can sustain a CAD of 2.5-3.0% of GDP without getting into an external sector crisis (Economic Survey 2021-22). But rising geo-political risks, elevated global commodity prices, new Covid-19 variants fear and looming threat of US monetary policy normalization can widen CAD with other threats such as:

- Pull out of foreign institutional investors or limited capital flow. E.g., the Taper Tantrum of 2013.
- Costly macroeconomic adjustments due to free fall in currency exchange rate.
- Inflationary concerns leading to further reduction in domestic savings, leading to lower investments or foreign borrowing to fund growth needs.
- In the short-term, such foreign borrowings may help a debtor but in the long-term it is worrisome due to concerns over returns from investors and rise in debt to GDP ratio.
- Payment imbalances, leading to BoP crisis as observed in the Asian Financial Crisis (1997) and the recent Sri Lankan crisis.

Recent contraction in Forex Reserves and import coverage are first signs of slowed or reversed capital flows. Between October 2021 and March 2022, Forex reserves contracted from US\$ 642 billion to US\$ 607 billion.

Way Forward

In order to be prepared to face external shocks, India should build higher Forex Reserves and further improve the external sector resilience through steps such as:

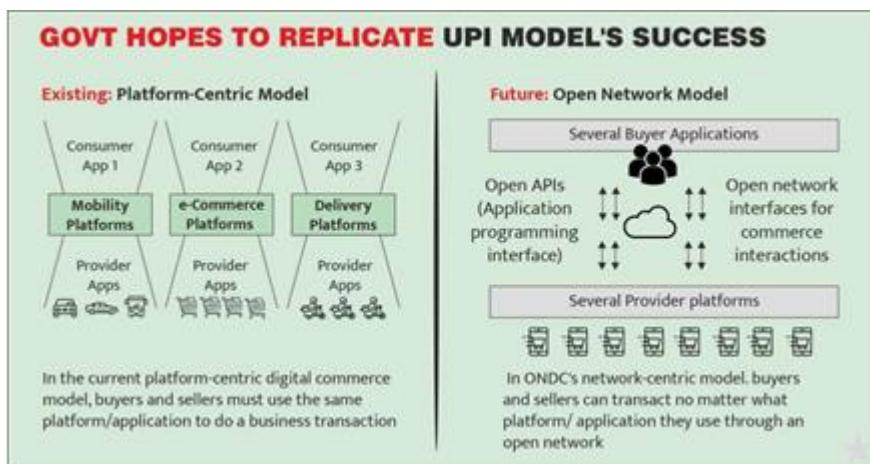
- Increase domestic production of oil and gas with faster adoption of renewable energy fuels such as solar, hydrogen etc.
- Import substitution under AtmaNirbhar Bharat with increased exports through best use of Free Trade Agreements.
- Fair valuation of Rupee can help in keeping the exports competitive. Also, steps can be taken to curb non-essential imports such as gold, mobiles, and electronics.
- Maintain Capital inflows through continued Ease of Doing Business reforms and gain investors'

confidence through FDI reforms for ease of flow of foreign investments.

- Starting Fiscal Consolidation through tight monetary policy to control inflation and promote savings to control CAD. For example, as suggested by the NK Singh Committee.
- For example, keep external debt to GDP ratio low, especially short-term debt due to higher volatility.

3.3. Open Network for Digital Commerce

Recently, Department of Promotion of Industry and Trade (DPIIT) launched the pilot phase of open network for digital commerce (ONDC).



More under the news

- Pilots aim to test end-to-end transactions in the ONDC architecture across a variety of platforms, including orders, payments, and deliveries.
- This will be done in 5 cities — Delhi, Bangalore, Coimbatore, Bhopal, And Shiron. It will then be expanded and deployed to 100 cities in 6 months. About Open Network (ONDC) for Digital Commerce
- The purpose is to promote open networks in all aspects of the exchange of goods and services via digital or electronic networks.
- ONDC goes beyond the current platform-centric digital commerce model, requiring buyers and sellers to digitally display and execute business transactions using the same platform or application.
- Therefore, under ONDC, buyers registered with Amazon (eg: For example, you can buy items directly from a seller who sells at Flipkart).
- ONDC shall be based on an open source methodology that uses open specifications and open network protocols that are platform independent.
- The ONDC project is modeled after the Unified Payments Interface (UPI) project, which allows buyers and sellers of goods in the e-commerce market to trade independently of the registered platform.

- UPI projects allow people to send or receive money regardless of the registered payment platform.
- This is a DPIIT initiative under the Ministry of Trade and Industry. The Indian Quality Council provides an integration of e-commerce platforms for this.

Significance of ONDC project

- Check domination of the e-commerce market by a few large platforms, such as Amazon and Flipkart, which have been accused of discriminating among sellers on their platforms and promoting certain seller entities in which they hold indirect stakes.
- India's e-commerce sector is expected to reach US\$111.40 billion by 2025 from US\$ 46.20 billion in 2020, growing at a 19.24% CAGR
- Level playing field: It will enable large-scale democratisation of digital commerce by providing a level playing field to both large and small merchants in the country. Small businesses would be able to use any ONDC compatible applications instead of being governed by specific platform centric policies.
- Wider access to sellers (especially kirana store owners): Adopting ONDC will significantly increase the discoverability of their businesses, while also lowering the cost of doing business, leading to better prices and profit margins for them in the long term.
- Overall development of the sector: It is expected to digitise the entire value chain, standardise operations, promote inclusion of suppliers, derive efficiencies in logistics and enhance value for consumers.
- Will help consumers: It is expected to make e-Commerce more inclusive and accessible for consumers as they can discover any seller, product or service by using any compatible platform. This would also give consumers the liberty to choose their preferred local businesses.

Concerns raised against ONDC

- Compete against the big players: Both merchants and buyers flock to Amazon and Flipkart because of their service quality that includes everything from smooth returns and refunds experience for buyers to merchant-onboarding processes.
- Quality of products: There are some ground-level challenges that ONDC shall have to face. For example, is the product delivered by the seller genuine or fake, did the customer receive the same product that he purchased etc.
- Establishing the technology: It will be the biggest challenge for ONDC as Amazon and Flipkart have been able to lure merchants and buyers due to their tested technology. DPIIT needs to build something comparable, if not better, to outdo rivals.

Conclusion

ONDC's success depends on how the government takes it forward and builds a seamless platform which is user-friendly and capable of giving a better shopping environment than Amazon and Flipkart. Also, a swift dispute resolution is required to enhance credibility of the platform.

3.4. Digital Banking Units

The Reserve Bank of India (RBI) has published Guidelines for Establishing Digital Banking Units (DBUs).

- This is part of the announcement made in the Union Budget 2022-23 to establish 75 DBUs in 75 districts to honour our country's 75th anniversary of independence (Azadi ka Amrit Mahotsav).
- A 'Committee for the Establishment of Digital Banking Units (DBUs)' was established in response to the budget announcement.
The RBI established this committee to lay out a plan for the establishment of DBUs.
- The RBI has finalised the guidelines based on the Committee's recommendations.

Key features of RBI's guidelines on DBU's

What are DBUs?	<ul style="list-style-type: none"> • DBUs are specialised fixed point business unit / hub housing certain minimum digital infrastructure for delivering digital banking products & services as well as servicing existing financial products & services digitally.
Who is permitted to start DBUs?	<ul style="list-style-type: none"> • All scheduled commercial banks (except Regional Rural Banks, Payment Banks and Lead Area Banks) with past digital banking experience are permitted to open DBUs in Tier 1 to Tier 6 centres without having the need to take permission from the central bank in each case. • These DBUs will be treated as Banking Outlets (BOs).
Infrastructure and resources	<ul style="list-style-type: none"> • Each DBU shall be housed distinctly, with the separate entry and exit provisions. They will be separate from an existing BO with formats and designs most appropriate for digital banking users. • Banks are free to adopt an in-sourced or out-sourced model for operations of the digital banking segment including DBUs.
Products and services	<ul style="list-style-type: none"> • Each DBU should offer a certain minimum digital banking products and services such as • Liability Products and services: Account opening, Digital Kit for customers and merchants etc. • Asset Products and services: Making applications for and onboarding of customer for identified retail, MSME or schematic loans etc. • Digital Services: Cash withdrawal and Cash Deposit only through ATM and Cash Deposit

	Machines respectively, Internet Banking Kiosk, Lodging of grievance digitally etc.
Other features	<ul style="list-style-type: none"> • Banks will have the options to engage digital business facilitator /correspondents to expand the virtual footprint of DBUs. • DBUs to offer hands-on customer education on safe digital banking products and practices for inducting customers to self-service digital banking services. <ul style="list-style-type: none"> o The district where the DBU is located will be the catchment area for the purpose. • There should be adequate digital mechanism to offer real time assistance and redress customer grievances, directly or through Business Facilitators / Correspondents.

What are Digital Banks?

- Digital Banks principally rely on the internet and other proximate channels to offer their services (like deposits, extend loans), and not physical branches.
- Globally, digital banking licenses go by different names: ‘virtual banks’ in Hong Kong, ‘internet-only banks’ in Korea and Taiwan and ‘digital banks’ in Singapore.
- It, essentially, combines online and mobile banking services under one umbrella.
- Online banking means accessing banking features and services via your bank’s website from your computer.
- Mobile banking means using an app to access many of those same banking features via mobile devices such as smartphones or tablets.
- Overall, three key models emerge in context of digital banks

Advantages of Digital Banks

- Light Banking approach: by reducing physical footprint with fewer brick and mortar branches.
- Efficiency enhancement: Typically, such banks apply a design thinking approach to a particular banking area and tailor their products and services in a manner that makes banking simpler and convenient to the end consumers.
- Meeting customer expectations: who are rapidly adopting technology in their daily lives.
- Improving financial inclusion: A substantial fraction of around 63.88 million MSMEs remain outside the ambit of formal finance, digital banks can enable last-mile financial inclusion as a lender can reach a wider customer base in a more cost-effective manner.
- Serving rural markets: It will accelerate and widen the reach of digital banking services as move will open the rural market for service providers besides providing a boost to credit flow.

- Easier to setup and can provide better services:
- They also require lesser staff, with cheaper maintenance due to technological tools and can provide better customer experience aided by technology.
- Supply side constraints in traditional brick and mortar banking: such as high transaction costs, lack of product innovation, low risk appetite, limited underwriting ability etc.

Limitations of Digital Banks

- Low public awareness: Due to low financial literacy in semi-urban and rural areas, offline presence may be necessary for educating and driving customers to online mode.
- Low internet and smartphone penetration in lower-tier cities will make adoption of services difficult.
- Building Trust: Unlike traditional banks, they don't have a physical presence, so customers cannot literally 'bank upon' them in case of any issues/challenges.
- Lack of regulations: Due to the absence of enabling regulations, neo-banks cannot accept deposits or offer lending products on their own books.
- Small range of services: as compared to a whole gamut of services that traditional banks offer. Besides, since these are highly digital focused, they may not be able to cater to the banking needs of non-tech savvy consumers.

Conclusion

In developed nations, digital banks have ushered in considerable efficiencies, reduced costs and significantly transformed many areas of old-world banking. In like manner, India needs to push the envelope and a well thought out strategy may have to be devised to overcome the constraints.

3.5. Standing Deposit Facility (SDF)

In the first bi-monthly Monetary Policy Review (FY23), the Monetary Policy Board (MPC) introduced the Permanent Depository Facility (SDF) as the floor of the Liquidity Adjustment Facility (LAF) Corridor. Standing Deposit Facility (SDF)

- SDF is a liquidity management tool for raising liquidity (deposits) from Siam Commercial Bank (SCB).

There are no collateral / government bonds in return.

- First recommended as a liquidity management tool by the Urgit Patel Commission "Expert Committee to Revise and Strengthen Monetary Policy Framework" in 2014.
- In 2018, Section 17 of the RBI Act of 1934 was amended to allow RBI to introduce SDF as an additional tool for absorbing liquidity without collateral.
- From 2022, SDF will replace the Fixed Rate Reverse Repo (FRRR) as the floor of the LAF Corridor, with an

interest rate of 3.75%.

- Deposits under SDF are not eligible to maintain the reserve requirement ratio (CRR) under Section 42 of the 1934 RBI Act, but to maintain the statutory liquidity ratio (SLR) under Section 24 of the Banking Regulations, 1949. Is a qualified asset. Law, 1949.

Need for SDF: Liquidity Surplus of India due to Covid-19

- Liquidity Management, the operating procedure of monetary policy, is the main instrument for central banks working under Inflation Targeting regime of the RBI (4% +/-2%).
- The inflation targeting regime was introduced in 2016 with a six-member Monetary Policy Committee, under Section 45ZB of the RBI Act (1934), to determine various policy interests to achieve the inflation targets.
- It involves use of various instruments to manage short-term or transient liquidity as well as durable liquidity under the Liquidity Management Framework. E.g., Targeted Long-Term Repo Operations (TLTROs), OMOs and SDF etc.
- In surplus since mid-2019 due to easing of monetary conditions, the liquidity in the system increased significantly during Covid-19 pandemic as the RBI offered liquidity facilities worth ₹17.2 lakh crore of which ₹11.9 lakh crore was utilized.
- While part of it had been returned or withdrawn, a liquidity overhang of ₹8.5 lakh crore is still in the system because of the extraordinary measures of the pandemic.
- Starting this year, RBI plans to absorb this liquidity in a gradual and calibrated withdrawal over a multi-year time frame in a non-disruptive manner to normalize liquidity management to pre-pandemic levels.
- As an additional tool, SDF will absorb liquidity to restore surplus liquidity in the system to a level consistent with the prevailing stance of monetary policy.

Benefits of SDF

- Absorbing Surplus Liquidity from banks flushed with excess money at higher interest rates to control inflation.
- Strengthening Operating Framework of monetary policy by removing the binding collateral or government security constraint on the RBI.
- SDF effectively empowers RBI with unlimited sterilization power on liquidity due to no binding security constraint.
- It will absorb the transient nature liquidity as it will be operated on an overnight basis, with the flexibility to absorb liquidity for longer tenor with appropriate pricing.
- SDF will be available at all days of the week including public holidays and weekends through e-Kuber portal.
- Restoration of the LAF corridor by narrowing the LAF width to 50 basis point or pre-pandemic

arrangement from the current 90 basis point at the bottom of the corridor.

- **The LAF corridor has now become symmetric around the policy repo rate with standing facilities on both ends-**

MSF as the ceiling to inject liquidity and SDF as the floor to absorb liquidity.

- Increased discretion of banks to access SDF and MSF unlike other LAF tools such as repo/reverse repo, OMO (Open market Operations) and CRR (Cash Reserve Ratio) which are available at the RBI discretion.

Potential issues with SDF

As SDF is a non-collateral open-ended instrument, it could lead to following issues-

- Arbitrage Opportunity for banks to deploy surplus liquidity with RBI via SDF rather than going for risks in lending to the private sector.
- Arbitrage refers to exploitation of short-lived variations in the price of identical or similar financial instruments in different markets or in different forms.
- Not a long-term instrument and needs to be supplemented by market related instruments like OMO during large capital net inflows to absorb durable liquidity. It is against the Urjit
- Patel Committee recommendation for alignment between liquidity management operations and market conditions.
- Potential issues of SDF in relation to impact on the balance sheet of RBI, impact on other instruments such as OMO and the Market Stabilisation Scheme (MSS) etc.

Conclusion

The near-term global outlook looks gloomy due to rising geo-political uncertainties, continued Covid-19 variant change threats, strained supply chains, elevated commodity prices and monetary policy normalization from US Federal Reserve to tame inflation. Introduction of SDF goes with the swift shifts in risk sentiments and tightening of global financial conditions to manage different risks.

But the effectiveness of SDF will depend upon ability to have simple and transparent implementation, absorption of surplus liquidity while keeping banking sector distortions to a minimum, and requirement of limited actions to offset its risks.

3.6. Coal Sector in India

The Coalition Cabinet recently approved a policy for land acquired under the Coal-Producing Areas (Acquisition and Development) Act (CBA Act) of 1957.

More in the news

- The CBA Law provides for the acquisition of land containing coal and its “transfer to state-owned enterprises” without any burden.
- Approved policies provide a clear policy framework for using the following types of land acquired under CBA law:
 - Land that is no longer appropriate or economically viable For coal mining activities;
 - Land where coal was mined / decarburized and the land was reclaimed.
- State-owned coal companies such as Coal India Ltd. (CIL) and its subsidiaries retain ownership of the land acquired under the CBA Act and the policy permits the lease of land only for the purposes specified in the policy.

Coal sector in India

- India has the fifth (when accounting for only proven reserves) largest coal reserves in the world. A cumulative total of 319.02 billion tons of Geological Resources of Coal have so far been estimated in the country.
- The Coal resources of India are available in older Gondwana Formations of peninsular India and younger Tertiary formations of north-eastern region.
- India is the second largest importer of coal. Coal accounts for almost 50% share in total installed generation capacity in India.
- As per the Draft National Energy Policy of Niti Aayog, the demand for coal is expected to rise in the range of 1.3-1.5 billion tonnes by 2030.

Issues in Coal Sector:

- Regulatory challenges: A stricter regulatory framework for land acquisition, resettlement and rehabilitation (R&R) and environment management leads to higher cost of compliance for access and extraction of coal.
- Limited technology use: Indian coal mining sector is still beset with relatively small-scale mining with limited mechanisation/scale of equipment. Approximately 87 per cent of the underground coal mines of CIL are either semi- mechanised or non-mechanised (manual).
- Import dependency: Although India has achieved significant reduction in import but still between 2012-13 and 2020- 21, coal imports fulfilled a little over a fifth of the demand (mainly from Indonesia, South Africa, Australia).
- Transportation challenges: Bottlenecks in domestic coal transportation and lack of proper road connectivity further increase the challenge. Also, availability of railway wagons and mismatch of demand and supply of wagons and coal offtake affect production capacity.

- High ash content in coal: It creates problems for coal users that include erosion, difficulty in pulverisation, poor emissivity and flame temperature and generation of excessive amounts of fly-ash containing large amounts of un- burnt carbon.
- More focus on renewable sources: India has been trying to reduce its dependency on non-renewable sources of energy to meet climate targets. Fierce competition from renewable energy sources are also contributing to stress in the coal sector.
- Poor financial state of DISCOMs: This has led to financial challenge in overall power sector. Several states, including Jharkhand and Maharashtra, have large outstanding dues to coal companies.
- Increased water stress: in the country is another factor that is providing significant headwinds to the coal energy sector. Coal-fired power plants require large amounts of water for cooling purposes.
- Safety issue in mining: When it comes to coal mining accidents, India has a higher proportion of deaths resulting from strata fall (or fall of the roof and sides of underground mines) than from the use of explosives.

Way Forward

- Simplifying regulations: Support in land acquisition and R&R related issues to ensure timely and smooth completion. Offering projects with secured clearances will boost timely development as well as increase the industry participation.
- Securing sustainable supply: Presently, India is mainly dependent on Indonesia and South Africa for import of thermal coal and on Australia for coking coal. New regulatory scenarios in these countries necessitate the requirement of intensive efforts in identifying new avenues for supply, like Mozambique, Columbia and others.
- Technology development: Steps need to be taken to promote research and exploration activities and modern underground mass production technologies which will also help in dealing with land acquisition related issues.
- Improvements in transport and infrastructure: Indian Railways, port authority and the industry need to work in close collaboration to plan development of infrastructural facilities as per requirements.

Reasons for recent coal shortage?

- Sudden surge in demand: can be attributed to the country's industries as they pick up operations after the second wave of the COVID-19 pandemic and the domestic producers of coal are unable to meet the demands.
- Rising heatwaves: added extra pressure on the nearly exhausted thermal power plants, as large parts of the country reeled under sweltering heat. Peak power demand is expected to hit a record high of 215-220 gigawatt (GW) in May-June.

- High international price of coal: The imported price of coal has shot up massively because of supply disruptions resulting from the Ukraine war. This led to a fall in imports, leading to the coal shortage.
- Poor performance of railway: Railway has thus far been unable to transport sufficient coal to thermal power plants to meet current demand and build up stock.
- Cash flow problem in the electricity sector: The inability of DISCOMs to recover costs has resulted in outstanding dues of over ₹1 lakh crore to power generation companies. Consequently, gencos default on payments to CIL.

Steps taken to address recent crisis

- Centre has allowed States to use its captive coal reserves up to 25% to meet growing domestic demand.
- Government cancelled several passenger trains to allow for faster movement of coal carriages. Indian Railways are also planning to add 100,000 more wagons to their fleet and construct dedicated freight corridors for faster delivery.
- Some states are looking to blend domestic and imported coal to augment stocks.

3.7. Semiconductor Manufacturing In India

The government's Rs 76,000 crore semiconductor mission would be guided by an advisory group, according to the Ministry of Electronics and Information Technology (MeitY).

More on the news

- The Minister of MeitY will chair the Committee, which will include representatives from government, industry, and academia. Vice-Chairperson will be Minister of State (MeitY).
- To help India create a long-term semiconductor and display ecosystem, the group will provide crucial inputs for:
 - Creating a resilient supply chain and encouraging investment
- Global engagement, financing methods
- Semiconductor research and development, as well as intellectual property generation

About Semiconductor

- A Semiconductor can be defined as a material that has the characteristics and ability to conduct a small amount of electrical current.
- Basic Electronic Components such as Diodes, transistors, and many photovoltaic cells contain semiconductive materials.
- The electrical conductivity of a semiconductor device can be controlled over a wide range, either permanently or dynamically. The basic requirement of a semiconductor is that it should not be a very

good conductor of electricity, nor should it be a very bad conductor of electricity.

- Semiconductors work due to imbalance of electrons that carry negative charge. This imbalance of electrons generates positive charges (WHERE THERE ARE EXCESS PROTONS) and negative charges (WHERE THERE ARE EXCESS ELECTRONS) at two ends of surfaces of the semiconductor material.

Significance of semiconductor manufacturing in India

- Insulation of domestic sector from global supply disruptions: World is facing a severe crunch of semiconductors due to supply disruptions triggered by the prolonged impact of the Covid-19 pandemic. Several companies in India have been forced to curtail production as a result.
- Supplies were affected by a sudden spike in demand for gadgets during the coronavirus-induced lockdowns, chip hoarding by manufacturers, sanctions against Chinese technology companies, the US-China trade war and roll out of 5G infrastructure.
- Fulfill growing demand: Rapid digitization, coupled with technological advancements in the capacity for intelligent computing and growth of AI has led to the unprecedented demand of semiconductors and chipsets across the world, including India, for manufacturing tech-enabled products.
- According to MeitY, Indian semiconductor market, estimated around \$15 billion in 2020, is expected to grow to around \$63 billion by 2026.
- The Indian government's stress on the need for adoption of electric vehicles has also led to an increased demand for chips. For instance, a normal car typically uses roughly 300 chips, whereas one new electric vehicle can have up to 3,000 chips.
- Reducing imports and achieving self-sufficiency: India imports 100% of its chips from Taiwan, Singapore, Hong Kong, Thailand, and Vietnam. Semiconductor manufacturing in India would not only help domestic companies reduce dependence on semiconductor imports, but also generate revenue from exports to other countries.
- It could also go a long way in establishing the country as a global hub for electronics goods, besides creating jobs and attracting investments from top firms around the world.
- Multiplier effect: Developing domestic semiconductor manufacturing capabilities will have a multiplier effect across different sectors of the economy and will contribute significantly to achieving a USD 1 trillion digital economy and a USD 5 trillion GDP by 2025.
- Strategic importance: Domestic capabilities are a key to the security of the country's critical information infrastructure, digital independence or sovereignty, and technological leadership. Self-sufficiency would give India a far better global positioning in terms of geopolitics.
- Challenges in semiconductor manufacturing in India
- Complex value chain: The semiconductor value chain has three major components: Design, Fabrication, and Assembly and Testing. The chip design component is highly dependent on Research and

Development (R&D) and Intellectual Property (IP) protection, and hence extremely expensive.

- Though many foreign companies have their R&D divisions in India, inadequate IP protection and contract enforcement limit the extent to which such companies can collaborate with Indian companies.
- Further, the semiconductor value chain is characterised by an incredible amount of interdependence. Companies focus on their niche and add specific value to different stages of production. For example, a few companies from the United States and South Korea dominate the design stage, while Taiwan holds a significant share of fabrication and assembly markets.
- Thus this is an exceptional industry where monopolies exist, but none of them is self-sufficient.
- Massive investment: Semiconductor manufacturing is a complex, capital and technology intensive process. Semiconductor Fabrication facility requires many expensive devices. Estimates put the cost of building a new fab over one billion U.S. dollars with values as high as \$3–4 billion not being uncommon.
- Further, relatively low margins in manufacturing of substrates (which transmit user instructions to a computer's chips and relay the answers), long gestation and payback periods also hampers investment.
- Requirement of specific raw materials: Silicon is a very basic & most commonly used raw material in semiconductor fabrication. Apart from silicon, Germanium & Gallium arsenide and Silicon carbide are also sometimes used in fabrication process.
- Also numerous types of chemicals & gases are involved in semiconductor fabrication which may need to be imported.
- Lack of uninterrupted power and water supply: In addition to the huge cost, manufacturing even a single chip requires hundreds of gallons of pure water, which may also be hard to find in India in the required quantities. An uninterrupted power supply is also another major hurdle.
- Because the process is very delicate, even a brief outage or power spike might cause it to come to a standstill, which can take hours or days to recover from.
- Others: Lack of long-term stable policies, constant price pressure from other global players, ever-changing innovations and rapid changes in technology etc.
- Initiatives taken for semiconductor manufacturing in India
- Semicon India Program (Program for Development of Semiconductors and Display Manufacturing Ecosystem in India): With a total outlay of INR 76,000 crore, it aims to provide financial support to companies investing in semiconductors, display manufacturing and design ecosystem. Under the programme, **four schemes have been introduced**
 - Scheme for setting up of Semiconductor Fabs in India,
 - Scheme for setting up of Display Fabs in India
 - Scheme for setting up of Compound Semiconductors / Silicon Photonics / Sensors Fab and Semiconductor Assembly, Testing, Marking and Packaging (ATMP) / OSAT facilities in India
 - Design Linked Incentive (DLI) Scheme (Chip Design Infrastructure Support, Product Design Linked

Incentive and Deployment Linked Incentive)

- India Semiconductor Mission (ISM): It has been setup as an Independent Business Division within Digital India Corporation to drive India's long term strategies for developing semiconductors and display manufacturing facilities and semiconductor design ecosystem.
- It will serve as the nodal agency for efficient, coherent and smooth implementation of the schemes.
- Attracting Foreign capital: In early 2021, the Indian government sought proposals from interested applicants to either setup (and/or expand) semiconductor wafer/device fabrication plants (FABs) in India or their acquisition outside India. The notification about the Expression of Interest was available in Korean, Japanese, Hebrew, and Chinese, an indication of the expected investment interest from foreign players.
- Also, the Government has allowed 100 percent FDI under the automatic route for the electronics sector.
- Modified Special Incentive Package Scheme (M-SIPS): To boost semiconductor industry, the Union Budget of 2017- 18 increased the allocation for incentive schemes, such as the M-SIPS and the Electronic Department Fund (EDF).

Road Ahead

- Strengthening infrastructure: Infrastructure is critical to supply chain strategy, and it must incorporate capacity planning, logistics, and manufacturing outsourcing in addition to production and quality control.
- Conducive and stable policies: Because the semiconductor value chain is interrelated and linked with several industries, governments must develop policies that address all the crucial characteristics in the long run. Government policies should also focus on assuring and securing access to foreign technology suppliers through trade and foreign policy to ensure a global level of collaboration.
- Focus on Power semiconductors: Power semiconductors have a different structure than ordinary semiconductors, which allows them to withstand high voltages and big currents without damage. They are essential for the efficient and sustainable use of energy because they can transfer energy across vast distances with low losses.
- Thrust on clean energy: Power semiconductor manufacturers believe that Gallium Nitride (GaN) and Silicon Carbide (SiC) based devices hold the key to addressing a primary hurdle for expansion of renewable energy as it provides scalable power conversion and storage solutions.
- Lessons that India could learn from other countries
- China. China has a large share of the global market in OSAT (Outsourced semiconductor assembly and test) and is now expanding on integrated circuit (IC) design. This is majorly due to the low labour and manufacturing costs and the progressive initiatives by the government.
- Taiwan: Taiwan has developed an atmosphere in which the semiconductor industry could thrive and earn an international reputation, thanks to public policies such as subsidies, tax breaks, and public

infrastructures such as the creation of major research and industrial parks.

- South Korea: The key competitive advantage of the South Korean semiconductor industry is in the production of memory semiconductors, which it achieves by utilizing its low-cost workforce in the labour-intensive process of semiconductor manufacturing.

3.8 Reserve Bank of India Releases Its Annual 'Report On Currency And Finance (Rcf)' For The Fy 2021-22

- The theme of the Report is “Revive and Reconstruct” that provides a strategy for medium-term steady economic growth of 6.5-8.5%.
- Key observations
 - Indian economy is likely to take over 12 years to overcome the COVID-19 losses.
 - Capital infusion has helped Public Sector Banks improve their CRAR to 14.3 per cent by December 2021 from 11.8 per cent in March 2016.
 - Amount recovered through Asset Reconstruction Companies (ARCs) dipped in recent years before getting revived to 41 per cent in 2020-21.
 - Inflation due to Russia-Ukraine crisis and deglobalization are other key challenges that the economy is facing.
- **Recommendations**
 - To avoid the moral hazard problem in recapitalisation of PSBs, an incentive mechanism should be established and banks with better performance should be given priority in terms of access to fresh capital.
 - Strengthen infrastructure of the Insolvency and Bankruptcy Code by increasing the number of NCLT benches.
 - Ensure adequate disclosures about risk factors affecting business to maintain investors' confidence in the primary market.
 - Care needs to be taken to protect the stakeholders from digital frauds, data breaches and digital oligopolies.

3.9 Ways and means advances (WMA)

RBI recently lowered the limit for State and UT ways and means advances (WMA).

- In light of the improving pandemic situation, the RBI reduced the WMA for States and UTs from 51,560 crore to 47,010 crore.
- In 2021, RBI raised the WMA limit due to COVID-19-related uncertainty.

About Ways and Means Advances (WMA)

- WMA was introduced in 1997 and the practice of issuing ad hoc Treasury Bills to replenish Central Government's cash balance was discontinued.
- Under RBI Act 1934, WMAs are temporary advances given by the RBI to Centre and States to tide over any mismatch in receipts and payments.
- Such advances are repayable within three months from the date of making that advance. Interest is charged at existing repo rate (rate at which RBI lends short-term money to banks).
- WMA is not part of the Fiscal Responsibility and Budget Management Act (FRBM) because they get paid within the year itself.

Two types of WMA –special and normal

- Special WMA or Special Drawing Facility is provided against the collateral of the government securities held by the state. After the state has exhausted the limit of SDF, it gets normal WMA.
- The interest rate for SDF is one percentage point less than the repo rate.
 - In addition to WMA, the OverDraft facility is also provided whenever financial accommodation to a State exceeds its SDF and WMA limits.
 - There is a State-wise limit for the funds that can be availed via WMA. These limits depend on factors such as total expenditure, revenue deficit and fiscal position of the State.
- Limits for WMA are decided by the government and RBI mutually and revised periodically.

Importance of Ways and Means Advances (WMA)

- Increased WMA limit for States to borrow short-term funds from the RBI provides a financial cushion when there's uncertainty in revenue collections due to stressed economic conditions.
- WMA funding is much cheaper than borrowings from markets and can be an alternative to raising longer-tenure funds from the markets.

3.10 Counter-Cyclical Capital Buffer

- **RBI has decided not to activate CCCB.**
 - Framework on CCCB was put in place by RBI in 2015.
- Following Basel-III norms, central banks specify certain capital adequacy norms for banks in a country. CCCB is a part of such norms and is calculated as a fixed percentage of a bank's risk-weighted loan book.
- **Aim of CCCB regime is two-fold:**
 - It requires banks to build up a buffer of capital in good times which may be used to maintain flow of

credit to the real sector in difficult times.

- Restricting the banking sector from indiscriminate lending in the periods of excess credit growth that have often been associated with the building up of system-wide risk

3.11 Rbi Tightens Non-Banking Financial Company (Nbf) Lending and Disclosure Guidelines

- These guidelines are meant to further harmonize regulations between banks and non-banks.
 - It builds on the RBI's scale based regulations whereby NBFCs are graded into 3 layers.

Key highlights

- Aggregate exposure of an upper layer NBFC to any entity must not be higher than 20% of its capital base, although the board can approve an additional 5%.
- However, for infrastructure finance companies, the aggregate limit will be 30% to a single entity.
- To a group of connected entities, aggregate exposure will be limited to 25% of the capital base for all upper layer NBFCs apart from infrastructure finance companies where it will be 35%.
- Unless sanctioned by the board, mid-layer and upper layer NBFCs shall not lend more than Rs 5 crore to directors, CEO or relatives of directors.
- They also cannot lend to any firm in which any of their directors or their relatives are interested as a partner, manager, employee or guarantor.
- Loans can be provided to the real estate sector after the borrowers have obtained prior permission from the government or other statutory authorities for the project.

3.12 Central Government Amends Nidhi Rules, 2014

Development comes amid a sharp rise in number of 'Nidhi' companies and is aimed at improving their governance and safeguarding public interest.

Key amendments

- A public company set up as a Nidhi with share capital of Rs. 10 lakhs needs to first get itself declared as a Nidhi from Union government.
- Earlier, there was no such need for a company to get declaration.
- Promoters and Directors of company have to meet the criteria laid down in rules.

About Nidhi company

- Similar to a Non-Banking Financial Company, a Nidhi is formed to borrow and lend money to its members. It inculcates saving habits among its members and works on the principle of mutual benefit.

- Not required to get an RBI licence but need approval under the Companies Act.
- Ministry of Corporate Affairs regulates its operational matters and RBI has the power to issue directions for its deposit-taking activities.

Can't deal with chit funds, hire-purchase finance, leasing finance, insurance or securities business. It is strictly prohibited from accepting deposits from or lending funds to, any other person except members.

- Only individual members are allowed in Nidhi companies.

3.13 Foreign Exchange Management Act (FEMA), 1999

- New rules allow foreign investment of up to 20 per cent in LIC and other such corporate bodies.
- Presently, the foreign inflows' ceiling for public sector banks is 20 per cent under government approval route.
- Foreign Exchange Management Act (FEMA), 1999, under Finance Ministry, consolidates and amend laws relating to foreign exchange for facilitating external trade and payments and for maintenance of foreign exchange market in India.
- It replaced the Foreign Exchange Regulation Act (FERA) and extends to whole of India.

3.14 Women Workforce

- According to Ministry of Labour and Employment (MoL&E), as of March 2022, more than 270 million workers have registered on the e-Shram portal, out of which nearly 53% are female and 47% are male.
- Large presence of female workforce is seen in agriculture sector followed by domestic and household workers, construction, and apparel sectors.
- Tamil Nadu, Meghalaya, and Kerala have highest registrations of female workers.
- Nearly 62% of workers are in the age group of 18–40.
- Reasons of increasing women registrations
- Intervention by grassroots organisations that work closely with women's groups in both rural and urban areas.
- 94% of women workers are part of informal economy.
- Started in August 2020, e-Shram portal is the first national database of unorganized workers in the country.

Issues associated with portal

- It has not been successful in collecting information on migrant workers, which was its mandate in the first place.
- Exclusion of the most marginalized amongst the workforce.

- Lack of clarity on data collection and how the registry will expand social and security benefits for workers.

3.15 Smart Cities Mission

- During the conference, the Smart Cities Mission and the World Economic Forum will launch a "virtual centre for collaborations on urban transformation" to exploit emerging technology and innovations.
- AMPLIFI (Assessment and Monitoring Platform for Liveable, Inclusive, and Future-ready Urban India) portal, Urban Outcomes Framework 2022, Artificial Intelligence Playbook for Cities
- The MoHUA also declared that by August 15, 2022, all smart cities will have Integrated Command and Control Centres (ICCC).
- The ICCC provides inhabitants with services like as traffic management, health, and water. ICCC is already in use in 80 smart cities.

About Smart Cities Mission

- It is a centrally sponsored scheme (launched in 2015) to drive economic growth and improve quality of life of people by enabling local area development and harnessing technology.
- 100 cities have been selected through a two-stage National competition.
- Central Government to provide financial support to the extent of ₹48000 crores over 5 years i.e. on an average ₹100 crores per city per year.
- An equal amount is to be provided by State/Urban Local Bodies. Emphasis has been given on public private partnerships.

3.16 India's 9th Hydrocarbon Basin

- ONGC is planning to commercialise the Vindhyan Basin, a Proterozoic transcontinental basin in the Indian shield's centre section.
- The Son-Narmada Geofracture in the south, the Great Boundary Fault in the west, the Monghyr-Saharsa Ridge in the east, and the Bundelkhand Massif and Indo-Gangetic Plains in the north define the Vindhyan Basin.
- In 2020, the Bengal basin joined the Krishna-Godavari (KG), Mumbai Offshore, Assam Shelf, Rajasthan, Cauvery, Assam-Arakan Fold Belt, and Cambay basins as India's eighth producing basin.
- Hydrocarbons commonly occur in sedimentary basins and are absent from intervening areas of igneous and metamorphic rocks.
- Sedimentary basins are the low areas in the
- Earth's crust and are of tectonic origin.
- They are formed over hundreds of millions of years by the combined action of deposition of eroded

material and precipitation of chemicals and organic debris within water environment.

- India has 26 sedimentary basins, covering a total area of 3.4 million square kilometers with 49% of it located on land, 12% in shallow water and 39% in the deepwater area.

3.17 Kwar Hydroelectric Project

- The Cabinet has approved the 540 MW Kwar Hydroelectric Project in Jammu and Kashmir's Kishtwardistrict to harness the Chenab River's immense hydro potential.
- The Chenab basin has an estimated hydropower capacity of 11,283 MW.
- A number of hydroelectric (HE) projects (running or under-construction) are initiated to harness this potential such as:
- Baglihar HE Power project; Dulhasti Power Station; Salal Power Station; PakalDul HE Project; Kiru HE Project; Kirthai-II HE Project.

4. Security

4.1. Cryptocurrency Crimes

For the first time, the Bureau of Police Research and Development (BPRD), a think tank under the Ministry of Home Affairs (MHA), has established a standard operating procedure for Indian law enforcement agencies on how to investigate crypto crimes and seize and preserve cryptocurrencies.

More on the news

- Illicit cryptocurrency transactions were predicted to be worth \$14 billion in 2021, up from \$7.8 billion the previous year.
- There are currently no national guidelines for cryptocurrency-related issues, which causes enforcement agencies to struggle, especially in terms of seizure and locating suspects.
- Cryptocurrency and anonymous exchanges where digital currency may be transacted have emerged as important tools for cyber extortionists.
 - Cryptocurrencies can be used either as a tool or target in the facilitation of cybercrimes, including cyber money laundering, cyber extortion, phishing, hacking, cyber fraud and other financial crimes such as Ponzi and investment scams.

India's provisions to control cryptocurrency crime

- Cryptocurrency and Regulation of Official Digital Currency Bill, 2021: It is not yet tabled in Parliament. It seeks to ban all cryptocurrencies based on the risks associated with them such as potential use for money-laundering, risks to consumers and threat to the country's financial stability.
 - Also, it seeks to create a facilitative framework for the creation of the official digital currency to be issued by the Reserve Bank of India.
- Prevention of Money Laundering Act 2002 (PMLA): Provisions of PMLA has been used by ED to prosecute offenders in 2020 for facilitating the foreign-related companies to launder the PoC (Proceeds of crime) by converting money generated into cryptocurrency and thereafter transfer to foreign countries.
- Indian Penal code, 1860 (IPC): Section 420 of IPC penalizes cybercrimes like creation of Bogus websites, cyber frauds like password thefts are punishable with a seven-year jail term and/or fine.
 - For example, Crypto scams include phishing websites designed to steal sensitive information from users, as well as ponzi schemes and fake investment plans like Morris Coin.
- Information Technology (IT) Act, 2000: Section 66C of IT Act, deals with Identity theft using passwords, digital signatures, biometric thumb impressions or other identifying features of another person for fraudulent purposes.

- In 2019, the cryptocurrencies worth Rs 30.85 lakh were stolen from a West Delhi businessman's wallet. How cryptocurrency is threat to the nation?
- Internal security: o Terrorism: There is wider use of cryptocurrencies on the dark net for terror acts and drug trafficking by militant organisations. For instance, ISIS, is posing a severe threat to the national security and a big challenge to security agencies in India.
 - Money Laundering: Cryptocurrency market isn't universally protected or regulated like Banks, thus is increasingly used to launder money. In 2019, criminal entities laundered approximately \$2.8 billion through crypto asset exchanges.
 - Cryptocurrencies transactions when done on the dark net like TOR, Freenet, Zero-net and Perfect-dark, becomes untraceable for the security agencies.
 - Anonymity: While all transactions are transparent on blockchain, it is difficult to pin a wallet to a physical person. As a result, it's a safe haven for criminals who carry out ransomware attacks, crypto exchanges hacks and carry out transactions in bitcoins.
 - Extortion and Ransomware: Cryptocurrency is sometimes used as payment for extortion because the money trail is difficult to trace.
 - Ransomware is software that takes over a computer and does not allow access to its files until a ransom is paid, usually in cryptocurrency.
 - Tax evasion and avoidance: Anonymity offered by the cryptocurrency ecosystem makes it difficult for tax authorities to trace transactions to individuals and verify their tax liabilities.
 - Individual: Criminals can break into crypto exchanges, drain crypto wallets and infect individual computers with malware that steals cryptocurrency as well as steal personal information and data.
 - Environment: Crypto miners employ sophisticated, energy intensive machines to solve complex algorithms in exchange for cryptocurrency. The energy used by these crypto operations has a large portion come from coal-fired power plants which produce significant CO2 emissions thus increasing ecological footprint.
 - Others: o Investment risk: Risks associated with digital currencies vary for different stakeholders, including financial institutions, non-financial firms, and investors. The biggest threat is the investment risk as Cryptocurrencies have no fundamental value, and therefore could drop to zero at any time.
 - Regulatory: Countries may prevent the use of the currency or may state that transactions break anti money laundering regulation (AML). A single AML approach is difficult to design, due to the complexity and decentralized nature of the Bitcoin as well as the significant number of participants such as senders, receivers, processors, currency exchanges etc.

Way forward

- Individual Crypto wallet: As per BPRD guidelines, law enforcement agencies must have their own crypto

wallet to store seized virtual digital assets, and they need for liaise with crypto exchanges to block a suspect's wallet or resetting the keys to defuse transactions in an ongoing investigation.

- Proper regulations: Regulatory and financial bodies should develop regulations to minimize risk and increase compliance in a constantly and fast-growing crypto asset industry. o For example, financial institutions can implement the measures recommended by the Financial Action Task Force (FATF) and stay compliant with the new and latest regulations.
- Fraud detection: There is need to follow obligatory guidelines for financial institutions and crypto asset business to operate in India.
- Blockchain technologies should implement automated AML fraud detection that would block or flag suspicious transactions prior to them being carried out.
- Legal framework: There is urgent need to have a Cryptocurrency Regulation Bill in India to regulate and deal with cryptocurrency crimes.
- Awareness: To reduce the risk associated with cryptocurrency theft, there is need to educate and inform people about keeping their personal keys to access crypto-wallet safe.

4.2. Financial Action Task Force (FATF)

The Finance Minister recently attended the FATF Ministerial Meeting, where the FATF's strategic priorities for the years 2022-24 were endorsed. Task Force on Financial Action (FATF)

- It is an intergovernmental organisation founded in 1989 to combat money laundering, terrorist financing, and other challenges to the international financial system's integrity.
- It currently has 39 members, including India.
- FATF analyses money laundering and terrorist financing strategies and regularly enhances its standards to handle emerging dangers.

FATF Recommendations are recognised as the global anti-money laundering (AML) and counter-terrorist financing (CFT) standard.

- FATF also works to stop funding for weapons of mass destruction.
- Decisions are made by the grouping on a consensus basis, as they conduct reviews of countries on AML/CFT parameters (called "Mutual evaluations").
- India has faced three rounds of mutual evaluations and cleared them and faces the fourth round this year. Significance of FATF
- Combating terrorism and money laundering: It helps countries to build the capacity to fight terrorism and trace terrorist money and to successfully investigate and prosecute money laundering and terrorist financing offences.
- Promote international cooperation: The FATF process will also help in co- ordination of AML/CFT efforts

at the international level as most of these activities are global in nature.

- Better legislations for AML/CFT: As a policy-making body, FATF works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas.
- Act against new and emerging threats: FATF identifies emerging trends and methods used to launder money and it suggests measures to combat them.
- More focused approach: FATF runs differently from other multilateral agencies, as its primary focus is on reviewing all actions through a “technical” not a political prism, and frowns upon countries bringing bilateral issues to the forum. Challenges faced by FATF
- Project interest of selected nations: Critics believe that on behalf of the interests of a few select states (EU Member States, US) it imposes regulations that are illegitimate and costly.
- Lack of transparency in working: Meetings of the group are carried out behind closed doors, and deliberations are not publicised. FATF has also penalised countries that have disclosed the contents of its meetings.
- Difficulty in domestic coordination: A large part of this difficulty arises from the challenges in reaching a mutual understanding of what the FATF recommendations mean and how a country should judge its performance relative to the recommendations.
- Capacity constraints of countries: This includes difficulties in investigating and prosecuting high- profile cross-border cases and preventing anonymous shell companies and trusts being used for illicit purposes
- Operational challenges: Inadequate, weak and selective enforcement of AML/CFT provisions, unclear confiscation Regime, Ineffective penalties etc. are some of the reasons why the FATF strategy has not been more successful.
- New-age Challenges: including bitcoins and cyber currencies, illegal trafficking of wildlife as a source of funding, use of artificial intelligence in terror attacks and biowarfare have emerged as part of the wider challenge of the coronavirus pandemic.

Way Forward

- Better regulatory framework: Continue to broaden regulatory frameworks to include non-financial sectors, ensuring adequate supervision and implementation of adequate, proportionate, and dissuasive sanctions when needed.
- Improved international cooperation: Countries should establish dedicated liaison officers overseas to facilitate exchanges and joint investigations into complex cases involving multiple jurisdictions.
- Better Compliance mechanism: Compliance with AML/CFT legislation requires a multi-layered and coordinated response from financial institutions and government.
- Enhanced cooperation with private sector: It will provide ability to better identification, understanding and management of money laundering, terror financing; greater auditability and accountability; Reduce

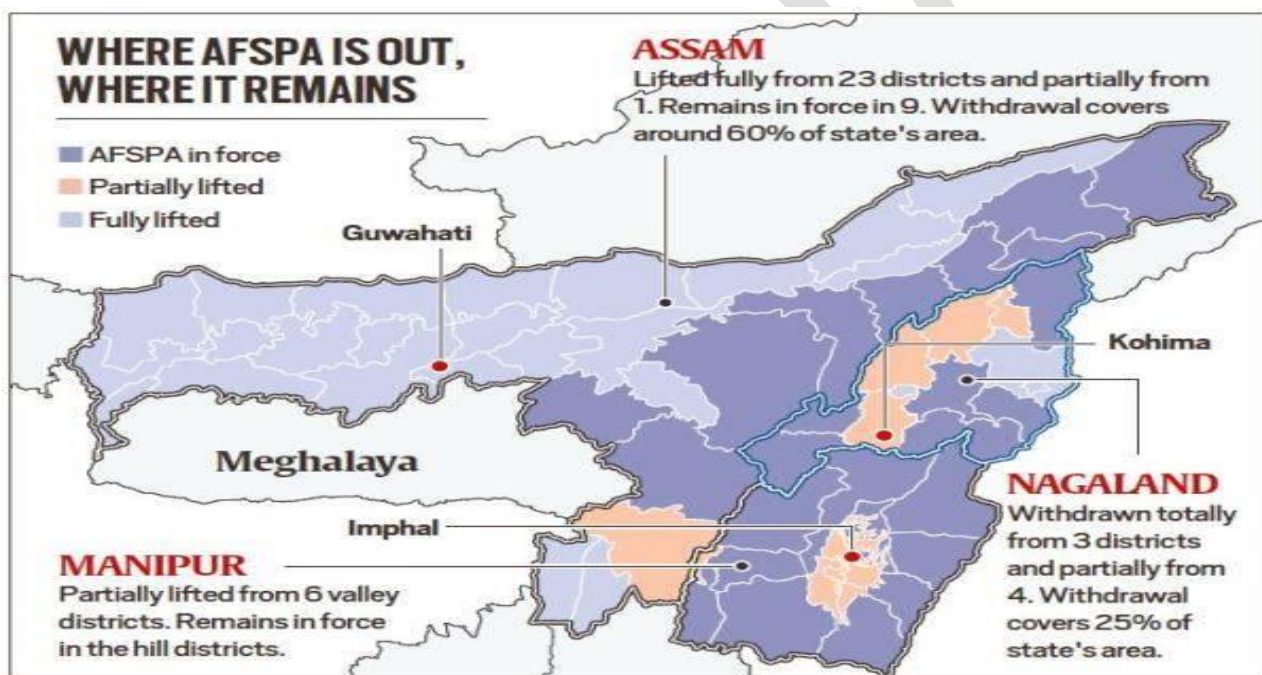
costs and maximise human resources to more complex areas of AML/CFT etc.

- Adopting new technologies: such as AI, Data analytics etc can improve the speed, quality and efficiency of measures to combat money laundering and terrorist financing. They can help financial institutions and supervisors, assess these risks in ways that are more accurate, timely and comprehensive.

4.3. Armed Forces (Special Powers) Act (AFSPA) In North East

The Armed Forces Special Powers Act (AFSPA) of 1958 was recently partially repealed in areas of three Northeastern states: Assam, Nagaland, and Manipur.

- AFSPA gives the military forces extra-ordinary powers and immunity in order to restore order in "disturbed areas."
- A disturbed area is one that has been declared under Section 3 of the AFSPA. The Central Government, the Governor of the State, or the administrator of the Union Territory can declare the whole or part of the State or Union Territory as a disturbed area due to differences or disputes between members of different religious, racial, language, or regional groups, castes, or communities.



- Section 4 of the AFSPA empowers armed forces with provisions like legal immunity for their actions, arrest anyone without warrant, stop and search any vehicle etc.
- Presently, AFSPA is operational in Assam, Jammu and Kashmir and Ladakh, Nagaland, Manipur (except Imphal Municipal area) and parts of Arunachal Pradesh.
- Jammu and Kashmir and Ladakh were brought under the Act by way of The Armed Forces (Jammu and Kashmir) Special Powers Act, 1990. AFSPA in North East
- Insurgency in Nagaland: Naga nationalist movement kicked off in the 1950s with the setting up of the

Naga National Council (NNC)— Assam police forces allegedly used force to quell the movement.

- Subsequently, AFSPA was passed in Parliament in 1958, and imposed on the entire state.
- Imposition in Manipur: In Manipur it was imposed in 1958 in the three Naga-dominated districts of Senapati, Tamenglong and Ukhrul, where the NNC was active. It was imposed in the 1960s in the Kuki-Zomi dominated Manipur district of Churachandpur, which was under the sway of the Mizo insurgent movement, and extended to the rest of the state in 1979, when groups in the Meitei-dominated Imphal Valley groups began an armed insurgency.
- Extension in other Northeastern States: As secessionist and nationalist movements started sprouting in other Northeastern states, AFSPA started being extended and imposed in other states as well.
- Gradual withdrawal: With many militant outfits inking peace agreements or joining negotiations with the Centre government, militancy in the Northeast has appreciably declined in many states.
- Resultantly AFSPA was completely withdrawn in Mizoram in the 1980s, Tripura in 2015 and Meghalaya in 2018. Significance of the AFSPA
- Tool to deal with extraordinary law and order situation: The AFSPA is applied to an area only when the ordinary laws of the land are found to be inadequate to deal with the extraordinary situation perpetrated by insurgents spreading terror.
- Necessary to deal with insurgency: Insurgent movements in India have more or less been proxy-wars being waged against India by external actors and this makes the deployment of armed forces in a counter-insurgency role with enhanced legal protection necessary.
- To prevent security gap: The army needs special powers to tackle homegrown and as well as foreign terrorists. The underlying point is that the army cannot operate in militancy-hit areas without the AFSPA and if AFSPA is repealed, the army would have to be withdrawn from that state or area. That will create a huge gap in the security grid in sensitive areas.

Reasons for opposition against AFSPA

- Violation of human rights: With special powers accorded to the armed forces, there have been multiple allegations of "fake encounters" and other human rights violations by the security forces in 'disturbed' areas.
- A public interest litigation (PIL) filed in the Supreme Court claimed that at least 1,528 extra-judicial killings took place in Manipur between 2000 and 2012.
- Recently, 14 villagers were killed during an anti-insurgency operation in Nagaland's Mon district.
- Violation of fundamental rights: The power of arbitrary arrest and detention given to the armed forces goes against the fundamental right vested in Article 22, which provides safeguards for preventive and punitive detentions.
- Blanket immunity to security personnel: There can be no prosecution or legal proceedings against

personnel involved in above such operations without the prior approval of the Centre.

Way ahead

- Ensuring justice for victims: The security forces and the government should fast track existing cases and should adopt a transparent process to deal with allegations of human rights violations by the forces.
- Building trust among the populace: The armed forces must build the necessary trust amongst the locals to ensure their support. The state bureaucracy, army, and the grass-root civil society organization should come together in the developmental activities of the state hence making the law a positive aspect for the society there.
- Case by case basis application: The government should consider the imposition and lifting of AFSPA on a case-by- case basis and limit its application only to a few disturbing districts instead of applying it for the whole state. The government and the security forces should also abide by the guidelines set out by The Supreme Court, Jeevan Reddy Commission, and the NHRC.
- Strengthening local level law and order machinery: A part of the problem is also attributed to the failure of respective state governments to maintain law and order. It is argued that if the local police can effectively handle the situation, then the need of AFSPA would not arise, and it can be withdrawn from the region.
- Important to ensure normalcy: If India is to actualize its Act East policy and use the Northeast as a bridge to Southeast Asia, there is a need to demilitarize the region and restore normalcy.

4.4 New Cybersecurity Guidelines

- Under the provisions of section 70B of the Information Technology (IT) Act, 2000, the Indian Computer Emergency Response Team (CERT-In) has developed guidelines on information security procedures and cyber event reporting.
- According to CERT, incidents increased thrice in 2020 compared to 2019, with 1.16 million breaches recorded.

Key guidelines

- All government and private agencies will mandatorily have to report all cyber breach incidents to CERT-In within six hours.
- All service providers, intermediaries, data centres, and government organisations shall mandatorily enable logs of all their ICT systems and maintain them securely for a rolling period of 180 days and same shall be maintained within Indian jurisdiction.
- Virtual private server (VPS) providers, cloud service providers need to register accurate information related to subscriber names, customer hiring services, etc and maintain them for five years or longer duration as mandated by law.

- It is a step in the direction to make India Cyber secure. India has jumped 37 places to 10th position in Global Cyber Security Index (GCI) 2020 (by International Telecommunication Union) which showcases country's commitment towards cyber security.

Steps taken to improve cybersecurity

- National Cyber Security Policy, 2013.
- National Cyber Security Strategy 2020.
- Indian Cyber Crime Coordination Centre (I4C) by Ministry of Home Affairs.
- National Cyber Coordination Centre (NCCC) under CERT-In.
- Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Centre).

4.5 Pinaka Missile Systems

- Pinaka Mk-I (Enhanced) Rocket System (EPRS) and Pinaka Area Denial Munition (ADM) rocket systems have been successfully flight-tested by Defence.
- Research and Development Organisation and Indian Army at Pokhran.
- The new Pinaka ER gives it a range of around 70 km, over the 45 km existing range of the missile which has been with the Indian forces for nearly a decade.
- The Pinaka is a Multi-Barrel Rocket-Launcher (MBRL) system which can fire a salvo of 12 rockets over a period of 44 seconds.

5. Environment

5.1. Uniform Carbon Trading Market

The Indian government is considering implementing a carbon trading programme that would incorporate all existing carbon trading schemes.

More information about the news

The administration plans to start with a voluntary carbon market and gradually move to a 'cap and trade' system, in which companies are assigned emission targets similar to the EU Emission Trading System.

What is carbon trading?

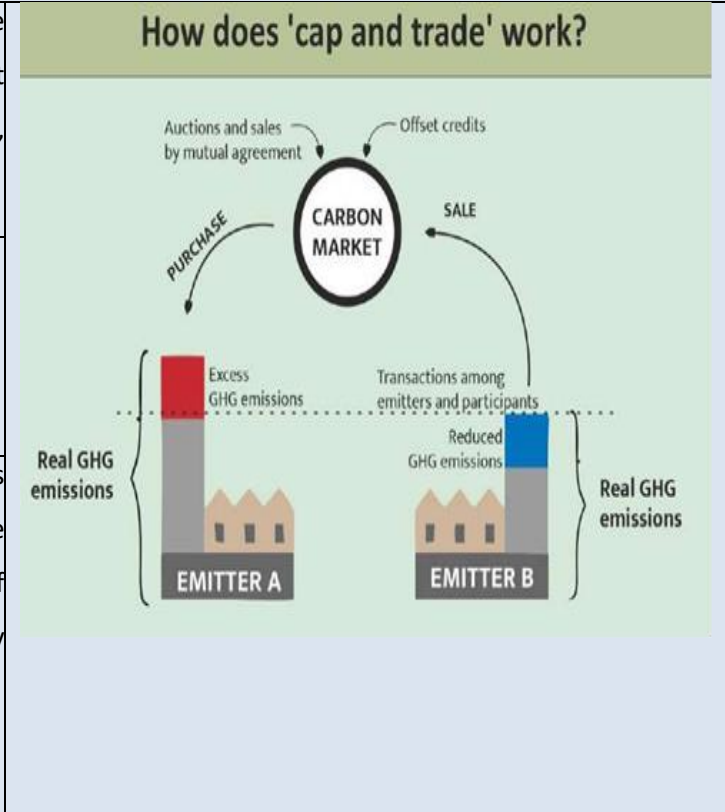
- Carbon trading, also referred to as carbon emissions trading, is a market-based system of buying and selling permits and credits that allow the permit holder to emit carbon dioxide.
- The model used in most carbon trading schemes is called 'cap and trade'.
- The carbon credits and the carbon trade are authorized by governments with the goal of gradually reducing overall carbon emissions and mitigating their contribution to climate change.
- The idea of applying a cap-and-trade solution to carbon emissions originated with the Kyoto Protocol.
- Kyoto Protocol created three such "market mechanisms: Emissions Trading, Clean Development Mechanism, Joint implementation.
- Under Article 6 of the Paris Agreement, parties agreed to create a new market mechanism and a framework for non-market approaches mechanism.
- Carbon marketplaces associated with carbon trading can exist at international, national, state or local level.
- For instance, in 2021, China launched the world's largest market for carbon emissions trading.

How does 'cap and trade' work?

Setting a cap: An overall limit or cap is set on the amount of emissions that are allowed from significant sources of carbon, including power industry, automotive and air travel. ↓

Issuance of permits: Governments issues permits up to the agreed limit. Each permit is usually measured in terms of one tonne of carbon dioxide equivalent (CO₂e).

Selling and buying of permits: If a company curbs its own carbon significantly below the cap it can trade the excess permits on the carbon market for cash. If it's not able to limit its emissions, it may have to buy extra permits.



Significance of an efficient Carbon trading market in India

- Financial gains: India is the largest exporter of carbon credits the country and could stand to gain \$11 trillion over 50 years by limiting rising global temperatures and realising its potential to 'export decarbonisation' to the world.
- Help achieve India's net zero targets: Carbon markets can help in reducing green-house gas emissions by incentivizing the adoption of innovative low carbon technologies and assigning financial accountability to high emitters to reduce emissions.
- Finance avenues for carbon transition: The market will let green plants and energy efficient units estimate earnings through carbon trade. This will help boost and finance more such projects.
- Enhance private sector participation in climate actions: Giving voluntary players an opportunity to trade in carbon instrument could enhance GHG emission reduction commitments in the private sector.

Challenges in existing carbon trading market in India

- Poor demand and Low bids: Current carbon trade suffers from low compliance and poor demand, which leads to surplus of permits and hence low price. This further disincentivizes active participation.
- Limited participation and coverage: For instance, in EScerts trading, only designated consumers, having targets under PAT cycle can participate and does not include other private enterprises in India that have voluntarily committed to emission reduction targets.
- Compatibility challenge: The RECs and EScerts are not denominated in terms of GHG reductions, which is the de-facto trading unit of most compliance based as well as Voluntary carbon markets around the world.

Other issues-

- Lack of transparent price discovery mechanism

- Short trading period.
- Lack of integration with other international and regional trading mechanisms.

Way forward

- Examination of present trade of various environmental instruments to observe trading trends.
- Calibration and effective management of demand and supply of instruments.
- Making the instrument more fungible: Developing a provision for fungibility of the unit trading to emission reduction may attract voluntary buyers and lead to international participation in the market.
- Adding more participant into the pool: like State Designated Agencies (SDAs), airlines industry, Indian private companies participating in the Science-Based Targets initiative's (SBTi) who have set targets under their 'Business Ambition for 1.5 C' campaign etc.
- This will require updating of PAT market rules to allow voluntary players to be part of the buyer/seller pool.
- Regularizing trading period: For instance, in the EU-ETS system, auctioning of allowances happens monthly on the European Energy Exchange (EEX).
- Supply of verifiable permits: by enabling project level registration and their proper validation, verification and issuance of emission reduction units (ERU).

Developing Institutional and policy mechanisms for-

- Fair and transparent price discovery.
- Linking other carbon trading market.
- Registry management and operation
- Participation protocol and methodology.
- Monitoring and reporting of carbon market performance.
- Gradually moving to moving to a cap and trade system wherein sectors and withing sectors specific companies are earmarked for only a specific amount of emissions.

5.2. Pradhan Mantri Urja Suraksha Evam Utthaan Mahabhiyaan (PM KUSUM) Scheme

Reports from various states highlight that PM KUSUM scheme has been off to a slow start. About PM KUSUM Scheme

- The scheme was launched with the objective of providing financial and water security to farmers.
- It is one of largest initiatives of the world to provide clean energy to more than 35 lakh farmers by solarising their agriculture pump.
- The Scheme consists of three components:

Component	Features
Component-A (Harvesting Solar Energy): Installation of Decentralized Ground Mounted Grid Connected Renewable Power Plants	<ul style="list-style-type: none"> • Small solar power plants of capacity up to 2 MW can be set-up by individual farmers/ cooperatives / panchayats / Farmer Producer Organisations (FPO) on barren/ fallow/marshy/ pasture or cultivable lands. • Power generated from solar plants will be purchased by the Distribution Companies (DISCOMs) at tariffs determined by the respective State Electricity Regulatory Commissions (SERCs). • The plant can be installed by the farmer, or he can provide his land on lease to a developer. • RBI has included this Component under priority sector lending. • Solar power purchased under this component will also help the DISCOMs to meet their Renewable Energy Purchase Obligation (RPO) target
Component-B (De-dieselisation of Farm Sector): Installation of standalone Solar Powered Agriculture Pumps	<ul style="list-style-type: none"> • Individual farmers, Group of farmers, such as Water User Associations and community/cluster-based irrigation systems will also be covered. • It will benefit farmers in off-grid areas, where there is no source of electric power for irrigation. • Central Financial Assistance (CFA) of 30 per cent of the benchmark cost (fixed by MNRE every year) of the stand-alone solar agriculture pump will be provided. • The State Government will give a subsidy of 30 per cent and the remaining 40 per cent will be provided by the farmer. • All solar pumps installed under this Component will be provided with remote monitoring systems for monitoring on a real-time basis.
Component-C: Includes Solarisation of Grid-connected Agriculture Pumps	<ul style="list-style-type: none"> • Under this Component, individual farmers having grid connected agriculture pump will be supported to solarise pumps. • Government of India will provide 30% subsidy for solarisation of agricultural feeders. • The farmer will be able to use the generated solar power to meet the irrigation needs and the excess solar power will be sold to DISCOMs at pre-fixed tariff

- The initially approved scheme aimed to add solar capacity of 25.75 GW by 2022. In the Budget for 2020-21, expansion of the scheme was announced. With the expansion, the targeted solar capacity addition would be 30.8 GW.
- State Nodal Agencies (SNAs) of MNRE will coordinate with States/UTs, Discoms and farmers for

implementation of the scheme.

Potential benefits of the scheme

- Employment generation: The scheme is likely to generate employment opportunities equivalent to 7.55 lakh job- years for skilled and unskilled workers.
- Day-time reliable power for irrigation: Providing solar panels for irrigation would result in day-time reliable power to farmers making irrigation easier for them and also avoiding over-use of water and power.
- De-dieselization of farm sector: By replacing diesel pumps with solar pumps and panels, the farmers will get cheaper and more reliable power for irrigation resulting savings in diesel cost.
- Enhancing Farmers' Income: By replacing high-cost diesel with less expensive solar energy under Component-B and by enabling farmers to sell surplus solar power at a pre-determined rate to DISCOMS under Component-C.
- Reducing the agriculture electricity subsidy burden on states and improving the financial health of DISCOMs by reducing subsidy required from states for electricity supply to agriculture.
- Curbing Climate Change: PM-KUSUM will lead to reduced carbon emissions by as much as 32 million tonnes of CO₂ per annum.
- Boosting Domestic Solar Manufacturing: It has a mandatory requirement for deploying domestically produced solar cells and modules under Component B and C. This will create demand for domestically produced solar cells and modules.
- Reducing the Import Bill: PM-KUSUM will lead to an annual reduction in diesel consumption of 1.38 billion litres per annum, thus reducing the import bill on account of petroleum products.

Challenges/limitations of KUSUM Scheme

- Inadequate attention to groundwater concerns: Without monitoring of pump use and groundwater withdrawal, large- scale distribution of solar pumps could result in excessive water withdrawal and have a significant impact on the already depleting water tables.
- May not help reduce DISCOMs subsidy burden because the installation of pumps is not mandatorily tied to decrease in subsidised agricultural power supply.
- Weak beneficiary targeting: experience suggests that large farmers are primary beneficiaries of solar pump schemes implemented by various states, due to inability of poor farmers to pay even 10 per cent of the upfront cost, or due to lack of awareness, social exclusion or corruption.
- Land regulations challenges: Challenges related to leasing or conversion of agricultural land for non-agricultural uses emerged as another key barrier to the uptake of Component-A. Land leasing is either not permitted or strictly regulated in many states.
- Gaps in inter-departmental coordination: Many developers had to face delays in obtaining all the requisite approvals in the absence of institutional coordination. Consequently, such developers could not

commission the projects in time.

Way Forward

- Manage groundwater extraction: Solar pump schemes should accompany explicit and strict measures of monitoring and control to manage groundwater extraction.
- Rationalize tariff: Solarisation of feeders may be the most economical solution but needs to be accompanied by gradual increase in agricultural tariffs and limits on hours of power supply.
- Ensure Financial support: Clear targets must be set to provide solar pumps to small and marginal farmers. Providing access to financing is a crucial support needed by this segment.
- Operational efficiency: Simplifying the process for clearances, reducing delays in various stages of approvals, correctly attributing loss in generation and a partnership between distribution companies and developers is required.
- Efficient DISCOMs operations should be ensured by regulatory mandates for regular reporting on installations, operations, evacuation, billing and payment to farmers.

5.3. State Energy & Climate Index

The State Energy and Climate Index (SECI)-Round I was just launched by NITI Aayog.

- It is the first index to track state and union territory (UT) initiatives in the environment and energy sectors.

Objectives of the index:

- Ranking the States based on their efforts towards improving energy access, energy consumption, energy efficiency, and safeguarding environment;
- Helping drive the agenda of affordable, accessible, efficient and clean energy transition at the State level;
- Encouraging healthy competition among the states on different dimensions of energy and climate.
- Parameters: SECI rank states and UTs on six parameters which include a total of 27 indicators
- Discoms' Performance;
- Access, Affordability and Reliability of Energy;
- Clean Energy Initiatives;
- Energy Efficiency;
- Environmental Sustainability; and
- New Initiatives.

Classification of States: For better comparison, the states have been classified based on size and geographical differences as larger states, smaller states, and UTs.

- Categorization of State and UTs based on the outcome of SECI Round-1 scores: States and UTs have been categorized into three groups: 'Front Runners', 'Achievers', and 'Aspirants'. Performance of States and UTs More than half the states scored higher than the average.

Overall performance-

- Top Scorer- Chandigarh
- Lowest scorer- Lakshadweep
- Top 3 performers based on classification
- Larger States: Gujarat, Kerala, and Punjab.
- Smaller States: Goa, Tripura, and Manipur.
- UTs: Chandigarh, Delhi, and Daman & Diu/Dadra & Nagar Haveli.

Conclusion

The learnings that emerged during the preparation of the report will help policymakers to improve performance in the energy sector and promote peer-to- peer learning among states. The SECI with thus help India reach net-zero emissions by 2070, one of the Panchamrit declared by the Prime Minister at the COP26 UN Climate Change Conference held in Glasgow.

5.4. Sustainable Sand Management

A report titled 'Sand and Sustainability: 10 strategic recommendations to avert a crisis' was recently released by United Nations Environment Programme (UNEP).

About the report

- **Aim of the report:**
 - Raise awareness around the world on sand extraction and use, and its related impacts.
 - Urge policymakers to explore and adopt policies on sand extraction and use that are appropriate to their contexts and jurisdictions.
 - Shape common goals across sectors that will help achieve just and responsible sand governance and management everywhere.
 - Propose solutions for finding pathways toward a more sustainable use of sand.
- **Key highlights of the report**
 - Sand, gravel, crushed stone and aggregates (sand resources) are the second most exploited natural resource in the world after water.
 - The use of sand resources and their use has tripled in the last two decades to reach an estimated 40-50

billion metric tons per year.

- Current extraction exceeds the replenishment rates of naturally occurring sand.
- Sand is a material that holds significant environmental, social, and economic value and it is central to achieving the SDGs.

Key Recommendations:

The report provides following recommendations on how sand resources can be governed and managed in a responsible, sustainable, and just manner.

- Recognise sand as a strategic resource delivering critical ecosystem services and enabling construction of vital infrastructure.
 - Understand, formalise, and evaluate the strategic value of sand.
 - Anticipate increasing demand to enable planning.
 - Consider the strategic role of sand with respect to climate change and biodiversity loss.
- Include place-based perspectives for just sand transitions, ensuring the voices of all impacted people are part of decision-making, agenda-setting and action.
 - Avoid any deterioration in workers' rights, increased hardship, or poverty.
 - Solutions and decision-making should be scaled so that decisions are retained by the lowest possible level of governing body consistent with their resolution.
- Enable a paradigm shift to a regenerative and circular future.
 - Establish a baseline map of all sand-dependent industries and potential markets within each country.
 - Boost consumer confidence in the regenerated resource through certifications and public procurement.
 - Realign professional education towards a regenerative and circular economy.
 - Remove regulatory and insurance barriers for regenerative materials.
 - Embrace diversity of building materials, methods, and business models, like preference to densely built, low-rise buildings over skyscrapers
 - Create incentives for public and private investment in sustainable activities related to sand.
 - For instance, building materials manufactured by repurposing and upcycling waste streams in India attract a Goods and Services Tax (GST) rate from 5 % to 12% in comparison, materials for concrete construction such as concrete blocks and cement which attract a GST of 18 to 28%. This has led to emergence of start-ups upcycling waste for building materials.

Source responsibly by actively and consciously procuring sand in an ethical, sustainable, and socially conscious way through steps like-

- Adoption of a responsible sourcing framework.
- Requiring 'construction material resource and supply chain plans' for all new major infrastructure

projects.

- Implementing the principle of supply chain accountability.

Other measures-

- Adopt strategic and integrated policy and legal frameworks horizontally, vertically and intersectionally, in tune with local, national, and regional realities.
- Establish ownership and access to sand resources through mineral rights and consenting.
- Map, monitor and report sand resources for transparent, science-based and data-driven decision-making.
- Establish best practices and national standards, and a coherent international framework.
- Restore ecosystems and compensate for remaining losses by advancing knowledge, mainstreaming the mitigation hierarchy, promoting nature-based solutions and facilitating the adoption and enforcement of compensation mechanisms.
- Promote resource efficiency & circularity by reducing the use of sand, substituting with viable alternatives and recycling products made of sand when possible.

5.5 Scope of Authority under Dam Safety Act 2021

- The Supreme Court has ordered the Centre to detail its plan for bringing the National Dam Safety Authority (NDSA) and other organisations under the Dam Safety Act 2021 into operation.
- During the hearing, the Supreme Court stated that the Dam Safety Act of 2021 is a cure for ending the "perennial" legal dispute over the Mullaperiyar dam between Tamil Nadu and Kerala.

About the Dam Safety Act

- It is a comprehensive act postulation for surveillance, inspection, operation, and maintenance of dams to prevent disasters.
- The act mandates the setting up of 2 specialized bodies to evolve policies, recommend regulations for dam safety standards, and resolve disputes between the States:
 - National Committee on Dam Safety
 - NDSA
- Under the Act, Dam owners will be required to prepare an emergency action plan, and carry out risk assessment studies for each dam at specified regular intervals.

Importance of Dams and Dams Safety

- Dams play a vital role in the overall water security and energy needs of a country.
- India ranks third, after US and China, in the number of large dams (5,334).
- Exposing downstream areas to risks of catastrophic flooding, Dams and Dams Safety in India suffer from various issues.

5.6. Punjab-Haryana Dispute Over Rivers Waters

- SYL canal
- It is a proposed 214-kilometer long canal connecting Sutlej and Yamuna rivers which was planned in 1966 after the state of Haryana was formed out of Punjab.
- It seeks to provide Haryana its average annual share of surplus Ravi-Beas water.
- Haryana completed its stretch of SYL Canal in 1980, while Punjab kept delaying the construction on the pretext of non-availability of spare water.
- SYL canal will help in addressing water shortage in southern parts of Haryana.
- Punjab has concerns over the state becoming dry by 2029 (based on a state government study) due to over-exploitation of groundwater.

Mechanism for resolution of interstate water disputes:

- Article 262 enables Parliament to provide for adjudication of dispute with respect to use, distribution or control of waters of inter-State river or river valley.
- Under Inter-State River Water Disputes Act (ISWD), 1956 provides for setting up of tribunals for adjudication of an inter-state river dispute.
- Inter-State River Water Disputes (Amendment) Bill, 2019 was introduced to amend ISWD Act.

5.7. Ministry Of Environment Extends Tenure Of Green Permits

- For the following projects, the duration of Environmental Clearances (EC) has been extended:
- River valley projects will have a 13-year validity period.
- Projects involving nuclear power or nuclear fuel processing must be valid for 15 years. o Other than mining and river valley developments, projects and activities shall be valid for ten years.
- The EC for mining leases is also being reviewed, as mining leases are now awarded for 50 years and EC is only valid for 30.

Need for the extension arose as –

- Nuclear power and hydropower projects have high gestation period due to geological surprises, delays in forest clearance, etc.
- Considering the time taken for addressing local concerns including environmental issues relating to implementation of such projects.

About EC

- It was first made mandatory under the Environmental (Protection) Act 1986 for expansion or modernisation of any activity or for setting up new projects listed in Schedule 1 of the notification.
- The EIA legislation of 2006, made it mandatory for projects such as mining, thermal power plants, river

valley, infrastructure and industries including very small electroplating or foundry units to get environment clearance.

5.8. Mother Nature' A 'Living Being' With Legal Entity: Madras High Court (HC)

- Using 'parens patriae jurisdiction,' the HC granted nature 'legal entity' status and instructed state and federal governments to safeguard it.
- In Latin, Parens Patriae means "**parent of the country.**" It allows the State to be the custodian of the rights of entities that are unable to fight for their own.
- In 2017, the Uttarakhand High Court granted the Ganga and Yamuna rivers the same legal standing as humans, but the Supreme Court overturned this decision.
- Additionally, the Uttarakhand High Court proclaimed the "**entire animal kingdom, including avian and aquatic**" to be legal beings in 2018.

Significance:

- The court ruled that Mother Nature will have rights, duties and liabilities enjoyed by a living person.
- The court further observed that natural environment is part of basic human rights, of 'right to life' itself.
- Expansion of environmental law and attitudinal & behaviour change in utilisation of natural resources.

Issues

- Ambiguity in defining, as what constitutes nature in the absence of its proper definition.
- In the court of law, loco parentis (the human face) will be required to represent Nature, thus the issue of its funding and legality in enforcement would arise. o It may clash with other rights granted to humans e.g., rights to water and land.

5.9. Prakriti

- The Minister of Environment, Forests and Climate Change (MoEFCC) has created a mascot prakriti to raise awareness among the masses of small changes that can be sustainably adopted for a better environment.
- The following plastic waste management initiatives have also begun.
- National dashboard for disposable plastic removal (SUP) and plastic waste disposal (MoEFCC)
- Extended Producer Responsibility (EPR) Portal (CPCB) for plastic packaging to improve accountability, traceability, transparency and facilitate reporting on compliance with EPR obligations.
- Mobile app for SUP Grievance Redressal (CPCB). Allows citizens to audit the sale / use / manufacture of SUPs in their area and combat the threat of plastics.

- SUP (CPCB) monitoring module o Industrial production of graphene from plastic waste.

5.10 Global Land Outlook 2: Land Restoration For Recovery And Resilience

- The United Nations Convention to Combat Desertification produced a report titled "Global Land Outlook 2: Land Restoration for Recovery and Resilience" (UNCCD).
- Important remarks o Humans have degraded the environment by transforming more than 70% of the earth's land area from its natural state.
- Modern agriculture is a major contributor to land degradation. .
- Carbon emissions of approximately 69 gigatonnes from 2015 to 2050 due to land use change, soil degradation, and a slowing of agricultural production increase.
- arbon stocks will also rise by a net 17 gigatonnes between 2015 and 2050 due to gains in soil carbon and reduced emissions. Up to 40 per cent of the planet's land is degraded, directly affecting half of humanity and affect half of global GDP.

Recommended Measures

- Conservation agriculture (low- or no-till farming), agroforestry and silvopasture, improved grazing management and grassland rehabilitation, forest plantations.
 - If land restoration is done crop yields will increase by 5-10 percent in most developing countries.
- Combating desertification, land degradation, and drought – and achieving Land Degradation Neutrality (LDN) – is an effective pathway.
- LDN is defined by the UNCCD as “a state whereby the amount and quality of land resources necessary to support ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems.

5.11 World Bank Published “Carbon Revenues From International Shipping” Report

- The report looks at how carbon pricing may be implemented in the shipping industry and how revenue from carbon pricing could be utilised to support energy transition inside and beyond the business.
- Maritime transport accounts for over 70% of world trade in terms of value and nearly 80% in terms of volume, and it emits about 2.5 percent of global greenhouse gas (GHG) emissions.
- **International Maritime Organization (IMO)** is considering measures to meet targets of its Initial Greenhouse Gas Strategy that aims to cut absolute GHG emissions from ships by at least 50% from the 2008 level by 2050.
- Carbon pricing, either in the form of a carbon levy or by capping GHG emissions and allowing operators to buy and trade emissions allowances, could boost the revenue as well as green transition of the sector.

Benefits of using carbon pricing

- Bulk of revenues could be allocated to countries with lower ability to address climate change or shipping emissions.
- Could help in decarbonization of the shipping industry by supporting the development of zero- carbon

vessels, zero-carbon fuels etc.

- Improving overall resilience of maritime ports suffering from climate-induced extreme weather events, congestion, poor digitalization, or a lack of skilled workers.
- y products.

5.12 Trem Stage-Iv Emission Norms

- The deadline for implementing Trem Stage-IV emission standards for farm equipment may be postponed once more.
- Beginning in April 2022, new TREM IV emission standards will apply to tractors with engines greater than 50 horsepower, while a large majority of the industry with engines less than 50 horsepower will continue to be governed by TREM III A standards.
- TREM III A emission standards are currently in effect for tractors of various horsepower categories, and were implemented in April 2010/2011.
- Starting April 1, 2024, Bharat Stage (CEV/Trem) V standards will encompass a wider variety of engines, including those with less than 8 kW and those with more than 560 kW.

5.13 Global Assessment Report On Disaster Risk Reduction 2022

- The United Nations has published the 'Global Assessment Report on Disaster Risk Reduction 2022 (GAR-DRR 2022)- **Our World at Risk: Transforming Governance for a Resilient Future.**'
- It is based on an examination of UN-mandated SDG statistics on increased gender-based violence during catastrophes.
- The UN Office for Disaster Risk Reduction publishes the GAR every two years (UNDRR).

Social impact of disaster as shown by the report:

- Increasing instances of displacement and migration due to floods and cyclones in West Bengal and Odisha makes people more vulnerable to trafficking.
- Monitoring during the COVID-19 pandemic highlighted the “shadow pandemic” issue of systematic gender based violence.
- Violence against women and girls increases in the aftermath of disasters and at the extreme end of the scale
- Disaster Risk Reduction aims to reduce the damage caused by natural hazards like earthquakes, floods, droughts and cyclones, through an ethic of prevention.
- Stages of the Disaster-Management Cycle include Prevention, Mitigation, Preparedness, Response, and Recovery.

Initiatives taken to reduce disaster impact

- National Disaster Management Authority of India (NDMA).

- World bank aided Tamil Nadu and Puducherry Coastal Disaster Risk Reduction Project (CDRRP).
- India is a signatory to the Sendai Framework for DRR.

5.14 Study Points That Sea Floor Spreading Has Slowed By 35% Globally

In order to assess how much marine crust has formed during the last 19 million years, researchers looked at magnetic records in the rocks on the oceanic crust of 18 significant spreading ridges.

Study's key results include:

- Seafloor spreading is roughly 140 millimetres per year, down from 200 millimetres per year 15 million years ago.
- Not all ridges travelled at the same rate: some accelerated while others slowed.
- Ridges along the eastern Pacific were 100 millimetres per year slower, lowering the world's average.
- Reasons identified by the report include growing mountains and changes in mantle convection which transports heat from the earth's interior to the surface.

About Sea floor spreading

- It is a geological process that creates crusts, the outermost shell of Earth.
- Tectonic plates separate, allowing magma from the earth's interior to fill the gap in this phenomenon. The magma cools to form a new oceanic crust.
- These activities occur along mid-ocean ridges - large mountain ranges rising from the ocean floor.

5.15. Geomagnetic Storm

- Space Weather Prediction Centre (SPWC) under National Oceanic and Atmospheric Administration (NOAA) has issued two geomagnetic storm (GMS) watches. o When Coronal Mass Ejections (CME) collide with the Earth, it causes GMS.
- GMS is a disturbance in the earth's magnetosphere, which is the area around the planet controlled by its magnetic field.
- Earth's magnetosphere protects its inhabitants from most of the particles emitted by the sun.
- It is caused by massive exchange of energy from the solar wind into the space environment surrounding the Earth.
- GMS are categorised between G1 and G5, the latter being the strongest.

Impact of geomagnetic storms

- Disrupt high-frequency radio broadcasts and global positioning system (GPS) devices.
- Damage satellite electronics and expose astronauts and high-altitude pilots to increased levels of radiation.
- Voltage surges due to altered magnetic activity can affect power supply on earth and cause outages.
- CME is a large expulsion of plasma and magnetic field from the sun's corona, or upper atmosphere.
- Plasma is the highly ionised gas present on the sun, while corona is the outermost part of the sun's atmosphere.

5.16 Bernardinelli-Berstein Comet

The Bernardinelli-Bernstein comet is the largest ice comet nucleus ever spotted by scientists, according to NASA. Comets are huge dust and ice particles that circle the Sun.

The Comet Bernardinelli-Berstein:

- Officially known as C/2014 UN271, it has a diameter of over 129 kilometres.
- It is estimated that the mass of the universe is roughly 500 trillion tonnes.
- It is thought to have formed in the Oort cloud (just a theoretical idea), a faraway region of the solar system where most comets are projected to form.

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6. Social Issues

6.1. Universal Social Security

A government commission has advocated a Universal Pension Scheme for gig workers and the self-employed, citing worries about the Employees Pension Scheme's long-term viability (1995).

Concerning Social Security and Its Importance

Social security is defined as "the protections granted to employees and other workers in order to ensure access to health care and to offer economic security, notably in old age, unemployment, sickness, and job accident" (Code on Social Security, 2020).

Social security, according to the ILO, is a human right that addresses the universal need for protection against specific life hazards and social requirements.

- **It guarantees income security and health protection to people, helping in:**
- Prevention and reduction of poverty and inequality, and
- Promotion of social inclusion and human dignity
- Seen as an integral part of the development process, social security serves a number of other significant functions

Social Security in India

- Legal standing: Though it is not a fundamental right in India, being a welfare State, the state is under obligation via the Directive Principles of the State Policy such as Article 41, 42 and 47.
- Since the subject of Labour falls under the concurrent list, the extension of Social Security and Social Assistance benefits to citizens is from the centre as well as from state governments.
- Extent of social security: According to the Economic Survey 2021-22, around 90% of the additional workers who joined in 2019-20 were in the informal nature of employment and over 98% were in the unorganized sector. Majority of these people lie outside the net of social security.
- This informality of the workforce may further exacerbate inequalities and lack of social security due to high self-employment, impact of pandemic and rise of new forms of workers such as gig workers, platform workers, etc. Recent Government Initiatives
- Code on Social Security, 2020 to consolidate nine central labour legislations on social security to extend social security to all employees and workers either in the organized or unorganized or any other sectors (including the new forms of jobs that are emerging).
- The subsumed laws include Employees' Compensation Act, 1923, The Employees' State Insurance Act, 1948, The Maternity Benefit Act, 1961, The Payment of Gratuity Act, 1972 etc.

New Social Protection Schemes such as

- Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM), a voluntary and contributory pension scheme to ensure old age protection for Unorganised Workers.
- National Pension Scheme for Traders, Shopkeepers and Self-Employed Persons, a voluntary and contributory pension scheme for traders, shopkeepers.
- E-SHRAM Portal to create a national database of Unorganized Workers, including migrant workers, to facilitate delivery of social security schemes to the workers.

Challenges in Universal Social Security

Traditionally, social security was an important responsibility of the family/community. The weakening of joint families and family bondage has increased the importance of institutionalized social security arrangement.

To ensure Universal Social Security, it needs to overcome challenges of:

- High Magnitude of Unorganized Workers (UWs), including a large section of distressed categories of workers with low earning and irregular (seasonal) employment patterns.
- Ignorance, illiteracy, and lack of unionization of workers leading to poor awareness.
- Resource constraints of the State with competitive demand of defence, infrastructure etc. and crippled state finances due to Covid-19.
- Gaps in laws with relatively weak administrative structure, particularly in rural areas.

E.g. the Code on Social Security, 2020 suffers from issues such as:

- Lack of a minimum national benefit policy,
- Lack of accountability of district administration with responsibility to register UWs, o Overlapping definitions. E.g. a driver working for an app-based taxi aggregator is a gig worker, platform worker and unorganized worker at the same time.
- Almost Stagnation of formal employment in the organized sector with increasing workforce in the informal economy.
- Fragmented administration systems due to involvement of multiple ministries and departments at Union and State level with different initiatives.
- Other issues such as exclusion errors, lack of transferability/portability of benefits, gender inequality, technological disabilities etc. E.g., the Kattupaniya tribe (nomadic) of Kerala got an Aadhar card and free ration only post Covid-19.

Way Forward

According to ILO, recognition of universal social protection as human right is the cornerstone of a human-centric approach to achieve social justice.

Our efforts for universal social security should also start with it to strengthen our social protection systems at-

- Legal-level: Recognition of Social Security as fundamental right to frame rights-based and inclusive laws on universality of protection, coverage, and effective access.
- Policy-level: Decisive Policy Actions to reinforce and extend social protection mechanisms with adequate benefits.
- Governance-level: Enhance transparency and accountability for efficient supervision and effectiveness of the enforcement machinery and of the schemes.
- Economic-level: Ensure higher and sustainable investments in social security measures to offer a comprehensive range of benefits for all sections.
- Address the issue of poverty through full and productive employment with unemployment protection. E.g. Recognition of unpaid work and launch of unemployment benefit schemes.
- Information, Education and Awareness (IEC) campaigns to improve awareness on entitlements, create unions and support people in life and work transitions.
- Voluntary organizations and committed individuals can be engaged for it.
- Transferability/portability of benefits to support labour market mobility (within and across borders).
- Addressing issues of exclusion, gender inequality etc. through effective use of Aadhaar, e-SHRAM portal, digital connectivity etc. and at the same time developing tribes and women specific social protection systems.

6.2. Civil Registration System (CRS)

The government intends to update the Civil Registration System (CRS) with an IT-enabled system to provide real-time birth and death registration with minimal human interaction.

More on the news

- The adjustments would be in the area of automating process delivery points so that services are delivered on time, uniformly, and without discretion.
- The Registrar General of India (RGI) has advocated "maintaining the national database of recorded births and deaths."
- The database might be utilised to update the Population Register, Electoral Register, Aadhar, Ration Card, Passport, and Driving License databases, according to the proposed revisions.

About Civil Registration System (CRS)

- It is the unified process of continuous, permanent, compulsory and universal recording of the vital events (births, deaths, still births) and characteristics thereof.
- History of CRS in India dates back to the middle of the 19th century. In 1886 a Central Births, Deaths and Marriages Registration Act was promulgated to provide for voluntary registration throughout British India.
- Post-independence, the Registration of Births and Death Act (RBD Act) was enacted in 1969 to promote uniformity and comparability in the registration of Births and Deaths across the country and compilation of vital statistics based thereon.
- With the enactment of the Act, registration of births, deaths and still births became mandatory in India.
- The RGI at the Central Government level coordinates and unifies the activities of registration throughout the country. However, implementation of the statute is vested with the State Governments.
- The Act mandates the use of uniform birth and death reporting forms and certificates throughout the country. The scheme of Medical Certification of Cause of Death (MCCD) under RBD Act, provides for causes of death, a prerequisite to monitoring health trends of the population.

Importance of CRS

- Right to recognition: Civil registration generates documentation that supports an individual's right to recognition as a person before the law and acknowledges their formal relationship with the state. The absence of civil registration has been described as a 'scandal of invisibility'.
- Legal status: It acts as the basis for identity documents such as a passport or ID. Individuals are able to have their existence, identity, and vital events legally recognised and obtain proof of legal and civil status through valid certificates.
- Planning and monitoring of welfare schemes: The vital statistics are invaluable for planning, monitoring and evaluating various programmes related to primary health care, family planning, maternal and child health, education and so forth.
- Demography: CRS is also used for demographic purposes such as preparation of population estimates and projections, studies of mortality, fertility and construction of life tables.
- Human rights: The achievement of some of the most important human rights that appear in the Universal Declaration of Human Rights and the Declaration of the Rights of the Child depend on CRS. Absence of CRS makes many of these rights practically illusory, e.g., the right of the child to have a name and a nationality.

Others:

- Facilitates access to essential services such as healthcare, education and social protection.

- Enables political participation, property ownership, recourse to justice, formal employment, inheritance and the use of banking and financial services.
- Reduces the risk of statelessness, child marriage and human trafficking.

Issues with CRS

- Security concerns: A few State governments have reported issuance of fake birth and death certificates, including misuse of the User/Login ID and password created in the existing portal/software developed for online registration of birth and death by unauthorised persons.
- Delayed and under coverage of registration: The CRS system is facing challenges in terms of timelines, efficiency and uniformity leading to delayed and under coverage of Birth and Death in the country. Central Government Initiatives to overcome these issues and optimize CRS
- Uniform Software Application for Registration: A software application for online and offline registration of birth and death has been developed which covers the entire gamut of CRS. The application that is presently available in English is being customized in 13 Indian languages.
- Database of Institutions: A nationwide database of medical Institutions has been prepared that has the address, telephone numbers and other contact details of the institutions where events occur. The plan is to electronically monitor the registration of events in these institutions.
- Application to Monitor Institutional Events: An SMS based application called "Event Monitoring System for Registration" has been developed and is currently under pilot testing. This application attempts to track the events at the level of institutions and ensure their registration.
- Capacity Building of Registrars: A standard training manual has been developed for training the registration functionaries in 13 languages. Regular training of registration functionaries has been introduced by providing financial assistance to the State Governments.
- Data digitization: Project to keep old records in easy to retrieve digital form has been started. This will help in storage of registers in electronic format and allow easy access to the records.
- Advocacy and Publicity: An intensive multi-modal publicity and awareness campaigns on birth and death registration is already underway.
- Demand Generation: Creating a policy environment for demand generation for birth and death registration is one of the basic needs identified by a national task force set up for the strengthening the CRS.

Way Forward

Government's decision to automate the process is a step in right direction to enhance effectiveness and efficiency of CRS. When viewed in conjunction with legislations like Personal Data Protection Bill (PDPB), 2019 that intends to protect the privacy rights of individuals, it could enable the vision of a secure, updated and highly

functional repository of citizen's data.

6.3. Learning Poverty

According to a World Bank official, India's learning poverty has increased as a result of the COVID-19 pandemic.

More on News

According to World Bank simulation statistics, before the epidemic, roughly 53% of children were unable to read a basic sentence by the age of ten; now, with the pandemic, this number has risen to 70%. o The COVID-19 pandemic's simultaneous shocks to education systems – school closures and the resulting economic crisis – are exacerbating the worldwide learning crisis and affecting education in unprecedented ways.

This generation will be hurt in comparison to the preceding and subsequent generations simply because they were born between the ages of five and eighteen.

- If something is not done now, this generation will have lower productivity, lower earnings, lower well-being in the future and that is what we need to avoid.

About learning Poverty

- Learning Poverty means being unable to read and understand a short, age-appropriate text by age 10.
- All foundational skills (basic literacy, numeracy, and transferable skills) are important, but reading is focused because:
- Reading proficiency is an easily understood measure of learning;
- Reading is a student's gateway to learning in every other area;
- Reading proficiency can serve as a proxy for foundational learning in other subjects, in the same way that the absence of child stunting is a marker of healthy early childhood development.
- Just as monetary poverty excludes people from economic, social, and political opportunity, so too does a lack of basic reading skills.

Importance of learning skills

- For sustainable growth and poverty reduction: Poor education outcomes have major costs for future prosperity, given that human capital is the most important component of wealth globally.
- Improving overall schooling systems: when children cannot read, it's usually a clear indication that school systems aren't well organized to help children learn in other areas such as math, science, and the humanities either.
- Better quality workforce: Countries which have prioritised and invested in foundational learning have produced a better quality of workforce, enabling their economies to take off. Both South Korea and China did this in the 1970s, and the impact on their economies was tremendous.

- Improves individual freedom: For individuals and families, it can lead to higher productivity and earnings, poverty reduction, higher rates of employment, better health outcomes, and greater civic engagement.
- Benefits society: For societies, it can contribute to faster innovation and growth, better-functioning institutions, greater intergenerational social mobility, higher levels of social trust, and a lower likelihood of conflict.

Way forward

World Bank's Policy Package for helping children learn to read consists of four components that bring focus and facilitate what countries need to do.

- Ensure political and technical commitment to clear goals, means, and measures for literacy o National goals should be set with an understanding of how students are currently doing, and systems should use the data as a baseline on which to develop achievable goals, interventions, and indicators of progress.
- Ensure effective teaching for literacy o Teachers need to be supported with learning materials and teacher guides that have a stepwise plan, as well as a teacher professional development plan that strongly emphasizes practicing specific classroom skills.
- Ensure timely access to more and better age- and skill-appropriate texts o In Mongolia, better access to books led to a 0.21 standard deviation improvement in student outcomes.
- First teach children in the language they speak and understand o Research shows that students who are taught in their home language in the early years have higher comprehension. It also provides the foundation to more easily learn a second language and study more complex topics later on.

6.4. Online Gaming

The Ministry of Information and Broadcasting (I&B) established an AVGC (Animation, Visual, Gaming, and Comics) Promotion Task Force after it was announced in the Union Budget 2022-23.

More information on News

Based on its Terms of Reference (ToR), the task force will seek to attract FDI and increase exports to lead 'Create in India' and 'Brand India'; to capture 5% (\$40 billion) of the AVGC worldwide market by 2025 with a growth rate of 25-30% and the creation of over 1.6 lakh new employment yearly.

Its objectives include-

- Framing of a national AVGC policy.
- Recommend national curriculum framework for AVGC related courses.
- Boost employment opportunities. Online Gaming Sector and its Potential
- Broadly, online Gaming implies playing games which need an internet connection to play them. Part of

the sunrise gaming industry, online gaming has seen a significant spike in demand across various types of online games such as- Multiplayer online games, Role-playing games, real-time strategy or skill games.

- E.g. o Fantasy games, poker, rummy etc. involving betting and wagering, o Interactive games based on transformative technologies such as artificial intelligence (AI), augmented reality (AR).
- The Indian online gaming industry was estimated at ₹13,600 crore and expected to reach ₹29,000 crore by 2025 with a CAGR of 21% (by KPMG).

Benefits of Online Gaming The growth of online gaming will have number of socio-economic benefits such as:

- Economic Growth: It will improve government revenues through taxes on online gaming, reducing government deficit and it can be used to augment infrastructure.
- Recently, the Group of Ministers set up by the Ministry of Finance to look into GST rates on casinos, online gaming and racecourses reached consensus on 28% tax slab.
- Employment Creation: It will create significant employment, especially in tech startups, animation and other related industries such as Live Streaming and Video-On-Demand.
- Reduce Illegal Activities: Online fantasy games with betting and wagering (E.g. Dream 11) can help to curb illegal betting and gambling industry, money laundering etc.
- Reduce Substance Abuse: The convenience and accessibility of online gaming allows people to play from home, reducing chances of substance abuse, which is more common at betting places, casinos etc.
- A new dimension to sports: The global legitimacy of E-sports creates opportunities for users to win laurels for the nation. E.g. o Unlike Tokyo Olympics and last Asian Games as demonstration events, in Asian Games, 2022 E-sports such as FIFA, PUBG, Dota 2 etc. will debut as medal events.
- Promote Innovation: It will promote innovations/technological advancements in immersive and interactive technology such as AR, VR, etc.
- Better Education: Educational online games can help children to learn different things, culture etc. through greater engagement (concentration) and motivation. Issues associated with Online Gaming Using latest technologies, the online gaming carries not just the risks usually associated with online technologies but it can cause a number of socio-economic issues such as:
- Physical and Psychological Harms: Some online games can lead to aggressive behavior and extreme obedience to technology, increasing violence and self-harm in society. E.g. o The Blue Whale Challenge Game- It was an online suicide game.
- Health Issues: The immersive games and increased game hours can lead to multiple health issues such as stress, anxiety, depression with disruption of sleep and discordant eating patterns.
- Gaming Addiction: Constant availability of these games leads to addiction, creating issues of social dysfunction (poor social skills) and larger financial losses due to greater number of platforms and options.
- Poor Educational Performance: Easy access to online games, particularly among children, can interfere

with school and educational performance of children due to time constraints. o Continued exposure to such games can lead to loss of socio-cultural conditioning and moral values as well.

- Negative impact on vulnerable sections: The rise in violence, financial losses etc. can increase violence/crimes against women and children at home and outside.
- Disordered Gambling: The lack of national gaming regulation increases chaos, leading to rise of illegal gaming apps from hidden players with ulterior motives.
- Limited legal awareness: Under seventh schedule, Betting and Gambling are in List II (State List). It leads to different laws in different states. E.g. o Recently, states like Tamil Nadu and Karnataka banned online rummy, fantasy, poker, etc. involving betting and wagering. The state High Court's lifted the ban as Games of Skill are legitimate under Article 19 (1) (g).

Way Forward

The decision to set up AVGC Promotion Task Force is a positive step and it should be further backed by specific steps for clarity on online gaming such as:

- Legal Clarity: Proper regulations on games involving betting and wagering from states or allow the centre to make regulations under Article 252. The centre can also do it on its own by using its residuary powers under Article 248.
- Regulatory Clarity: Establish a single regulatory body for the entire online gaming industry to standardize regulations. The regulator can also help in keeping a watch on it and take immediate steps to prevent import of games which are harmful to society.
- Information, Education and Communication (IEC): Use IEC to spread awareness on gaming ills and benefits for responsible play, good health and being social.
- Supervise Children at Home: Parents should supervise children's online gaming to check the type of games, time spent and learning outcomes.
- Curbing loss chasing: A cap can be introduced on the number of transactions from an individual across platforms or one platform to avoid greater economic losses.

6.5. Accessible India Campaign

- The goals of the Accessible India Campaign will be met in June 2022. o The original deadlines for the three types of projects ranged from July 2016 to July 2019. These have been pushed back to June 14, 2022.
- The goal of the Accessible India Campaign (Sugamya BharatAbhiyan) is to achieve universal accessibility for Persons with Disabilities (PWDs).
- The campaign is divided into three verticals to achieve universal accessibility for PWDs: built environment, transportation sector (airports, railways, public transportation), and ICT ecosystem

(websites and public documents, sign language interpreters and TV viewing).

- Ministry: Social Justice and Empowerment Ministry

6.6 E-Detailed Action Report (E- DAR) Portal

- It's a web platform developed by the Ministry of Roads, Transport and Highways (MoRTH) in collaboration with insurance companies that provides integrated data and real-time information on traffic accidents.
- Through digitalised detailed accident reports, the platform will provide relief to victims' families, as well as check for fraudulent claims (DAR).
- It will be linked to Vahaan and the Integrated Road Accident Database (iRAD) in order to function as an electronic version of IRAD.

It will also inform PWD/Local Body to examine and record details, assisting in the identification of accident hotspots and the implementation of essential measures to prevent future accidents.

7. Science and Technology

7.1. Traditional Medicine

The Director-General of the World Health Organization recently set the cornerstone for the world's first and only Global Centre for Traditional Medicine (GCTM) in Jamnagar, Gujarat.

More about the news

The GTCM will establish itself as a global wellness hub. The GCTM will be the first of its type in the globe, spreading ancient medicine's rich tradition as well as the social and cultural variety of diverse places.

The centre will collect data on alternative medicine analysis and will aid in the evaluation of traditional medication quality, safety, effectiveness, and ease of administration. The centre will also provide technical assistance with the drugs.

About traditional medicine

- Definition: According to the WHO, Traditional medicine (TM) is the sum total of the knowledge, skill, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness.
 - The terms “complementary medicine (CM)” or “alternative medicine” refer to a broad set of health care practices that are not part of that country’s own tradition or conventional medicine and are not fully integrated into the dominant health-care system. They are used interchangeably with traditional medicine in some countries.
 - India’s traditional and complementary medicines (T&CM) is also called as AYUSH (Ayurveda, Yoga, Unani, Siddha and Homeopathy). It is regulated by the Ministry of AYUSH which was formed in 2014.
 - According to WHO, 170 WHO member countries have acknowledged their use of T&CM since 2018.
- Advantages of mainstreaming T&CM
- Less capital intensive: The relatively low level of technological inputs are required for T&CM. As a result, they are affordable to poor people also and have the potential to contribute to a better health care system in many developing countries including India.
 - Enhancing the accessibility to public health facilities: Despite 71% of the country being predominantly rural, the proportion of Allopathic doctors in rural areas is only 34%. Proportion of Ayush doctors in some of the poorest part of the country is high. This in turn could enhance the accessibility of health facilities in remote areas.
 - Better disease management: Prevention is the most vital step of disease management. It reduces burden

of secondary and tertiary public health care facilities. AYUSH medicines play vital role in preventive care. Also AYUSH doctors could be roped in for providing services that does not need specialization in Allopathy.

- Improving doctor to patient ratio: In India, the ratio of the doctor-patient is 1:1456 if we consider only allopathic doctors; the ratio will come to 1:800 if the AYUSH practitioners are added. This is much better than the WHO recommendation of 1:1000. Thus, leveraging AYUSH doctors is vital for achieving universal health care services.
- Effective in managing chronic diseases: Scientific studies of several TM/CAM therapies show that their use is effective, e.g. for HIV/AIDS and cancer patients. Challenges in mainstreaming T&CM
- Marginalisation of T&CM: The National health Policy (NHP), 1983 had observed that planned efforts should be made to dovetail the functioning of the practitioners and integrate services across different systems of medicine in the overall health care delivery system.
- However, until recently, AYUSH and Allopathy health care system have existed as separate watertight compartments with disproportionately more weightage to allopathy.
- Skewed financing: In Budget 2020-21, the Ministry of Health and Family Welfare (MoHFW) was allocated ₹ 86,200.65 crore whereas the Ministry of AYUSH was allocated only ₹ Rs 3,050 crore. Such skewed financing would naturally create a gap between AYUSH and Allopathy in terms of research, education, training, etc.
- Low acceptance of AYUSH: National Sample Survey in 2014 indicates that only 6.9% of patients seeking outpatient care opted for AYUSH. In the case of hospitalised care, the proportion is less than 1%.
- State subject: Health being a state subject adds an extra layer of complexity to any national level initiative. There are states like Maharashtra that have adopted a realistic approach where AYUSH doctors are allowed to practice Allopathy and prescribe drugs, after completing a one-year course. However, such vital steps are missing in other states.

Way ahead

- Bridging the financing gap: Equal emphasis should be given to both AYUSH as well as Allopathy system. Public Private Partnership (PPP) could also be utilised to ensuring adequate funding of both the system. This would ensure adequate resources for stimulating strategic research into T&CM.
- Standardisation & Improving quality: Produce guidelines for T&CM by developing and providing international standards, technical guidelines and methodologies for research into products, practices and practitioners. These would help promote the safety, efficacy and quality of T&CM by expanding the knowledge base, and providing guidance on regulatory and quality assurance standards.
- Generating trust between Allopathy and T&CM: The need for mutual respect between the allopathic and AYUSH practitioners is paramount. Unless they respect each other's system of practice and work as a

team, there would always remain a schism in the health system. Mutual respect will also encourage cross learning as well as cross referrals which in turn will benefit the patient.

- Integration into national health system: Its proper integration into national health systems will enable consumers to have a wider choice when they wish to use such services. They can blend together in a beneficial harmony, using the best features of each system, and compensating for certain weaknesses in each.
- In this direction, in 2020, the Central Council of Indian Medicine amended Indian Medicine Central Council (Post Graduate Ayurveda Education) Regulations, 2016, to include the regulation to allow the PG students of Ayurveda to practise 58 types of general surgery.

7.2. One Health

In Uttarakhand, the Department of Animal Husbandry and Dairying (AHD) developed a pilot programme called "One Health."

More about current events

- The One Health Support Unit initiated a pilot project to apply the One Health Framework.
- The Unit's main goal is to create a national One Health roadmap based on the lessons learned from the pilot project.
- The implementation of the One Health Support Unit would be led by an inter-ministerial One Health committee chaired by the Principal Scientific Adviser to the Government of India.
- Under the chairmanship of Secretary (AHD), a Project Steering Committee (PSC) is formed, which includes representatives from the Ministries of Health and Family Welfare, Environment, Forest and Climate Change, ICAR, civil society, international development organisations, and field practitioners.

Some of the key activities to be undertaken as part of the pilot project include

Institutionalizing the mechanism for data collection on disease outbreaks, prevalence, management, and integration of the data with the digital architecture of the National Digital Livestock Mission

About One Health

- There is no single, internationally agreed upon definition of One Health.
- One Health is understood as a collaborative, multisectoral, and trans-disciplinary approach - working at local, national, and global levels – to achieve optimal health and well-being outcomes recognizing the interconnections between people, animals, plants, and their shared environment.
- One Health issues include zoonotic diseases, antimicrobial resistance, food safety and food security, vector-borne diseases, environmental contamination, and other health threats shared by people,

animals, and the environment.

- The overarching purpose is to encourage collaborations in research and sharing of knowledge at multiple levels across various disciplines like human health, animal health, plants, soil, environmental and ecosystem health in ways that improve, protect and defend the health of all species.

Global initiatives

- The Pilanesberg Resolution, 2001: It was targeted at multilateral and bilateral donors and governmental authorities to consider potential wildlife health impacts in development projects.
- One World-One Health: The Wildlife Conservation Society (WCS) introduced the term “One World-One Health” in 2007 along with 12 recommendations (the Manhattan Principles) that focused on establishing a more holistic approach to preventing epidemic disease and maintaining ecosystem integrity. Challenges in adoption of One Health Strategy
- Difficulty in coordination: There are relatively limited practical guidance and understanding on how to foster and sustain cross-sector collaborations. Coordination and consensus at national and international level for mobilisation of financial resources, etc. is also one of the hurdles that need to be resolved.
- Lack of inclusiveness: Mostly One Health strategy is seen as a governmental endeavour. Awareness about this concept among common people is very less. Therefore, cooperation and active engagement of individuals, communities and society are yet to take place.
- Systemic issues: Most nations do not have institutions whose primary missions are animal disease surveillance, control, and prevention.

Few qualified veterinarians are pursuing careers in livestock and wildlife health, probably because limited jobs are available. Funding of the projects, and transfer of technology are also acting as a hurdle.

Way ahead

- Consensus building: Cultivate champions in different sectors who can agree on common objectives that promotes innovation, adaptation, and flexibility in terms of political, financial and administrative accountability.
- Establishing international institution: An international body that would work for creating a global network of qualified individuals working locally, regionally, nationally, and internationally to share information with respect to various dimensions of One Health is needed.
- Mainstreaming One Health: Success is likely if One Health initiatives are institutionalised in existing structures and not championed by novel structures outside of mainstream systems.
- Adequate funding for animal health programme: Currently, human health is vastly better funded compared with animal health (some countries have minimal or no veterinary capacity). This needs to be addressed by creating more schools of veterinary medicine, both domestically and globally.

- Education: Engaging the medical community more in the future may require the incorporation of the One Health concept into the medical school curricula. This would ensure medical students see One Health as an essential component in the context of public health and infectious diseases.

7.3. European Organization for Nuclear Research (CERN)

After a three-year hiatus, the Large Hadron Collider (LHC) has been reactivated.

More about current events

- The LHC is run by CERN, the European Organization for Nuclear Research.
- The LHC has been closed for maintenance and repairs for the past three years.
- The LHC has undergone massive consolidation and will now run at a higher energy due to significant enhancements in the injector complex, delivering significantly more data to the improved LHC experiments.

About European Organization for Nuclear Research (CERN)

- Founded in 1954, the CERN laboratory sits astride the Franco- Swiss border near Geneva. It was one of Europe's first joint ventures.
- In 1951, at an intergovernmental meeting of UNESCO in Paris, the first resolution concerning the establishment of a European Council for Nuclear Research (in French Conseil Européen pour la Recherche Nucléaire) was adopted. This leads to establishment of CERN.
- CERN's main area of research is particle physics. Because of this, the laboratory operated by CERN is often referred to as the European Laboratory for Particle Physics.
- Members of CERN o Today CERN has 23 Member States: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovak Republic, Spain, Sweden, Switzerland and United Kingdom. They contribute to the budget of the Organization in proportion to their Net National Income (NNI).
- Observer status: Japan, the Russian Federation and the United States of America.
- This status is usually awarded to States that have made significant contributions to the CERN infrastructure, and to international organisations which maintain close links with CERN. Observers may attend Open Sessions of the Council, and do not have voting rights.
- Associate membership: Associate Members have to compulsorily pay a reduced contribution to the CERN budget and enjoy benefits which are reduced accordingly. o Associate Member States: Croatia, India, Latvia, Lithuania, Pakistan, Turkey and Ukraine. Benefits to India
- Accessibility to scientific data: As an Associate member India can access to all data generated at CERN. As there are many experiments in CERN, there will be plenty of information available.

- influencing policy. India's associate membership status ensure India has a larger say in decisions regarding scientific policy formulation and experiments at the highest levels.
- Access to research facilities: Indian scientists are eligible to apply for staff appointments at CERN. Indian graduate and doctoral students can attend different educational programmes and workshops held by CERN. . Indian scientists and engineers working in CERN will learn how to operate and maintain the facilities. So when they return it will be useful for India
- Benefits for Indian Industry: Indian industry can bid for CERN contracts, allowing for industrial cooperation in scientific research.
- Full membership: India's associate membership will be up for review every five years; it also has the option of applying to become a full member after two years. Full membership will grant India the right to vote, a privilege not accorded to Associate Members.

Conclusion

It is expected that the upgraded LHC may find an unknown fifth force of nature and the Dark Matter that makes up most of the Universe called. This would bring a paradigm shift for understanding the origin and evolution of the Universe. As India has been important part of this experiment, any new discovery would also further enhance the image of India in the field scientific milieu.

7.4 Gagan

- The Airports Authority of India (AAI) successfully performed flight testing employing a GAGAN-based LPV approach process, making India the first country in the Asia Pacific Region to do so (ANS).
- LPV (Localizer Performance with Vertical Guidance) permits aircraft guided approaches that are operationally nearly equivalent to Category 1- Instrument Landing System (Cat-1 ILS).

Without the need for ground-based navigational infrastructure

- It will provide substantial operational benefit in poor weather and low visibility conditions.

About GAGAN (GPS Aided GEO Augmented Navigation)

- GAGAN is an Indian Satellite Based Augmentation System (SBAS) jointly developed by AAI and ISRO for India and neighbouring countries in the equatorial region.
- It is one among the only four Space-Based augmentation systems available in the world which also includes US (WAAS) Europe (EGNOS) and Japan (MSAS).

Benefits of GAGAN

- Assist air traffic control to cope with increased traffic as well as improving performance while maintaining safety and reducing infrastructure needed on ground.

- Manage land transport in India, whether it is by road or railways.
- Help farmers in aerial crop spraying or precision farming, used for forest and wildlife resource management system.
- Glossary o Instrument Landing System is a standard International Civil Aviation Organisation (ICAO) precision landing aid that is used to provide accurate descent guidance signals for guidance to aircraft for landing on the runway under normal or adverse weather conditions.

7.5 Space Bricks

- ISRO and Indian Institute of Science (IISc) researchers have devised a method for producing complex-shaped bricks from Martian soil using bacteria and urea.
- The first slurry was created by combining Martian soil with guar gum, *Sporosarcina pasteurii* bacteria, urea, and nickel chloride (NiCl₂).
- Bacteria convert urea to calcium carbonate crystals.
- These crystals, in combination with biopolymers generated by bacteria, serve as a cement that holds soil particles together.

Previously, the researchers has used a similar process to make bricks from lunar soil.

7.6 W Boson

- Scientists recently discovered that a basic particle known as the 'W boson' (see infographics) has a much higher mass than the Standard Model predicts.
- This recent discovery suggests that our cosmos may have a new fundamental component.

Information about the Standard Model

- It is a set of mathematical formulae and measurements that describe the interactions of elementary or fundamental particles.
 - It has 12 elementary matter particles known as quarks and leptons, as well as three forces that govern matter's behaviour: electromagnetism, strong and weak nuclear forces.
 - The force of gravity is currently not included in the standard model).
 - This model was developed in the early 1970s, and is still considered to be the most accurate theory covering the foundations of particle physics.
 - It predicted the existence of yet-to-be discovered particles, such as the Higgs boson.
- **However, this model is yet incomplete and falls short of in explaining:**
- General relativity's description of gravity?
 - Why is the Universe expanding ever faster?
 - Why is there more matter than antimatter?

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