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REN21: RENEWABLES GLOBAL STATUS REPORT

Recently, REN21 released the Global Status Report 2021 which is the world's only crowd-sourced report on renewable energy (RE).

About REN 21:

- REN 21 stands for Renewable Energy Policy Network for the 21st Century. It is a global renewable energy community which draws its members from Governments, Scientific Community, Industries and NGOs.
- REN 21 was established in 2004 as an outcome of the Bonn International Conference on Renewable Energy. Its mandate has been to collect, consolidate and synthesize a vast body of renewable energy data to provide clear and reliable information on what is happening in real-time.
- Its broader objectives include support and acceleration to the development of renewable energy and enable the decision makers to make a shift towards renewable energy.

Major Highlights of the Report:

Indian Scenario

- **Global Ranking:** India has been ranked third in renewable energy installations, followed by China and Russia. India installed 15.4 GW of renewable energy projects in 2021.

India & Renewable Energy:

- **Solar Power:** It ranked fourth in total solar installations (60.4 GW) for the year 2021 thus overtaking Germany (59.2 GW) for the first time.
- **Hydro Power:** India added 843 MW of hydropower capacity in 2021, raising the total capacity to 45.3 GW.
- **Wind Power:** India ranked fourth globally for the total installed capacity of wind power (40.1 GW), behind China, the US, and Germany.

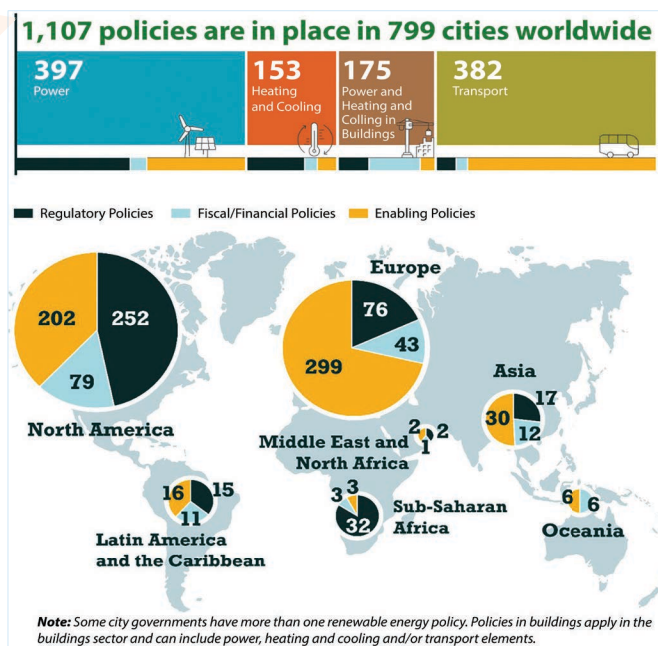
Concerns Cited for India:

- **Enhancing efforts:** Though India has added record-high capacities of renewable energy in 2021, it will take more for the country to reach its ambitious target of 500 GW by 2030.
- **Integration of new RE:** Another critical challenge would be integrating the new renewable energy generated with already huge capacity in the existing grid.
- **Uneven RE resource distribution:** Much of the installations have been in only five states where renewable energy already holds around 50%-60% share.
 - ♦ The five states where the maximum installations of RE has been done are namely Tamil Nadu, Maharashtra, Gujarat, Karnataka and Rajasthan.

- **Infrastructural revamping:** Adding more capacity would mean a significant investment in inter-state transmission infrastructure and Discom.
- **Social and environmental impact:** Renewable energy projects in India have seen adverse social and environmental impacts.
 - ♦ Various projects across India have come under scrutiny for the disruptions in traditional livelihoods and depletion of biodiversity.

Global Scenario

- **Power Sector:** Despite supply chain disruptions, shipping delays, and surging prices for wind and solar energy components, renewable power capacity additions grew 17% in 2021 to reach a new high of more than 314 gigawatts (GW) of added capacity.
- **Reliance on fossil fuels:** Renewables generated 28.3% of global electricity in 2021, similar to 2020 levels (28.5%) and up from 20.4% in 2011.
 - ♦ Despite the progress of renewables in the power sector, the surge in global energy demand was met mostly with fossil fuels.



- **Stagnation in RE:** The overall share of renewables in the world's final energy consumption has stagnated, rising only minimally from 10.6 percent in 2009 to 11.7 percent in 2019.

- **Supply-demand mismatch with the RE generation rate:** In the electricity sector, a record addition in renewable power capacity and generation took place with 314.5 gigawatts (up by 17 percent from 2020) but it was unable to meet the overall increase in electricity consumption of six percent.
- **Buildings:** Renewable energy represents 14.7% of final energy demand in buildings, supplied mostly by renewable electricity followed by modern bio-heat. The use of renewable electricity to generate heat in buildings has grown 5.3% per year, with electricity's share of building heating rising from 2.0% in 2009 to 3.3% in 2019.
- **Transport sector:** The transport sector has the lowest share of renewable energy use, with the overwhelming contribution coming from biofuels. Biofuels production bounced back in 2021 to surpass pre-pandemic levels for both ethanol and biodiesel. Electrification grew across nearly all transport modes through 2021.
- **Industry and Agriculture:** Renewables represent 16.1% of the industry and agriculture sector's total final energy consumption. Half of this renewable energy is used to produce heat (mainly from modern bioenergy, followed by small amounts of geothermal and solar thermal), and the other half is renewable electricity.
- Governments have pledged to support steel and concrete decarbonization. They also have developed specific industry decarbonization roadmaps that include the use of renewable energy and renewable hydrogen.
- **World Map of RE:** The GSR 2022 provided a world map of renewable energy shares by country and highlighted progress in some of the leading countries.
- Various factors, such as technological maturity and the ability to provide additional flexibility in the electricity network or heating system, have led Governments to integrate heat pumps into their climate action plans as a key means for decarbonizing heating in buildings.
- **Hydropower:** The global hydropower market progressed in line with long-term trends in 2021.
 - China maintained the lead in capacity additions in 2021, followed by Canada, and India.
 - Global pumped storage capacity grew around 1.9% (3 GW) during the year, with most new installations in China.
- **Ocean power:** The resource potential of ocean energy is enormous but remains largely untapped, and ocean power represents the smallest portion of the renewable energy market.
- **Solar PV:** Solar PV maintained its record-breaking streak, adding 175 GW of new capacity in 2021 to reach a cumulative total of around 942 GW.
 - It was driven by the economic competitiveness of solar power and the attractiveness of power purchase agreements.
 - Supply chain disruptions in 2021 highlighted the importance of domestic production of PV modules, with the United States extending its import tariff and India setting unprecedented high solar import duties.
- **Concentrating solar thermal power (CSP):** Global CSP market growth declined in 2021 despite reductions in technology costs.
 - The decline of CSP in the past decade has resulted from the competition with solar PV, policy changes, and project failures in the historically dominant markets of Spain and the United States.

Market and Renewable Energy industry Trends:

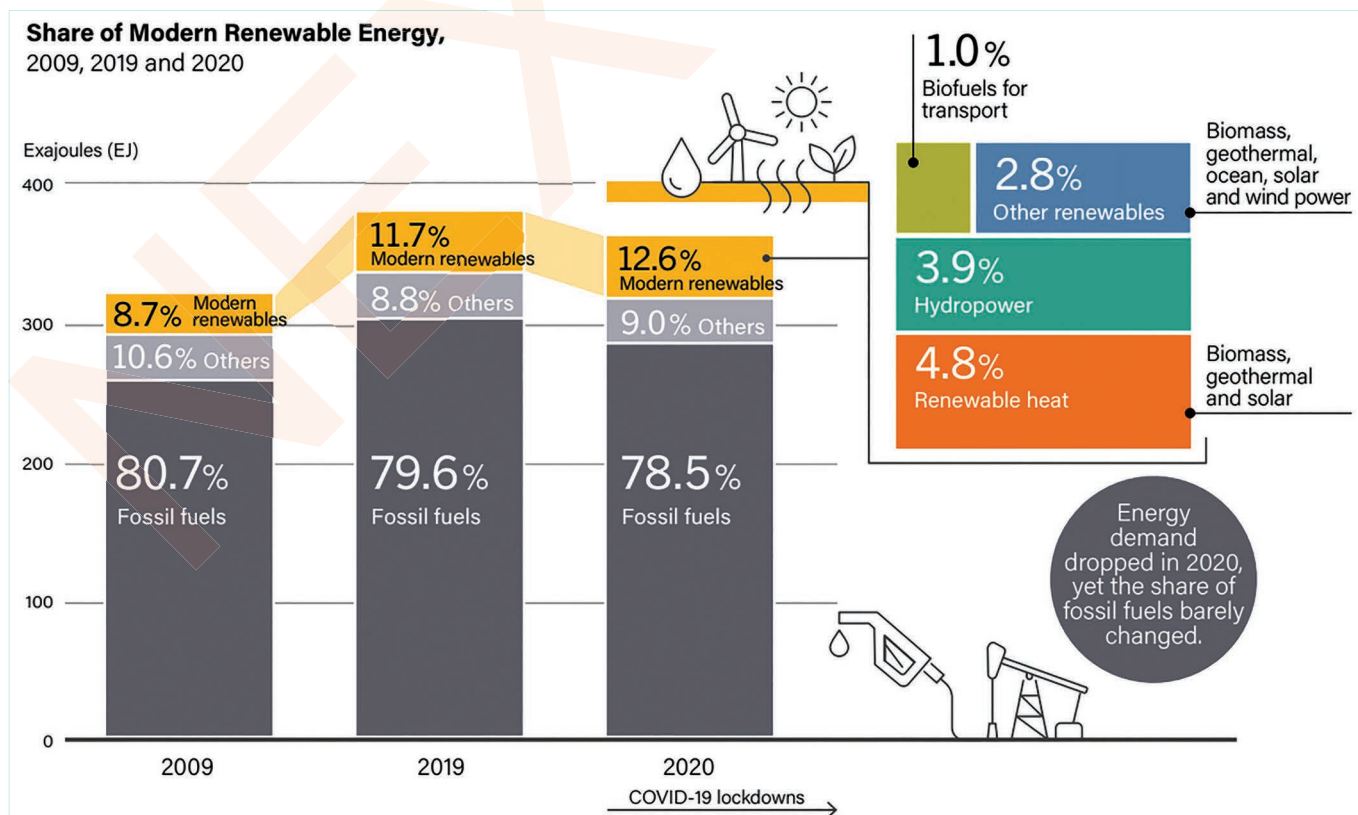
- **Bioenergy:** Modern bioenergy provided 5.3% of total global final energy demand in 2020, accounting for around 47% of all renewable energy in final energy consumption.
 - China, the USA, Brazil, and Germany remained the largest generator of bioelectricity.
- **Geothermal:** Geothermal electricity generation totaled around 97 TWh in 2020, while direct use of geothermal heat reached about 128 TWh.
 - The most active geothermal power markets have been Turkey and Indonesia. The top countries for geothermal direct use remained (in descending order) China, Turkey, Iceland, and Japan.
- **Heat Pumps:** In 2020, heat pumps met only around 7% of the global heating demand in residential buildings, fossil fuel-powered heaters and water heaters still comprised around half of the heating equipment sold.
 - Globally, air-source heat pumps continued to dominate the market in 2021, with the top regions being China, Japan, Europe, and North America.
- **Solar thermal heating and cooling:** The global solar thermal market grew 3% in 2021, to 25.6 GWth, bringing the total global capacity to around 524 GWth.
 - China again led in new installations, followed by India, and Turkey.
- **Wind Power:** An estimated 102 GW of wind power capacity was installed in 2021, including a record 18.7 GW offshore.
 - China led the market, followed distantly by the United States and Brazil.
 - However, the wind sector faces several challenges, including a lack of grid infrastructure and permitting issues.
 - These were compounded in 2021 by rising costs due to pandemic-induced supply chain constraints, labor shortages, shipping backlogs, and rising prices for major raw material inputs.
- **End of cheap fossil fuel era:** The collapse of the old energy order threatens the global economy. The year 2021 also marked the end of the era of cheap fossil fuels, with the largest spike in energy prices since the 1973 oil crisis.

Global Concerns cited by the Report:

- **Energy transition, not at requisite pace:** The report cautions a clear warning that the global clean energy transition is not happening at the required pace to be able to meet critical climate goals this decade.
 - ♦ Renewable energy capacities achieved so far come nowhere close to the targets required to keep the world on track to reach net-zero emissions by 2050.
- **Not sticking to commitment:** Pursuant to United Nations Climate Change Conference (COP26) in 2021, a record 135 countries pledged to achieve net-zero greenhouse gas emissions by 2050.
 - ♦ Only 84 of these countries had economy-wide targets for renewable energy, and only 36 had targets for 100 percent renewables.
- **Geopolitical impact:** Most countries have gone back to seeking out new sources of fossil fuels in the wake of the energy crisis caused by the pandemic and the Russia-Ukraine conflict.
 - ♦ Most of the increase in global energy use in 2021 was met by fossil fuels, resulting in the largest surge in carbon dioxide emissions in history, up more than 2 billion tonnes worldwide.
- **Increase in Investment:** Despite the impacts of the COVID-19 pandemic, renewables saw a year of record growth in both investment and installation.
 - ♦ New investment in renewables for the year 2021 increased by 70% to \$11.3 billion.
 - ♦ Government permitted Foreign Direct Investment (FDI) up to 100 percent under the automatic route.
- Waiver of **Inter-State Transmission System (ISTS)** charges for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025 had been decided.
- Declaration of trajectory for **Renewable Purchase Obligation (RPO)** up to the year 2022 was released.
 - ♦ Decision on setting up of RE parks to provide land and transmission to RE developers on a plug-and-play basis was taken.
 - ♦ Government set up a Project Development Cell for attracting and facilitating investments.
- **Standard Bidding Guidelines** were issued for tariff-based competitive bidding for procurement of Power from Grid Connected Solar PV and Wind Projects.
 - ♦ Government has issued orders that power shall be dispatched against Letter of Credit (LC) or advance payment to ensure timely payment by distribution licensees to RE generators.
- **Green Term Ahead Market (GTAM):** Launched to facilitate procurement of RE power through power exchange in the country.

Steps taken by India to boost Renewable Energy:

- **Pledge at COP26:** To achieve its climate goals, India has announced a target of 500 GW of renewable energy by 2030 as pledged at COP26.



- ♦ India has extended its national solar production programme by \$24.3 billion thus providing incentives to domestic and international companies for setting up battery manufacturing plants.
- ♦ Currently, projects worth almost \$197 billion are underway in India in the renewable energy sector. As of 31 December 2021, the total installed capacity for renewable energy in India is 151.4 GW.
- ♦ The government has introduced a slew of initiatives such as the **Performance Linked Incentive (PLI) Scheme**, Green Open Access Rules, Green Term Ahead, and Day-Ahead Market that will accelerate renewable energy deployment.
- ♦ India has created a ministry named Ministry of New & Renewable Energy as a nodal agency for all matters relating to new and renewable energy.
- ♦ In 2020, the Ministry of Power (MoP) issued the Draft Electricity (Change in Law, Must-run Status, and Other Matters) Rules, 2020 (Draft Electricity Rules).

Policies and Programmes to Promote RE in India:

- **International Solar Alliance:** It is a treaty-based international organization of countries lying completely or partially within the tropics to harness solar energy.
 - ♦ It is an collaborative initiative of India and France.
- **PM KUSUM:** Pradhan Mantri Kisan Urja Suraksha evamUtthaanMahabhiyan (PM KUSUM) is aimed at ensuring reliable power supply for irrigation using solar energy, reducing subsidy burden on discoms, and providing additional sources of income to the farmers.
- **Action plan for achievement of 175 GW renewable energy target by 2022:** This includes 100 GW of solar energy, 60 GW of wind energy, 10 GW of biomass power, and 5 GW of small hydropower.
- **National Solar Mission 2010:** It aims to establish India as a global leader in solar energy by adding 100 GW of solar power by 2022.
- **The rooftop solar programme 2019:** It was aimed at achieving 40,000 megawatts (MW) from rooftop solar projects by the year 2022.
- **Wild Energy:** 36 GW and 32 GW of offshore wind power potential exists off the coast of Gujarat and Tamil Nadu.
- **National Biofuels Policy:** It is aimed at taking forward the indicative target of achieving a 20% blending of biofuels with fossil-based fuels by 2025-26.

Challenges for RE Sector in India:

- **Concurrent Subject:** Electricity is a subject of the Concurrent List within the Constitution of India. Thus, Parliament as well as the state legislatures have concurrent powers to enact laws on this subject.

- ♦ However, there is a lack of necessary coordination, checks, and balances in the implementation of electricity policies.

- **Operational challenges:** Renewable energy project developers face several instances of sustainability and operational issues due to conflict between the Central and state governments. This undermines the spirit of collaborative and cooperative federalism and becomes a hurdle in the achievement of India's UNFCCC objectives.
- **Land acquisition:** It is still a big challenge for renewable energy developers in India. Issues such as lack of a proper Land Utilization Policy, poorly maintained land records, land ceiling limits, and the task of obtaining permissions from local bodies act as roadblocks to the implementation of large-scale renewable energy projects.
- **Curtailement of Must run Status:**
 - ♦ To incentivize and promote renewable energy, the status of 'Must Run' was granted to renewable energy power plants (except for biomass-based power plants) under the Indian Electricity Grid Code, 2010 (IEGC).
 - ♦ The 'Must Run' status means that evacuation of power from solar and wind power plants should not be curtailed for factors other than grid safety or safety of equipment or personnel.
 - ♦ However, in practice, State-owned Discoms, resort to curtailing renewable energy without communicating any reason. Such a curtailment is often used as a device to cause generation loss during peak renewable energy season.

“

The Gist

- The Global Status Report 2022 has highlighted that the transitioning to renewable energy sources is not happening at a pace so as to arrest the increase in the global average temperature below 1.5°C above the pre-industrial level.
- It provides clarity on renewable energy performance globally and sector-wise performance with respect to solar energy, bioenergy, wind energy, biothermal energy, etc.
- The report also gives ideas of RE applications and practical usage in buildings, power sector, transport, industry, and agriculture, etc.
- The global community should get into mission mode to have an effective transition so as to meet critical climate goals.

FIVE YEARS OF GST

1st July 2022 marked the completion of 5 years since the Goods and Services Tax (GST) was introduced in India.

Story so far:

- The idea of moving towards Goods and Services Tax (GST) was first mooted by the then Union Finance Minister in his Budget speech for 2006-07.
- Initially, it was proposed that GST would be introduced from 1st April 2010. The Empowered Committee of State Finance Ministers (EC) which had formulated the design of State VAT was requested to come up with a roadmap and structure for GST.
- The introduction of the Goods and Services Tax (GST) is a very significant step in the field of indirect tax reforms in India. By amalgamating a large number of Central and State taxes into a single tax, GST mitigated ill effects of cascading or double taxation in a major way and paves the way for a common national market.

About GST Timeline

- **2000:** The then Prime Minister conceptualized GST and set up a committee to design GST model
 - **2003-04:** FRBM Committee formed which recommended introduction of GST (Kelkar task force on indirect taxes)
 - **2006:** The then Union Finance Minister in Budget Speech announced introduction of GST from April 1, 2010.
 - **2009:** First discussion paper on GST released
 - **2011:** Constitution (115th Amendment) Bill 2011 for incorporating relevant provisions of GST was introduced in Parliament
 - **2011-13:** GST Bill was referred to Standing Committee
 - **2014:** Constitution (115th Amendment) Bill lapsed with the dissolution of 15th Lok Sabha, necessitating a fresh Constitutional Amendment Bill
 - **2014-15:** The Constitution (122nd Amendment) (GST) Bill, 2014 was introduced and passed in May 2015
 - **August 2016:** The Constitution (101st Amendment) Act was enacted
 - **September 2016:** Constitutional changes made vide 101st Amendment come into force. GST Council created, 1st GST Council Meeting held
 - **May 2017:** GST Council recommended all the rules
 - **1st July 2017:** GST Launched
- In 2017, The Union Government and the State Governments adopted the Goods and Services Tax following the vision of "One Nation, One Tax, One Market"

- According to a recently conducted GST survey, government had introduced measures like:
 - ♦ the introduction of e-invoicing
 - ♦ linking of inward and outward supply returns with the main GST returns
- These measures have helped in growth of revenues.
 - ♦ For example, in May 2022 revenue collection hit INR 1.41 lakh crore mark.
- Also, there is a significant increase in the tax base in India.
 - ♦ In July 2017, over 63.9 lakh taxpayers had registered for the GST regime.
 - ♦ June 2022 records mention 1.38 crore active GST registrations.

Salient Features of GST

- **Introduced:** The GST was launched in India in 2017 by the 101st Constitutional Amendment Act, 2016 as a indirect tax for the entire country.
- **Nature:** It is a comprehensive, multistage, destination based consumption tax. It accrues to the State or the Union Territory where the consumption takes place.
- **Types:** It is of 3 types:
 - ♦ **Central GST (CGST):** Levied by the Center.
 - ♦ **State/Union Territory GST (SGST/UTGST):** Levied by States or UTs
 - ♦ **Integrated GST (IGST):** Tax levied and collected by the Center on all inter-state supplies of goods and/or services.
 - The Center settles accounts with the States/UTs by transferring the SGST/UTGST portion of IGST to the destination state where goods/services were consumed.
- **Steps:** There are **four slabs for taxes for both goods and services:** 5%, 12%, 18%, and 28%. Different tax slabs were introduced because daily necessities could not be subject to the same rate as luxury items.
 - ♦ Besides, a cess is levied on the highest tax slab of 28% on luxury, sin and demerit goods. The collection from the cess goes to a separate corpus called **Compensation fund**. It is used to make up for revenue loss suffered by the state due to GST rollout.
- **Exempted Items:** The GST applies to all goods other than alcoholic liquor for human consumption and five petroleum products (common for the Center and the States): petroleum crude, motor spirit (petrol), high speed diesel, natural gas,

aviation turbine fuel and also applies to all services except the specified ones.

- **The GST has replaced the following taxes which were used to be levied and collected by the Center:**

- ♦ Central Excise Duty
- ♦ Duties of Excise (Medicinal and Toilet Preparations)
- ♦ Additional Duties of Excise (Goods of Special Importance)
- ♦ Additional Duties of Excise (Textiles and Textile Products)
- ♦ Additional Duties of Customs (commonly known as CVD)
- ♦ Special Additional Duty of Customs (SAD)
- ♦ Service Tax
- ♦ Central Surcharges and Cesses (related to supply of goods and services)

- **State taxes subsumed under the GST are:** State VAT, Central Sales Tax, Luxury Tax, Entry Tax (all forms), Entertainment and Amusement Tax (except when levied by the local bodies), Taxes on advertisements, Purchase Tax, Taxes on lotteries, betting and gambling, State Surcharges and Cesses (related to supply of goods and services)

- **Input Tax Credit:**

- ♦ Taxpayers are allowed to take credit for taxes paid on inputs (input tax credit) and utilize it for payment of output tax.
- ♦ However, input tax credit on account of CGST cannot be utilized for payment of SGST/UTGST and vice versa.
- ♦ However, the credit of IGST can be utilized for payment of IGST, CGST and SGST/UTGST respectively.

- **Harmonised System of Nomenclature (HSN) code:**

- ♦ **Nature:** It is used to classify the goods under the GST regime.
- ♦ **Exemption Slab:** 2-digit code for taxpayers with turnover above Rs. 1.5 crore but below Rs. 5 crore 4-digit code for the taxpayers with turnover is Rs. 5 crore and above
- ♦ Taxpayers having turnover below Rs. 1.5 crore are not required to mention HSN Code in their invoices.
- ♦ **Exports and supplies to SEZ** are treated as zero-rated supplies.

- **The exporter has an option:**

- ♦ to pay either output tax and claim its refund **or**
- ♦ export under bond without tax and claim refund of Input Tax Credit.

- **Import of goods and services** is treated as inter-State supplies.

- ♦ It is subject to IGST and the applicable customs duties.
- ♦ The IGST paid are available as ITC for further transactions.

- **Refund:**

- ♦ Time limit for claiming online refunds has been increased from one year to two years.
- ♦ Refund is granted within 60 days from the date of receipt of complete application.
- ♦ Interest is payable if refund is not sanctioned within the stipulated period of 60 days.

- **Alternate Dispute Resolution mechanism:**

- ♦ Advance ruling mechanism has been continued under the GST law.
- ♦ It can be sought not only for new activities but also for existing activities.
- ♦ Unlike the Central law which doesn't provide the facility of appeal, it has been provided in the GST Law.

Positives of the GST Regime:

- **Compliance simplification:**

- ♦ Uniform processes across the country
- ♦ Simple registration process - Single return - Minimal physical interface
- ♦ Faster refunds
- ♦ Fully IT driven system i.e. Goods and Services Tax Network (GSTN) portal
- ♦ Free flow of goods – Check posts removed

- **Adoption of technology:**

- ♦ Main focus of GSTN was to leverage technology and available data to improve compliance, detect frauds and support policymaking.
 - For this, GSTN formed a **Business Intelligence and Fraud Analytics (BIFA)** unit in March 2019.
 - BIFA harnessed artificial intelligence and machine learning to make the GST experiment work in the last five years of GST.
- ♦ GSTN assists tax officers daily by distributing internal reports thereby improving day-to-day tax administration.

- **Benefits of GST:**

- ♦ **Avoiding Cascading of Taxes:** It subsumed 17 local levies like excise duty, service tax and VAT and 13 cesses. In the pre-GST era, the total of VAT, excise, CST and their cascading effect led to 31% as tax payable, on an average, for a consumer.
 - With regular adjustment of items in the various tax rate brackets, the effective GST rate had come down to 11.6% in 2019 from 14.4% at its inception.
 - Quarterly Return, Monthly Payment of Taxes (QRMP) Scheme is a scheme to simplify compliance for small taxpayers. Under this scheme, taxpayers having an aggregate turnover at PAN level up to Rs. 5 crore can opt for quarterly GSTR-1 and GSTR-3B filing. Payment can be made in the first two months by a simple challan in FORM GST PMT-06. For the ease of taxpayers, system has assigned quarterly frequency to small taxpayers automatically.
- ♦ **To Consumers**
 - GST is a pro-people and customer-centric reform.
 - Under the GST, the rates of over 400 goods and 80 services are reduced. The highest rate, 28%, is restricted to sin and luxury items.

- Rollout of GST has led to widening of the tax base and thus the average tax rates are reduced.
 - Number of taxpayers has also doubled from earlier 60 lakh to about 1.2 crore.
 - The Government has progressively lowered tax rates on essential and daily use items like cereals, edible oils, sugar etc.
 - **A Finance Ministry study:** Indicated an aggregate of 4% consumer savings in household monthly expenses after GST.
 - ♦ **To Micro Small and Medium Enterprises (MSMEs):**
 - GST has enhanced a threshold exemption limit from Rs 20 lakh to Rs 40 lakh for goods.
 - The GST composition scheme allowed small businesses to pay a fixed rate on their turnover without any paperwork.
 - Composition threshold is Rs 1.5 crore a year for goods and Rs 50 lakh for services.
 - GST has also opened up new avenues through quick bill discounting and loans to MSMEs.
 - Also, the GST introduced the **quarterly returns and monthly payments (QRMP)** scheme (with annual turnover of Rs 5 crore) to reduce MSMEs compliance burden. It will potentially benefit 89% of the taxpayers.
 - **For Logistics Sector:**
 - ♦ GST enabled free movement of goods across states by ending long queues of trucks & goods carriers at highway toll plazas.
 - ♦ Since GST, there has been an improvement of over 33 % in transport time.
 - ♦ Multimodal transport and the **PM Gati Shakti** will further multiply logistics supply efficiency.
 - ♦ India saved millions of liters in petrol and diesel due to decongestion of arterial roads.
 - ♦ **The E-way bill system:** Helped the government in monitoring the movement of essential commodities and medical supplies during Covid-19 pandemic induced lockdown.
 - ♦ **Since the launch of GST regime:**
 - 67,000 transporters enrolled on the e-way portal and generated an average of 7.81 crore e-way bills per month.
 - a total of 292 crore e-way bills have been generated. Out of it, 42% bills are for inter state transport of goods.
 - **Cooperative Federalism:**
 - ♦ The GST Council is a constitutional body under Article 279A
 - ♦ It is a federal body comprising the Union Finance Minister as its Chairman and Finance Ministers of all States as members
 - ♦ The GST regime was based on the principle of fiscal federalism and consensus-based structure.
 - The GST Council members take almost all decisions on GST with consensus
 - Center's vote share: 1/3rd, all the State's total vote share: 2/3rd
 - It is enabling the Union and State Governments to work together on critical legal issues
 - Decisions are approved when passed by a majority of 3/4th of the weighted votes of the members present and voting
 - ♦ In the last 5 years, the GST Council has met 46 times. Despite COVID-19 turbulence, it lifted India's economy on the recovery path and facilitated India to become a fastest growing economy.
 - ♦ It is ensuring harmony in tax administration of India. It forged national consensus on tax regime related issues like tax rates, exemptions, business processes and ITC movements etc.
 - **Ease of doing business:**
 - ♦ GST has given a major boost to the 'Make in India' initiative of the Government by making goods and services produced in India competitive in the national or international market.
 - ♦ India's ease of doing business ranking has improved significantly from 130 in 2016 (before GST) to 63 in 2020.
 - ♦ **Tax Arbitrage:** GST regime has eliminated the tax arbitrage which existed among the states under the CST/VAT regime.
- Improvements Needed:**
- Though the government has been largely successful in creating a "One nation, one tax" structure, the GST system needs a simpler structure and lower compliance burden, in line with India's aim of ease of doing business.
 - **Need to unlock credit:**
 - ♦ GST aimed at seamless tax credits across the entire value chain without any losses.
 - ♦ However, the earlier tax regime carried forward the credit restrictions.
 - ♦ This added to the cost of businesses and blocked precious working capital for companies.
 - ♦ The inverted duty structure continues to be an issue as refund of input services is currently not allowed.
 - **Dispute resolution:**
 - ♦ There are multiple instances of inconsistent judgements passed by regional advance ruling benches.
 - Such contrary judgements result in unnecessary litigation for several businesses.
 - ♦ The GST Tribunal has also not been set up.
 - It is delayed due to larger legal issues causing several writ petitions at high courts, increased cost and pendency of litigation for companies.
 - ♦ Most of the GST litigation is centered around issues of ITC, GST officers powers w.r.t. enforcement, summons, arrest and attachment of property for recoveries.

- **Expansion of GST tax network:**
 - ♦ With petroleum, alcohol, natural gas etc. outside the GST, a large part of the economy is still outside the tax net.
 - ♦ Inclusion of petroleum products under the GST net would make taxes fully fungible and as a result reduce cost for companies.
- **Catering in Emerging Tech: Blockchain Technology**
 - ♦ Though GSTN has made huge strides in the GST landscape, blockchain technology has huge potential to improve efficiency in GSTN by resolving the technical glitches.
 - ♦ For example, GST network is still unreliable for small businesses at remote locations
- **Taxation of Virtual Digital Assets:**
 - ♦ In a recent Budget, the Government announced that cryptocurrencies would be taxed under income tax at a rate of 30%.
 - However, the GST law on Non-Fungible Token (NFT) does not mention specific rules in this area.
 - ♦ Due to the rising popularity of NFTs, its market has grown exponentially in recent years.
 - ♦ However, the GST classification of NFT transactions remains unclear.
 - To be more specific, GST does not clarify whether to classify supply of NFT as "goods" or "services" and also whether it qualifies as an actionable claim.
- **Ease of doing business (EODB) changes:**
 - ♦ Though GST technology has managed to cater to the requirements of government and industry, compliance provisions are still not full proof.
 - ♦ The requirement of setting up a principal office in each state where supplies are made from has not been fulfilled completely.
 - ♦ "Deeming fiction" provisions of self-supply and cross-charge are yet to reviewed, especially where it is revenue neutral
- **GST Compensation Fund Delays:**
 - ♦ States were assured of compensation for the loss of any revenue arising on account of implementation of GST for a period of 5 years.
 - ♦ A GST Compensation Cess has been levied on certain goods for this purpose.
 - ♦ Several states were highly dependent on the compensation.
 - E.g. Punjab (47% dependence), followed by Goa, Uttarakhand, Delhi and Himachal Pradesh.
 - ♦ During 2017-18 and 2018-19, bi-monthly GST compensation was released to States from the compensation fund on time
 - ♦ However, there were delayed release of the compensation fund recently due to:
 - widening of gap between the Cess Compensation Fund and 14% compounded growth rate in States revenue
 - COVID-19 induced increase in welfare burden on Center
 - Borrowings by the Center in the form of loans due to constrained fiscal capacity
- **15th Finance Commission (FC) report:** FC has highlighted several areas of concern in the GST regime, which are:
 - ♦ Multiplicity of tax rates
 - ♦ Shortfall in GST collections w.r.t. the forecast
 - ♦ High volatility in GST collections
 - ♦ Inconsistency in filing of returns
 - ♦ Dependence of States on the compensation from Center

Recent ruling of the Supreme Court on GST:

- Decisions taken by the GST Council are recommendatory with persuasive value and are not binding.
- The apex court rejected Center's stand that the entire structure of GST would crumble if GST Council's decisions are not treated as enforceable

What Next?

FOR BUSINESSES

- Goods importers get some relief as they are no longer liable to pay GST on ocean freight charges; Could seek refunds for past payments

reiterates the spirit in which the GST council is functioning

- All but one decision of the Council has been reached by consensus so far

FOR THE CENTRE AND STATES

- Finance Ministry believes SC order only

- The Council may be summoned soon to discuss SC verdict's implications



AN administrative body created by the constitution cannot have an overriding right on the legislature

TARUN BAJAJ, Revenue Secretary



The Centre had been arbitrarily imposing its decisions on states.... We hope the verdicts would pave the way for states to protect rights

K.N BALAGOPAL, Kerala Finance Minister

- Article 246-A inserted after the 122nd constitutional amendment clearly offers:
 - the power to levy the central GST (CGST) to the Parliament,
 - the power to levy state GST (SGST) to the state legislatures
 - Parliament has exclusive power to make laws with respect to the GST on items that are part of inter-state trade or commerce.
- Article 279 A:** This constitutional provision confers simultaneous power on the Union and the States for enacting laws on the GST.
- The actual decisions about model GST levies, principles of levy, apportionment of GST levied on inter-state supplies, principles relating to place of supply, exemptions and rate structure and any special provisions will have to be taken by either Parliament (case of CGST and IGST) or the states (in the case of SGST).
- Thus, existence of a harmonized GST and reforms in the tax system will be dependent on continued negotiation and bargaining i.e. intergovernmental cooperation between the Union and the States.
- SC judgment that the union and the States have “equal, simultaneous and unique” powers (Art. 246 A and Art. 279 A) to enact GST laws and non binding recommendations of the GST Council will significantly boost bargaining capacity of States.
- Betting, gambling, horse racing, online gaming and lottery
- IT-related matters
- Movement of precious items such as gold, etc
- Key outcomes of the 47th GST Council meeting are:**
 - GSTR-3B (Monthly GST return for taxpayers) amendments to be allowed.
 - GSTR-9 and GSTR-9A to continue with some relaxations
 - Relief to e-commerce suppliers by allowing them to register under the composition scheme for intrastate supplies.
 - Deadline extensions to composition taxpayers (28th July 2022)
 - Pruning of GST rate and exemption list:** The GST Council accepted interim report of GoM on rate rationalization completely. E.g. Partial exemption to petroleum, e-waste are now withdrawn.
 - Correction of Inverted Tax Structure:** It hiked and cut the rates on certain goods and services. It will come into effect from 18th July 2022.
 - More clarity** given for allowing money in electronic credit ledger and electronic cash ledger to be used to pay output tax dues in returns. But, they cannot be used to pay off penalties, late fee and interest.
 - The GST Council will form a Group of Ministers (GoM) to consider setting up **GST Appellate Tribunals** after detailed structural study.
 - A **comprehensive review** of the National Anti-profiteering Authority would be taken up.
 - It approved waiver from the filing of refund claims by condoning the 2 year COVID-19 period from 1st March 2020 to 28th February 2022.

MOHIT MINERALS VS UNION OF INDIA

In this judgment, the Gujarat High Court held that:

Under the IGST Act no tax could be levied on ocean freight for services provided by a person located in non-taxable territory, by way of transporting goods by a vessel from a place outside India up to the Customs station of clearance in India.

47th GST Council Meeting:

- The 47th GST Council meeting was held on 28th and 29th June, 2022.
 - It decided that the 48th GST Council meeting will be held during the first week of August 2022.
 - Its agenda would include the setting up of GST Appellate Tribunals and fixing the GST rate on casinos, online gaming etc as per the GoM's report.
- Several states have urged extension of the compensation guarantee beyond its initial 5 year period as 14% revenue growth guarantee ended and states will be in dire need of funds.
- Four Group of Ministers (GoM) reports were discussed in the meeting which formed the core agenda. The reports were:
 - Interim report on rate rationalization, exemptions and correction of inversion nature

“ The Gist

- Launched in 2017 by the 101st Constitutional Amendment Act, the GST has completed 5 years of its successful operation.
- GST is an indirect, comprehensive, multistage, destination based consumption tax.
- All the decisions regarding GST matters are taken by the GST Council by consensus, showcasing cooperative fiscal federalism in true spirit.
- GST roll out has helped the government in landmark revenue earnings as well as widening of tax base.
- There have been some issues related to GST w.r.t. refunds, technological glitches, complex and frequent amendments, dispute resolution etc.
- A recent SC judgment clarifying the advisory nature of the GST Council has given more bargaining capacity to states for extending timeline for GST compensation.

THE ANTI-DEFECTION LAW

The defection of Shiv Sena MLAs from Maharashtra Government coalition has once again brought Anti-Defection Law at the center stage.

About:

- Anti Defection Law was added to the Constitution in 1985 by the 52nd Constitutional Amendment Act.
- The amendment added the Tenth Schedule, popularly known as the anti-defection law to the Constitution.

Reason for bringing in the Law:

- Period post-1967 saw multiple State Governments toppling after MLAs changed their political loyalties.
- The phenomenon was termed as 'Aya Ram, Gaya Ram' culture.
- The objective of anti-defection law was to bring stability to Governments by deterring MPs and MLAs from changing political sides.

Anti-Defection Law:

- The anti-defection law provides for the disqualification of MLAs and MPs from the membership of the House:
 - ♦ If he voluntarily gives up the party membership after being elected on the ticket of a political party
 - ♦ If he votes or abstains from voting in such House contrary to any direction issued by the political party to which he belongs
- **Independent MLAs / MPs:** The law is also applicable to independent MLAs / MPs. The independent MLAs/MPs are prohibited from joining a political party.
 - ♦ In case they do so then they stand to lose their membership in the legislature/parliament under the anti-Defection Law.
- **Nominated MLAs/MPs:** In their case, the law specifies that within six months of being nominated to the House, they can choose to join a political party.
 - ♦ In doing so they are not disqualified on grounds of Anti-Defection Law.

Exception to the Anti-Defection Law:

- **Two-Third Rule:** The anti-defection law does not apply if the number of MLAs/MPs who leave a political party constitute two-thirds of the party's strength in the legislature.
 - ♦ These MLAs can merge with another party or become a separate group in the legislature.
- **Presiding Officer:** When the Presiding Officer of the House, after being elected to the office, gives up the membership of his party.

Impact of Anti Defection Law:

- **Undermines Political democracy:** People send their representatives to work for their betterment and redressal of their grievances. The anti-defection law compels the legislator to toe the party line even if it is against the wishes of its constituency.
- **Subverts electoral mandate:** Citizens exercise their will through ballots and form the Government of their choice. Provisions of Anti defection law has led to formation of Governments defying citizen's mandate.
- **Affects functioning of elected government:** Defections harnessing the provisions of the law has led to interregnum of Government thus affecting the Government's decision making and policy formulation as parties in power are consumed in saving the Governments during defection. It creates governance vacuum.
- **Promotes mass defection:** Though the anti-defection law has been put in place still political defections are a common phenomenon and related proceedings have been going on in various courts throughout India.
 - ♦ Earlier there used to be retail defections but the coming up of the law has led to political parties pushing the limits and going for wholesale defections leading to horse trading at en masse levels.
- **Compromising the Chair of speaker:** The role of the adjudicating authority, the speaker of the House, has been under scrutiny in most of the anti-defection cases.

Shortcomings of the Law:

- **Legislators can not follow individual conscience:** Critics argue that the anti-defection law prohibits legislators from forming their own opinion and exercising it.
 - ♦ They have to follow the party line even if they disagree with it on moral or ethical grounds.
- **Powers with Presiding officer/Speaker:** Under the law, the Speaker decides whether the disqualification would take place or not while being a member of the political party (conventionally, ruling). This is against the 'principle of natural justice'.
- **No definite timeline:** Though the Constitution has ascribed the process but it has not laid down the definite timeline under which the entire process has to take place which leads to discretion exercised by the Speaker.

- **Irrational Provisions:** The law allows nominated legislators to join a political party within 6 months of being nominated to the house but prohibits the independent legislators from doing so.
 - ♦ Also, it prohibits single legislators if he defects but allows en masse (two-third or more members) defections.

Recent Instances of defiance of Anti-Defection Law:

- **Centre (Confidence Motion), 2008**
 - ♦ In 2008, a confidence motion was moved by the United Progressive Alliance government in Lok Sabha. The motion became imperative since the Communist Party of India (Marxist) withdrew support from the government over the nuclear deal with the USA.
 - ♦ Although the anti-defection law was in force, 21 MPs defied the whips issued by their party while voting on the motion.
- **Uttarakhand (Appropriation Bill), 2016**
 - ♦ Nine MLAs of the Congress party (Ruling) went with the opposition in demanding a counting of votes on an Appropriation Bill that could have potentially led to the downfall of the government.
- **Arunachal Pradesh (No-Confidence Motion), 2015-16**
 - ♦ Around twenty MLAs of Congress party (Ruling) defected in Arunachal Pradesh in 2015. The defected MLAs with the opposition passed the no-confidence vote against the ruling government in a special session.
 - ♦ In 2016, the Supreme Court held the dismissal of the Congress government as illegal and called for its restoration.

Few Recommendations on Anti-defection Law:

- **The Law Commission**
 - ♦ The provisions pertaining to merger and split in the Anti defection Law should be done away with.
 - ♦ Following the recommendation, the 91st Constitutional Amendment Act, 2003 was brought into force which omitted the split provision (one-third members exiting the political party) but continued with the merger provision.
- **The National Commission to Review the working of the Constitution (NCRWC)**
 - ♦ The Speaker is not an independent authority when it comes to deciding the disqualification of legislators on the grounds of anti-defection law.
 - ♦ Though he resigns from the party membership on assuming the role of the Speaker, he may have a bias.
 - ♦ To rectify the above the Commission recommended setting up an independent authority to decide on the disqualification.
- **Dinesh Goswami Committee**
 - ♦ Disqualification should be limited to cases where:
 - a member voluntarily gives up the membership of his political party

- a member abstains from voting, or votes contrary to the party whip in a motion of vote of confidence or motion of no-confidence.

- ♦ The issue of disqualification should be decided by the President / Governor on the advice of the Election Commission.

• Halim Committee

- ♦ The words 'voluntarily giving up membership of a political party' be comprehensively defined.
- ♦ Restrictions like prohibition on joining another party or holding offices in the government be imposed on expelled members.
- ♦ The term political party should be defined clearly.

• Election Commission

- ♦ Decisions under the Tenth Schedule should be made by the President/ Governor on the binding advice of the Election Commission.

Role of Speaker and Governor:

• Speaker

- ♦ The Tenth Schedule gives the Speaker sweeping discretionary powers with respect to disqualification of MPs/MLAs under the law.
 - It states that if any question arises as to whether a member of a House has become subject to disqualification under this Schedule, the question shall be referred for the decision of the Chairman or as the case may be, the Speaker of such House and his decision shall be final.
- ♦ **Kihoto Hollohan case (1992):** In Kihoto Hollohan case, the Supreme Court upheld the decision of the speaker in deciding on the question of disqualification of the legislators on grounds of defection.
 - However, it declared that the decision of the speaker/ presiding officer is not final and is subject to judicial review on the grounds of mala fide intentions.
- ♦ **Nabam Rebia Ruling (2016):** The Supreme Court in Nabam Rebia ruling stated that it is constitutionally impermissible for the speaker to proceed with disqualification proceedings under the tenth schedule if a no-confidence motion against him is pending.
 - This is to ensure that the speaker who disqualifies legislators must enjoy the confidence of the house.
- ♦ Post-split, if the house is in session the onus to call for floor test lies on the Speaker.
- ♦ **Article 93 and Article 178:** The two articles of the Constitution for the Parliament and Legislative Assembly respectively confer on the Deputy Speaker of the house to exercise powers with respect to the Anti-Defection Law in the absence of the Presiding officer.

- **Governor**

- ♦ **Article 174(2)(b)** of the Constitution gives powers to the Governor to dissolve the Assembly on the aid and advice of the cabinet.
 - However, the Governor can apply his mind when the advice comes from a Chief Minister whose majority could be in doubt.
- ♦ **Under Article 175(2)**, the Governor can summon the House and call for a floor test to prove whether the government has the numbers.
 - The general convention is that when the House is in session, it is the Speaker who can call for a floor test.
 - But when the House is not in session, the Governor's residuary powers under Article 163 allow him to call for a floor test.

Way Forward:

- **An Independent Authority:** The power to disqualify the legislators should be transferred to an independent authority from the Speaker. This would be in consonance with the Principle of Natural justice.
 - ♦ The non-partisan authority could be the President or the Governor.

- **Fixed Timeline:** The time horizon to decide on the disqualification question should be ascertained statutorily so that the discretion could be done away with.
- **'Merger' issue:** The 91st Constitutional amendment outlawed the one-third split rule of the law.
 - ♦ The time has come when the Parliament should decide on removal of the two-third merger rule to provide stability to the governments.

“

The Gist

The anti-defection law has not entirely materialised its objective of preventing political defections and ensuring political stability. Moreover, it also does not allow legislators to exercise his own conscience and morality. In light of the above, it is pertinent that the law should be amended so as to attain its stated objective of ensuring political stability and check defections. The recommendations by the Law Commission and the NCRWC should be taken into account.

ANTI-DEFECTION LAW

- The anti-defection law came into being with the **inclusion of the Tenth Schedule in the Constitution in 1985, through the 52nd Amendment Act.**
- According to the law, if a member of Parliament or state legislature **gives up his membership of a political party or votes or abstains from a vote contrary to the directions of his party, he can be disqualified.**
- The 1985 Act allowed for one-third or more of the **elected members of a party to merge with another party without being disqualified.**
- Since an amendment in 2003, the **minimum number required for a merger is two-thirds of the elected members of a party.**
- The law has been criticised for impinging on the **rights of elected representatives to take a position different from their party's.**
- The law has not been very **effective in curbing defections.**

WTO: 12TH MINISTERIAL CONFERENCE

Recently, the WTO's 12th Ministerial Conference (MC12) took place at WTO headquarters in Geneva.

About

- Commerce Ministers of member states gathered at the 12th MC of WTO to review the functioning of the multilateral trading system
- The Conference was co-hosted by Kazakhstan which was originally scheduled to host MC12 in 2020 but the conference was postponed due to the COVID-19 pandemic.

Key Takeaways:

- **Curtailling harmful fishing subsidies**
 - ♦ The 12th MC passed a multilateral agreement, AFS (Agreement on Fisheries Subsidies) that would curb harmful subsidies on illegal, unreported and unregulated fishing for the next four years, to better protect global fish stocks.
 - ♦ Member states have been pressing for a ban on subsidies that promote overfishing.
- **Global Food Security**
 - ♦ Members agreed to a binding decision to exempt food purchased by the UN's World Food Programme (WFP) for humanitarian purposes from any export restrictions.
 - ♦ The move came in the backdrop of global food shortages and price spike caused by the war between Ukraine and Russia.
 - ♦ Though the nations would be allowed to restrict food supplies to ensure domestic food security needs.
- **E-commerce transactions**
 - ♦ All members agreed to continue the long standing moratorium on custom duties on e-commerce transmissions until the subsequent Ministerial Conference.
 - ♦ WTO members had first agreed to not impose custom duties on electronic transmissions in 1998, when the internet was still relatively new. The moratorium has been periodically extended since then.
- **Covid-19 vaccine production**
 - ♦ WTO members agreed to temporarily waive intellectual property patents on Covid-19 vaccines without the consent of the patent holder for 5 years, so that they can more easily manufacture them domestically.
 - ♦ The move will facilitate the ongoing efforts to concentrate and diversify vaccine manufacturing capacity so that a crisis in one region does not leave others cut off.
 - ♦ The current agreement is a watered down version of the

original proposal made by India and South Africa in 2020 as they pitched for broader intellectual property waivers on vaccines, treatments and tests.

- **Reforming the WTO dispute settlement process**
 - ♦ The 12th MC agreed on an agreement to arrive at a fully and well-functioning dispute settlement system accessible to all Members by 2024.
 - ♦ This has been in the wake of the U.S scuttling the dispute resolution process by blocking the appointment of judges at WTO thus leading to pendency of the cases at the forum.
- **Other Decisions Adopted by Ministers**
 - ♦ Work Programme on Small Economies
 - ♦ TRIPS non-violation and situation complaints
 - ♦ Sanitary and Phytosanitary Declaration for the Twelfth WTO Ministerial Conference (Responding to Modern SPS Challenges).

WORLD FOOD PROGRAMME (WFP)

- **About**
 - ♦ The WFP is the food assistance branch of the United Nations. It is the world's largest humanitarian organisation.
 - ♦ It was established in 1961 by the United Nations (UN).
- **Objective:** To ensure food security and alleviating hunger across the globe.
- **Headquarters:** Rome, Italy
- **Governance:**
 - ♦ WFP is governed by an Executive Board consisting of 36 Member States which provides intergovernmental support, direction and supervision of WFP's activities.
 - ♦ The organisation is headed by an Executive Director, who is appointed jointly by the UN Secretary-General and the Director-General of the Food and Agriculture Organisation of the United Nations.

India's key demands and related outcomes:

- **E-commerce Transactions:**
 - ♦ India asked the WTO to review the extension of the moratorium on custom duties on e-commerce transactions which include digitally-traded goods and services.
 - ♦ The Indian Commerce and Industry Minister argued that developing countries faced the brunt of the financial consequences of such a moratorium.

- **On Food Security:**
 - ♦ India asked the WTO to renegotiate subsidy rules for government-backed food purchasing programs aimed at feeding poor citizens in developing and poor countries.
 - ♦ India demanded to export food from its public stockholdings to other countries. However the demand has been shelved for the next Ministerial Conference in 2023.
- **IPR waiver on Covid-19 Vaccines and Related Products:**
 - ♦ India along with other developing countries opposed any move by the developed countries to dilute the proposed waiver of Trade-Related Aspects of Intellectual Property Rights (TRIPS) for vaccines and related products.
 - ♦ However, what 12th MC offered is partial compliance to India's demand in form of narrower waiver under TRIPS regime. India vouched for broader waiver for the products.
- **Fishing Subsidies**
 - ♦ India along with some developing countries was able to win certain concessions in this agreement as they successfully lobbied to remove a section of the proposal that would threaten some subsidies which would assist small-scale artisanal fishing.
- **Pertaining to WTO Reforms:**
 - ♦ India stressed on preserving Special and Differential Treatment (S&DT), which includes consensus-based decision making, non-discrimination and special and differential treatment.
 - ♦ In addition it also asked the WTO to further the Doha Development agenda which has been delayed for almost a couple of decades now because of varied interests of the developed world.
 - ♦ India also affirmed WTO reforms must focus on strengthening its fundamental principles.

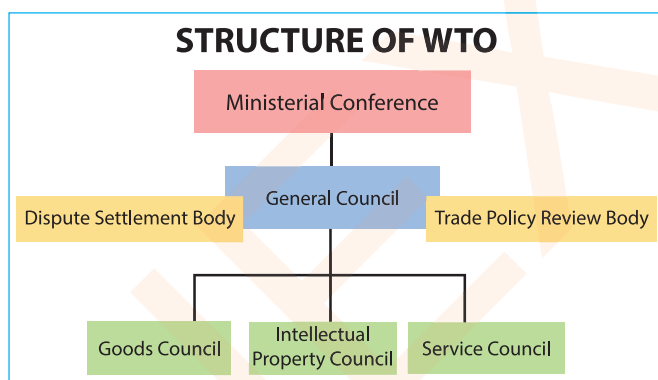
Negotiations by Other Important Countries:

- **Brazil**
 - ♦ Brazil pitched for a broader response to pandemic and public health, including for diseases that are neglected in developing countries thus nudging the forum to extend the waiver and health package to other diseases as well.
 - ♦ Brazil sought a mechanism to stabilise food markets, a deal on fisheries subsidies and restoration of the dispute settlement mechanism, blocked by the US.
 - ♦ Other demands included WTO backing for agreements on services, investment and e-commerce.

WORLD TRADE ORGANISATION

- WTO is the international organisation that deals with the rules of trade between countries.
- It was founded in 1995 pursuant to the Marrakesh Agreement (Uruguay Round) thus replacing the General agreement on Tariffs and Trade (GATT) which was established in 1948.
- It has 164 members representing over 98% of global trade and global GDP.
- As per WTO rules, all decisions are taken through consensus and any member can exercise a veto.
- **Objectives:**
 - ♦ It works to promote free trade via trade agreements that are discussed and agreed to by the member states.
 - ♦ The WTO provides a forum for countries to negotiate trade rules.
 - ♦ It also mediates and settles economic disputes between the member states.
- **Ministerial Conference**
 - ♦ The Ministerial Conference is the WTO's top decision-making body.
 - ♦ It generally meets every two years.
 - ♦ Members of the WTO take part in the MC and take decisions on all matters covered under any multilateral trade agreements.
- **General Council:** Day to day work in between the ministerial conferences is handled by:
 - ♦ The General Council
 - ♦ The Dispute Settlement Body
- **The Trade Policy Review Body**
 - ♦ All the three bodies are actually a single body, although they meet under different terms of reference.
 - ♦ The General Council acts on behalf of the Ministerial Conference on all WTO affairs.
 - When it meets to oversee procedures for settling disputes between members then it is referred to as Dispute Settlement Body.
 - When it meets to analyse members' trade policies then it is referred to as Trade Policy Review Body.
 - ♦ They report to the Ministerial Conference.

- **China**
 - ♦ China pressed for reforms of the WTO, including restoring the WTO dispute mechanism, up-to-date rules on agriculture, services and investment.
 - ♦ China underlined the need to protect the interests of developing countries. It asserted that the new rules should not benefit a few and wants steps to support speedier global recovery.
- **Europe**
 - ♦ The European Union demanded an overhaul of rules for agriculture, including trade-distorting sops, public stockholding and transparency.
 - ♦ The EU happens to be the main hurdle in the TRIPS waiver plan but it too agreed with AFS (Agreement on Fisheries Subsidies).
- **USA**
 - ♦ The US pitched for updated rules for the new digital economy to boost the digital economy. It argued that pandemic has led to increased digitisation of the economy and hence WTO should come out with a set of rules in consonance with the changing paradigm.
 - ♦ It reiterated its older demand for international e-commerce norms and also backed relaxation of patent regime for Covid19 vaccines.
 - ♦ It also asserted the need for countries to exempt export restrictions on the World Food Programme.



From GATT to WTO:

- **GATT:** From 1948 till 1994, the GATT provided the rules for much of world trade and presided over periods that saw some of the highest growth rates in international commerce.
 - ♦ It seemed well-established but throughout those 47 years, it was a provisional agreement and had no dedicated secretariat.
- **WTO:** The WTO's creation marked the biggest reform of international trade since the end of the Second World War.
 - ♦ **Services and Intellectual property Too:** Whereas the GATT mainly dealt with trade in goods, the WTO and its agreements also cover trade in services and intellectual

property. The birth of the WTO also created new procedures for the settlement of disputes.

Need for Reforms at WTO:

- **Bias towards Developed Countries:**
 - ♦ Developing countries are of the view that the organisation has become a platform to further the interests of developed countries alone thus eroding the neutral credentials of the body.
- **Not reflecting today's Multipolarity**
 - ♦ The structure, membership, functioning of the WTO has not changed with changing times.
 - ♦ It is in the third decade since its foundation and the world was unipolar then. Today the world is multipolar and the WTO should reflect the changed reality.
- **Rules Unfavourable to Services**
 - ♦ The rules of WTO favours trade of goods alone while putting handicaps on movement of personnels of service industry.
- **Flawed Subsidy Regime**
 - ♦ The WTO rules allow direct subsidies offered by the developed countries but puts severe restrictions on indirect subsidies which developing countries extend to various sectors.
- **WTO mandate diluted by Multilateral Trading Blocks**
 - ♦ Mushrooming of various trading blocks has led to cornering of various countries in international trade who are not members of any trading blocks in international trade.
 - ♦ The members tend to trade among themselves at lower or no customs duty on account of being members of the trading block. The non-members are thus not able to participate in trade.
 - ♦ **Example:** NAFTA, EU, APEC

About WTO and Sustainable Development Goals (SDGs)

- The WTO is playing an important role in the achievement of the UN's Agenda 2030 for Sustainable Development and collaborates closely with the UN's Department for Economic and Social Affairs (UNDESA) in monitoring progress in attaining the Sustainable Development Goals (SDGs).
- The WTO reports annually to the UN's High-level Political Forum (HLPF) on WTO efforts to achieve trade-specific targets in the SDGs.
- The HLPF is the UN's main means of reviewing the 2030 Agenda for Sustainable Development and allows all UN members and specialised agencies to meet annually to evaluate progress on achieving the SDGs.

DOHA ROUND

- The Round was officially launched at the WTO's Fourth Ministerial Conference in Doha, Qatar, in November 2001.
- The Doha Round is the latest round of trade negotiations among the WTO membership.
- Its aim is to achieve major reform of the international trading system through the introduction of lower trade barriers and revised trade rules.
- **Objective:**
 - ♦ Its fundamental objective is to improve the trading prospects of developing countries. It covers around 20 areas of trade.
 - ♦ The round provided the mandate for the negotiations, including on agriculture, services and intellectual property.
 - ♦ It also provided for how to address the problems developing countries face in implementing the current WTO agreements.
- **Deadlock:** Doha Round negotiations have been stalled as the participating countries could not reach a consensus over trade negotiations with major differences between developed and developing countries.

Way Ahead:

- Though the 12th MC saw certain breakthroughs such as AFS, IPR waiver on Covid19 vaccines, there are still long pending issues critical to seamless and transparent trade internationally.
- Areas such as investment, new technology, services, subsidies, competition are yet to see a consensus based international trade cooperation.
- The structural reforms pending for long now should be dealt with urgency so as to reflect the new geopolitics.
- The WTO has the potential to contribute given the members are serious about the reforms not just in letter but spirit as well.

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The Gist

The WTO 12th MC came at a time when the world has been grappling with Covid19 pandemic and Russia-Ukraine conflict. It has steered these two events satisfactorily through IPR waiver and working towards food security. However, the overdue pending list of demands by the developing countries was kept far from being addressed even this time.

WTO: AGREEMENTS

- General Agreement on Tariffs and Trade (GATT)
- General Agreement on Trade in Services (GATS)
- Trade Related Investment Measures (TRIMS)
- Trade Related Aspects of Intellectual Property Rights (TRIPS)

TRIPS	TRIMS	GATS
Literal Works	To facilitate investments	Movement of persons
Artistic work	To liberalize world trade	Air transport
Industrial Property	To strike out investment measures which can create hindrance	Financial services
	Taking into account needs of developing and least developing countries	Shipping

DOMESTIC SUPPORT IN AGRICULTURE BY WTO

- In WTO terminology, subsidies in general are identified by “boxes” which are given the colours of traffic lights: green (permitted), amber (slow down, i.e. need to be reduced), red (forbidden).
- The Agriculture Agreement has no red box, although domestic support exceeding the reduction commitment levels in the amber box is prohibited; and there is a blue box for subsidies that are tied to programmes that limit production.
- The three different categories of boxes have been defined as:
 - ♦ **Amber box:** Nearly all domestic support measures considered to distort production and trade (with some exceptions) fall into the amber box. These include measures to support prices, or subsidies directly related to production quantities.
 - ♦ **Blue box:** This is the “amber box with conditions”. The conditions are designed to reduce distortion. Any support that would normally be in the amber box, is placed in the blue box if the support also requires farmers to limit production.
 - ♦ **Green box:** It is defined as domestic support measures for which exemption from the reduction commitments is claimed shall meet the fundamental requirement that they have no, or at most minimal, trade-distorting effects or effects on production. In order to qualify, green box subsidies must not distort trade, or at most cause minimal distortion

INDIAN DIPLOMATIC OUTREACH TO TALIBAN REGIME

Indian Officials recently had an official meeting with the Taliban Foreign Minister in Kabul.

About:

- This is the first official visit by an Indian delegation after India had closed its mission in Kabul after the Taliban came to power in 2021.
- India has no formal diplomatic ties with the Taliban government as of now.
 - ♦ Although its envoys have previously also met Taliban representatives in Doha.

The Agenda of the Visit:

- According to the official statement, the purpose of the delegation's visit is to oversee the delivery operations of Indian humanitarian assistance to Afghanistan.

INDIAN HUMANITARIAN ASSISTANCE TO AFGHANISTAN

- The Government of India has committed 50,000 MT of wheat to Afghanistan.
 - ♦ Out of the total quantity, 20,000 MTs of wheat have already been dispatched by the Food Corporation of India.
- India has supplied five hundred thousand COVAXIN doses, 13 tons of essential life saving medicines.
- India has also supplied 500 units of winter clothing to the World Health Organisation (WHO) and the Indira Gandhi Hospital, Kabul.
- The team also visited places where Indian programmes and projects were being implemented.
 - ♦ India has invested \$3 billion in Afghanistan – in dams, highways, electricity grids, hospitals, schools, and even the parliament building.

Response of Taliban

- Taliban called the visit a “good start”, and thanked India for its humanitarian and health assistance to Afghanistan.
- The Taliban also requested the Indian delegation to reopen its diplomatic mission in Afghanistan.

India-Taliban relations in the past:

- **During Taliban 1.0**
 - ♦ During the Taliban 1.0 regime (1996-2001), India neither extended its recognition nor had a diplomatic presence in Afghanistan.
 - ♦ In 1996, the Indian embassy was closed as the Taliban approached Kabul.

- India backed the anti-Taliban resistance (Northern Alliance or United Front) with money and weapons.
- Taliban played host to vast anti-India militant outfits in the past
- In the 1999 IC814 hijacking, the then-ruling Taliban acted as a support arm of the hijackers.
- **India in post-2001 Afghanistan:**
 - ♦ 2008 bombing of the Indian Embassy in Kabul was traced to the Haqqani group, a part of the Taliban.
 - ♦ After the Taliban's ouster India supported successive governments in Kabul and extended aid toward the country's socio-economic development.
 - ♦ India provided training to Afghan security forces, police, civilian officials, and teachers.
 - ♦ In addition to an embassy in Kabul, India opened consulates in Herat, Kandahar, Jalalabad, and Mazar-e-Sharif.
- **During Taliban 2.0:**
 - ♦ India had been hesitant in exploring engagement with the Taliban and ended up withdrawing from the country when the Taliban came to power.
 - ♦ India hosted the Regional Security Dialogue at the National Security Advisor level and Delhi declaration was issued.
 - ♦ The Delhi Declaration reaffirmed a shared commitment to ensuring that Afghanistan never becomes a safe haven for global terrorism and stressed the need for an open and truly inclusive government.
 - ♦ Taliban welcomed the Delhi Declaration though they were not invited.
 - ♦ Taliban have repeatedly held that it will welcome the reopening of the Indian Embassy.

Afghanistan's Significance to India:

- **Gateway to Central Asia:** For India, Afghanistan is critical in terms of our outreach to the Central Asian Republics. Afghanistan is considered as India's gateway to Central Asia via Chabahar port of Iran and the Delaram highway Afghanistan.
- **Geopolitical importance:** Afghanistan is of vital importance to India as a counterbalance to Pakistan and China in Asia.
- **Geostrategic importance:** The Pakistan-Afghanistan border remaining active denies Pakistan the opportunity of positioning additional military capabilities along its borders with India.

- **Security:** A peaceful and stable Afghanistan is vital for domestic and regional security for many reasons.
 - ♦ **For example:** Afghanistan falls in the Golden Crescent and is the source of the opium trade to and through India. For India to curb this, a good relationship is necessary with Afghanistan rulers.



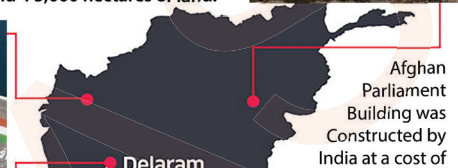
Future Prospects of Relations:

- Taliban 2.0 have made no hostile statements on India or Kashmir, particularly, since taking over in Kabul. However, there have been fears that a Taliban-run Afghanistan could end up as a haven for terrorist organizations targeting Kashmir.
 - ♦ According to the UN Taliban monitoring committee, the Taliban continues to remain close to al-Qaeda and JeM and LeT are operating training camps in Nangarhar and Kumar, close to the Pakistan border.
- Taliban's takeover of Afghanistan can give Pakistan "strategic depth" against India and a recruiting ground for more militants and terrorists.
 - ♦ Pakistan has historically followed a "Strategic Depth Policy" towards Afghanistan, whereby it attempts to control the country as a political pawn and strategic hedge vis-a-vis India.
- However despite all the fears and trepidations history and the great games never really ends in Afghanistan.

- Greater engagement with the Taliban will create new possibilities for India as other regional players such as China, Russia and Iran are looking for ways to step up their engagement.
- It is time to de-hyphenate Pakistan from the Taliban.

INDIAN INVESTMENTS IN AFGHANISTAN

The Indian-built \$290 mn Afghanistan-India Friendship Dam, earlier known as the Salma Dam, in Afghanistan's Herat Province has reduced Kabul's dependence on its neighbours for electricity and is irrigating around 75,000 hectares of land.



Afghan Parliament Building was Constructed by India at a cost of \$90 m



The Delaram-Zaranj Highway was constructed at a cost of \$135 million, financed fully by development grants from India

Conclusion:

- India has built a significant presence as a development partner in Afghanistan, building both goodwill among the Afghan people as well as gaining important grassroots knowledge. Both factors can make India competitive, regardless of who is in power in Kabul.
- We have an opportunity to reset the terms of engagement with the Taliban on our own terms.
- India's response to Afghanistan must be multi-pronged, carefully calibrated, and futuristic. Only then, can we overcome the many challenges which lie on the road ahead.

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The Gist

India is stepping up engagement with Afghanistan's Taliban rulers at a time when other key regional players such as China, Russia, Iran and Pakistan have already bolstered their presence in the Afghan capital. The visit of an Indian delegation to oversee the delivery operations of Indian humanitarian assistants is the first step in this direction.

INDIA'S PATENT REGIME

Recently, the U.S. Trade Representative's (USTR) annual Special 301 report has highlighted IP challenges in India.

About:

- USTR in its yearly Special 301 report highlights the state of intellectual property rights protection in different countries which are U.S. trading partners around the world.
- The USTR report considers India as one of the most challenging major economies with respect to IP protection and enforcement.
- It has retained India on its Priority Watch List; with six other countries like Argentina, Chile, China, Indonesia, Russia and Venezuela.
- **About USTR:** The Office of the USTR is responsible for developing and coordinating U.S. international trade, commodity, and direct investment policy, and overseeing negotiations with other countries.
 - ♦ USTR is part of the Executive Office of the President.
 - ♦ Placement of a trading partner on the Priority Watch List or Watch List indicates that particular problems exist in that

country with respect to protection, enforcement, or market access for U.S. persons relying on IP.

- **Patent:** A patent is an exclusive set of rights granted for an invention, which may be a product or process that provides a new way of doing something or offers a new technical solution to a problem.

Indian Patent Regime:

- **The Indian Patent Act of 1970** governs patents in India. Under this act, patents are granted if the invention fulfills criteria of:
 - ♦ Novelty
 - ♦ Inventiveness in step/s or Non-obviousness
 - ♦ Capability of Industrial application
 - ♦ Not attracting the provisions of sections 3 and 4 of the Patents Act 1970
- As per the recommendations of **Rajagopala Ayyangar commission 1959**, pharmaceutical products were not protected under the Indian Patents Act 1970.

FORMS OF IPR	TYPES OF INNOVATION	CRITERIA	DURATION
PATENTS	Invention (new product or process)	Novelty, Inventiveness, Industrial Applicability	20 years
COPYRIGHT	Expression of Ideas (Book, Story, Novel, Drama, Music, Painting, Drawings, Cinematographic Film etc.)	Originality	Literary works: Life time of the author+60 years. Cinematographic films, photographs: 20 years. Broadcasting: 25 years
TRADEMARKS	Brand Name, Logo, Identification symbols	Distinctive, Visually perceptible	Unlimited (Renewal after 10 years)
INDUSTRIAL DESIGN	External appearance of an article (shapes of: car, Camera, TV, Handcraft works, etc.)	Original/New, Significantly Distinguishable	Initially for 10 years (Renewal Every 5 years)
GEOGRAPHICAL INDICATION	Goods having a reputation of the place of their origin	Possess a given quality, reputation or other characteristics which are essentially attribute to geographical area of origin	Unlimited (Renewal after 10 years)
SEMICONDUCTOR INTEGRATED CIRCUITS LAYOUT DESIGN	Layout design of Integrated circuits	Original, Distinguishable, Distinctive	10 years
PROTECTION OF PLANT VARIETY AND FARMER'S RIGHT	New varieties of plants, Farmers varieties, Extant varieties, Essentially derived varieties	Uniformity, Distinctiveness, Stability, Denomination, Novelty	Trees and vines: 18 years Extant varieties & others: 15 years

- ♦ This was to ensure affordable availability of medicines to the masses and as per the state of India's scientific and technological advance at that time.
- **The Patents (Amendment) Act, 2005:**
 - ♦ It had wide powers for compulsory licensing, acquisition of patents by the Government, and even for cancellation of patents in public interest.
 - ♦ It extended the product patent to all fields of technology along with food, drugs, chemicals and microorganisms.
- **The National Intellectual Property Rights (IPR) Policy 2016:** It was adopted as a vision document for future IPR developments in the country. It was aimed at the creative and innovative IPR regime in India.

India's alignment with international patent regimes:

- After membership to the World Trade Organization (WTO) in 1995, India became a party to the TRIPS Agreement.
- To comply with Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement, the 2005 amendment to patent law re-introduced patent protection of pharmaceuticals.
- India also became a signatory to various IPR related international conventions governing several patent-related matters such as:
 - ♦ **The Berne Convention 1886:** It is a convention for the protection of literary and artistic works i.e. governing copyright.
 - ♦ **The Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purpose of Patent Procedure 1977:** It eliminates the need to deposit microorganisms in each country where patent protection is needed.
 - ♦ **The Paris Convention for the Protection of Industrial Property 1883:** It is applicable to industrial property including patents, trademarks, industrial designs, utility models, service marks, trade names, geographical indications and the repression of unfair competition.
 - ♦ **The Patent Cooperation Treaty (PCT) 1970:** It enables seeking patent protection for an invention simultaneously in each of a large number of countries by filing an "international" patent application.

Issues highlighted by the USTR Report:

- The report highlighted a range of India specific issues in several domains. These are copyright, piracy, trademark counterfeiting and trade secrets related issues.
- It reported patent issues are of particular concern in India. For example, in the pharmaceutical sector the United States monitored the restriction on patent-eligible subject matter in Section 3(d) of the Indian Patents Act.
- It highlighted issues which impact companies across different sectors such as:

- ♦ The threat of patent revocations
- ♦ Lack of presumption of patent validity
- ♦ Narrow patentability criteria
- The report has raised concerns regarding:
 - ♦ What can be patented
 - ♦ Waiting times for obtaining patents
 - ♦ Reporting requirements
 - ♦ Data safety

India's stand on narrow patentability:

- **Section 3(d) of the Indian Patent Act 1970** has been the main issue between India and the U.S.
 - ♦ Section 3 deals with what does not qualify as an invention under the Patent Act.
- **Section 3(d)** excludes the eligibility for protection under patent law for mere discovery/use of:
 - ♦ A new form of a known substance without any resultant enhancement of the known efficacy of that substance or
 - ♦ Any new property or new use for a known substance or
 - ♦ A known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant.
- As per the **Parliamentary Standing Committee, Section 3(d):**
 - ♦ Safeguards frivolous inventions which exploit the flexibility provided in the TRIPS agreement.
 - ♦ Enables generic competition by patenting only novel and genuine inventions.
 - ♦ Prevents evergreening of patents.

EVERGREENING OF PATENTS

- Patents offer the developer a monopoly over a chemical molecule for 20 years.
- So, pharmaceutical companies reapply for a patent with minute changes and extend the life of near expiry patents.
- Such changes may be an element of the formula, new forms of release, new dosages, new combinations or variations, or new forms of the molecule etc.

- **The Supreme Court (SC) judgment in Novartis vs. The Union of India:**
 - ♦ In this case, SC upheld the validity of section 3(d).
 - ♦ It held Gleevec simply being a beta crystalline form of a known drug "imatinib mesylate", couldn't be patented as w.r.t. efficacy did not differ significantly in properties.

Doha Declaration on TRIPS:

- WTO member states adopted the Doha Declaration on the TRIPS Agreement and Public Health in 2021.
- The declaration said that TRIPS should be interpreted and implemented to support WTO members' right to protect

public health in general and to promote access to medicines for all in particular.

- **The flexibilities under TRIPS are:**
 - ♦ Right to grant compulsory licenses (CL) and grounds for it.
 - ♦ The right to determine a national emergency or other circumstances of extreme urgency. E.g. public health crises.
 - ♦ The right to establish its own regime for the exhaustion of intellectual property rights.
- **Compulsory License (CL):** A state can invoke CL in public interest. It can allow companies other than the patent owner to produce a patented product without consent.
- **United Nations Secretary-General's High-Level Panel on Access to Medicines Report, 2016:** Referred to the Novartis judgment, which validated India's stand on Section 3(d).
- It recommends WTO member countries to use flexibility in the TRIPS agreement.
 - ♦ E.g. Temporary waiver of patent rights under TRIPS Agreement to promote manufacturing of vaccines, therapeutics, and equipment to deal with the COVID-19 pandemic.
- It promotes the growth of generic drug makers and enables the public's access to affordable medicines.
- It asks to apply rigorous definitions of invention and patentability to prevent 'evergreening', thereby awarding patents only for genuine innovation.
 - ♦ It suggested mutual resolution of differences between India and the U.S. w.r.t. disqualification of incremental inventions through bilateral relationships.
- **The Parliamentary Standing Committee** in India observed that Section 3(d):
 - ♦ Acted as the catalyst for genuine innovations.
 - ♦ Prevented frivolous successive patents.

Positive steps taken by India:

- India's accession to the World Intellectual Property Organization (WIPO).
- **Revised Manual of Patent Office Practice and Procedure:** India had issued it in 2019:
 - ♦ It reduces redundancy of information filing by patent applicants in India.
 - ♦ It requires patent examiners to check the WIPO Centralised Access to Search and Examination system (CASE) and Digital Access Service (DAS).
 - ♦ It helps in finding any information filed by a patent applicant in a different jurisdiction.
- **Patents (Amendment) Rules, 2020** made the patent filing procedure easier with the amendments such as:
 - ♦ Permission to fill a single Form-27 for multiple related patents.

- Filing joint forms in case of more patentees.
- Permitting authorized agents to submit forms.
 - ♦ **Form 27:** Patentee to furnish information about commercial scale working of a patented invention in India.
- **Intellectual property review in 2021:** Parliamentary Standing Committee examined the IPR regime in India. It asked for expert inputs from various stakeholders.
- **Court system developments:** After abolition of the Intellectual Property Appellate Board (IPAB), the Delhi High Court created an IP division in July 2021 and released draft rules for feedback in December 2021.
- **The Cell for Intellectual Property Rights Promotion and Management (CIPAM)** has been working towards promotion of IP awareness across India.
- **India-US Collaboration:**
 - ♦ Both the countries need to work further on a Memorandum of Understanding (MOU) signed in December 2020, relating to IP technical cooperation mechanisms.
 - ♦ In this direction, the United States Patent and Trademark Office (USPTO) and Department for the Promotion of Industry and Internal Trade (DPIIT) are working on a biennial work plan.

Way Forward:

- In 2021, USTR in its Special 301 report had recognised India's efforts to address the U.S. concerns about IPR.
- Both countries need to have regular engagements on IP related matters through the Trade Policy Forum's Intellectual Property Working Group.
- India as a sovereign country needs to balance the international patent obligations and protection and promotion of socio-economic welfare and public health.

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The Gist

- The U.S. Trade Representative's (USTR) annual Special 301 report has highlighted IP challenges in India.
- These include copyright, piracy, trademark counterfeiting and secrets related issues.
- Section 3(d) of the Patents Act 1970 is the bone of contention between the U.S. and India in terms of parameters like evergreening, compulsory licensing and its utility as per the flexibilities under the TRIPS Agreement and Doha Declaration.
- India has been reviewing its patent regime and has become signatory to several international patent regimes. It also amended The Patent Act in 2005.

INDIA-BANGLADESH BILATERAL RELATIONS

Recently, the railway ministers of India and Bangladesh started a maiden commercial run of a new Jalpaiguri-Dhaka Mitali express.

About:

- This was the third train between India and Bangladesh as international surface transport links returned to normal after the COVID-19 pandemic-induced disruption.

Rail Connectivity between India-Bangladesh:

• Passenger Trains:

- ♦ **Maitree Express** was the first train to roll between Kolkata and Dhaka cantonment. It was started in 2008 and was largely successful as it ran at 90% occupancy.
- ♦ **Bandhan Express** was rolled out in 2017 by the Prime Ministers of both countries. It runs on an old rail link between Kolkata and the industrial hub of Khulna, touted as the third- largest city in Bangladesh.
 - It uses the Petrapole-Benapole border crossing. Until the 1965 India-Pakistan war, the Barisal express used to run on this route.
- ♦ **The Mitali Express**, the third of the trains, was announced by the Prime Minister of India on a visit to Bangladesh in March 2021. It will connect North Bengal to the Bangladesh capital i.e. Dhaka.

• Freight Trains:

- ♦ Governments of both countries have also been working towards strengthening freight train links.
- ♦ Both sides started the regular movement of freight trains in August 2021. It links Haldibari in Cooch Behar district of West Bengal and Chilahati in Bangladesh.
- ♦ The Haldibari-Chilahati link was stopped after the India-Pakistan war in 1965.

• Railway Infrastructure:

- ♦ India and Bangladesh are harnessing the opportunity to deepen their ties using the cross- border movement of goods and passengers, using a single railway network established by the British.
- ♦ As a part of the efforts to boost railway connectivity, five border crossings have been restarted till now between India and Bangladesh respectively. These are:
 - Petrapole-Benapole
 - Gede-Darshana
 - Singhabad-Rohanpur
 - Radhikapur-Birol
 - Haldibari-Chilahati
- ♦ Both sides want to establish cheaper and faster rail freight links and reduce the dependence on the sea routes. For example:

- Railway PSU CONCOR transports fast-moving consumer goods (FMCGs) for private clients.
- Also, there has been regular transport of cargo such as stone chips, ballasts, and rice from India to Bangladesh.



Other areas of cooperation between India and Bangladesh:

- **Bangladesh, Bhutan, India, and Nepal Motor Vehicles Agreement (BBIN MVA):** The countries are working on specific steps and timelines to finalize the Passenger and Cargo protocols for the implementation of BBIN MVA.
 - ♦ An enabling MOU is also being framed for the implementation of the agreement. It will ensure seamless movement between the countries, boost trade and enhance people-to-people contact.
- **Trans-shipment facility:** Bangladesh has granted India a trans-shipment facility to transport goods to the Northeastern states through its territory. Under it, the use of Chattogram and Mongla ports for India has been agreed.
- **Diplomatic Relations:** India and Bangladesh completed 50 years of establishment of diplomatic relations in 2021. The Prime Minister of India also visited Bangladesh to join the celebrations of the Golden Jubilee of the Independence of Bangladesh.
 - ♦ It coincided with the birth centenary of its Father of the Nation, Bangabandhu Sheikh Mujibur Rahman.
 - ♦ During the visit, it was decided to celebrate December 6th as a Maitri Diwas (Friendship Day)
 - ♦ Prime Ministers of both countries also inaugurated Bapu-

Bangabandhu Digital Museum as a memorial for the Indian martyrs who died during the 1971 Bangladesh war.

- **Covid-19 Aid:** India sent over 2 million doses of AstraZeneca-Oxford University vaccine Covidshield to Bangladesh last year. It helped Bangladesh in launching its nationwide vaccination drive.
 - ♦ Also, India sent over 4000 MT of liquid medical oxygen via 'oxygen express' trains in 2021 and, 2 medical oxygen plants to Bangladesh.
 - ♦ India also received medicines and PPE kits from Bangladesh, during the second wave of Covid-19 pandemic.
- **The Vision of mutual and world progress:** Both countries envision world progress through their own development. Also, both the neighbors want to see stability, peace, and love instead of instability, unrest, and terror in the world.
- **Development Partnership:** Bangladesh is the biggest development partner of India today. India has extended 3 Lines of Credits (LOC) to Bangladesh for development of infrastructure in various sectors including roads, railways, shipping and ports.
 - ♦ India has also been providing grant assistance to Bangladesh for various infrastructure projects including construction of Akhaura-Agartala rail link, dredging of inland waterways in Bangladesh and construction of India-Bangladesh Friendship Pipeline.
- **Economic Cooperation:** India had given Duty-Free and Quota Free Access to Bangladeshi exports under the South Asian Free Trade Area (SAFTA) in 2011.
 - ♦ Bangladesh is presently the largest recipient of the line of credit (LOC) funds from India.
 - ♦ As a result, Bangladesh is India's biggest trading partner in the South Asian region and India is the second biggest trade partner of Bangladesh.
- **Military Cooperation:** Both the countries for the first time exchanged the military marching contingents in each other's national day parades i.e. in January in Delhi and in December in Dhaka.
 - ♦ The two countries also participated in a 10 day multilateral UN-mandated counter-terrorism exercise held in Bangladesh.
 - ♦ Bangladesh has been helping India in sorting out the security issues in the Northeast.
- **Border dispute settlement:** Implementation of the Land Boundary Agreement (LBA), exchange of the enclaves and signing of their strip maps was one of the most notable achievements of the India-Bangladesh bilateral relationship.
 - ♦ Also, the peaceful settlement of the maritime boundary arbitration resulted in the economic development of the Bay of Bengal.

- **Power Sector:** Bangladesh imports 1,160 Megawatts of power from India to meet its domestic demand. This includes export of the internet bandwidth to the state.
 - ♦ Bangladesh is supplying drinking water from the Feni river to Tripura.
 - ♦ Bangladesh has also requested access to Nepal and Bhutan power through India.
- **International cooperation:** India and Bangladesh share a common agenda on international issues like reforms in the United Nations Security Council (UNSC), fulfillment of Sustainable Development Goals (SDGs), World Health Organisation (WHO) reforms and Climate Change mitigation efforts by developed countries etc.
- **Regional Cooperation:** Bangladesh sought India's support in the domains of maritime safety and security when it assumed the leadership of Indian Ocean Rim Association (IORA) in 2021.
 - ♦ Also, both the countries share membership and advocate the importance of regional organizations like South Asian Association for Regional Cooperation (SAARC) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) for regional growth, trade and investment.

Areas of Dispute:

- **Repatriation of Rohingya refugees to Myanmar:** Recently, 80 Rohingya refugees who left Bangladesh were found stranded in the Andaman Sea by the Indian Coast Guard.
 - ♦ India provided them with medical treatment and food, while Bangladesh has refused to take them back. India also has not planned to give refuge to these Rohingyas, leaving their future unsure.
 - ♦ Both India and Bangladesh are not signatories to the 1951 Refugee Convention, which spells out refugee rights and the responsibility of the camp country to protect them.
- **Cross-border trafficking:** Border Security Force (BSF) at the border frequently witness cross border trafficking of humans, cattle and narcotics. This is done with the help of touts from either side with the help of local trafficking syndicates.
 - ♦ Covid-19 pandemic saw a surge in human trafficking due to loss of jobs.
 - ♦ Illegal trafficking creates a security crisis in the border areas of West Bengal w.r.t refugee problem, and communal clashes.
- **Teesta water sharing:** Teesta river is very important for northern Bangladesh's irrigation needs. However, the water sharing of Teesta river still remains a long pending issue, as West Bengal is also an important stakeholder in the resolution of it.
- **CAA and NRC:** The recent Indian policies including the enactment of the Citizenship Amendment Act and plans to implement the NRC have triggered fear over the exodus of people from Assam to Bangladesh.

INDIA-VIETNAM RELATIONS

India-Vietnam signed an MoU on mutual logistics support and a Vision Statement during the Indian Defence Minister's visit to Vietnam.

About:

- India-Vietnam MoU on mutual logistics support is Vietnam's first such major agreement with any country.
- A Joint Vision Statement on India-Vietnam Defence Partnership towards 2030', was also signed to enhance the scope and scale of defence cooperation.
- India and Vietnam agreed to the early finalisation of the USD 500 million defence line of credit to Vietnam by India.

LOGISTICS AGREEMENTS

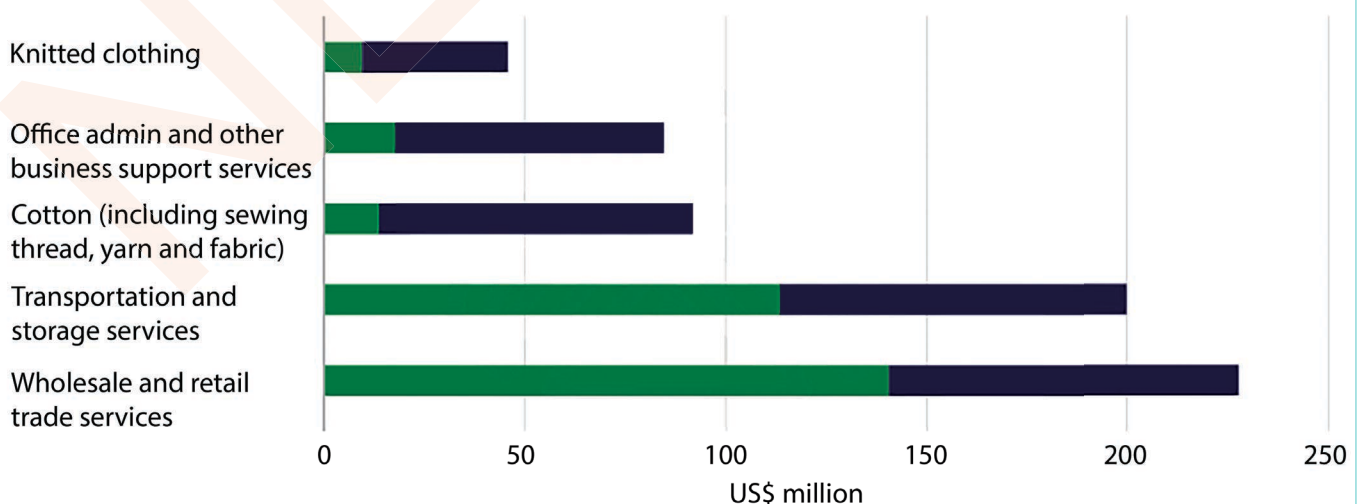
- A logistics agreement is a reciprocal arrangement by which the two nations can use the military logistics facilities while on visits to each other's ports, bases, and military installations.
- India has such military logistics agreements with Quad countries (Australia, Japan and the United States) as well as with France, Singapore, and South Korea.
- India is currently in the process of finalising such an agreement with the U.K.
- There is also an agreement in the pipeline with Russia called the Reciprocal Exchange of Logistics (RELOS) agreement.

India-Vietnam Relations:

- The relations between the two countries were elevated to the level of "Strategic Partnership" in 2007 and further upgraded to "Comprehensive Strategic Partnership" in 2016.
- Vietnam serves as an important partner in India's "Act East" Policy and Indo-Pacific vision.
- **Bilateral Trade-**
 - ♦ From a meagre US\$ 200 million in the year 2000, bilateral trade between India and Vietnam has seen steady growth and reached US\$ 11.12 billion, during Financial Year (FY) April 2020 – March 2021.
 - ♦ Indian exports to Vietnam amount to US\$ 4.99 billion and Indian imports from Vietnam are at US\$ 6.12 billion.
- **India's Investments in Vietnam-**
 - ♦ India's investments in Vietnam are estimated at around US\$ 1.9 billion including investments routed through third countries in sectors like energy, mineral exploration, agro-processing, sugar, tea, coffee manufacturing, agro-chemicals, IT and auto components.
- **Capacity Building, Training, Scholarships-**
 - ♦ India agreed to continue supporting Vietnam with development and capacity building assistance through a number of programs including quick impact projects

TRADE OPPORTUNITIES: VIETNAM TO INDIA

■ Actual exports ■ Opportunities to increase exports



such as the Mekong-Ganga Project, Indian Technical and Economic Cooperation (ITEC) and e-ITEC initiatives, PhD fellowships, and digital connectivity.

THE MEKONG-GANGA COOPERATION (MGC)

- **Initiative of** – India, Cambodia, Lao PDR, Myanmar, Thailand and Vietnam
- **Areas of Cooperation:** Tourism, culture, education, transport and communications.
- **Launched:** In 2000 at Vientiane, Lao PDR.

• Defence partnership-

- ♦ India has strong navy-to-navy cooperation with Vietnam and India is one of few countries with which Vietnam conducts naval exercises.
- ♦ Hanoi allows India's navy to dock in ports, going beyond Halong Bay.
- ♦ Under a US \$100-million line of credit provided by the Indian government, a High-Speed Guard Boat Manufacturing Project has been launched for the Vietnam Border Guard Command.
- ♦ India handed over the first boat during the 2020 virtual summit between Prime Ministers Modi and Phuc.
- ♦ Two more Indian- manufactured boats have been launched and seven more will be built in Vietnam.
- ♦ The two countries have boosted their maritime security cooperation in the last few years to protect common interests.
- ♦ In August 2021 Indian and Vietnamese navies took part in a bilateral exercise in the south China Sea.

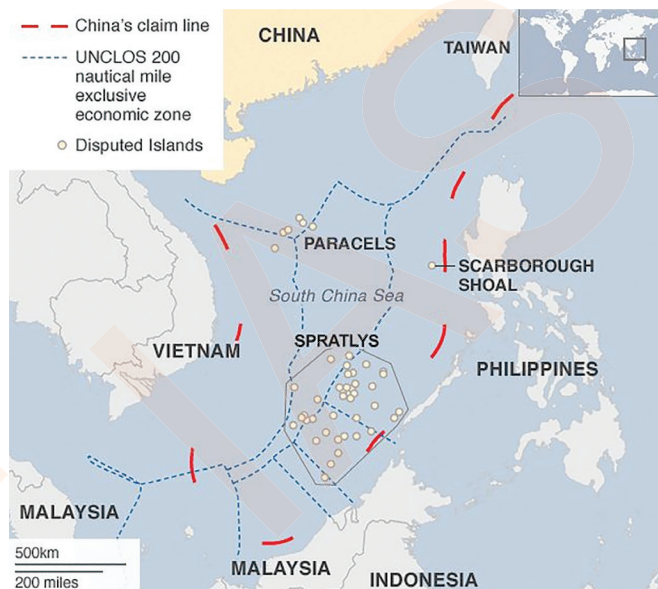
Significance of India-Vietnam Relations:

- Vietnam is a key partner in India's Act East Policy, as well as in its wider Indo-Pacific vision.

ACT EAST POLICY

India's Act East Policy focuses on the extended neighbourhood in the Asia-Pacific region. The policy was originally conceived as an economic initiative. It has now gained political, strategic and cultural dimensions including the establishment of institutional mechanisms for dialogue and cooperation.

- The Indo-Vietnam Cooperation assumes significance given their shared concern about China which continues to claim all of the South China Sea, disregarding the claims and sovereign rights of other claimant countries including Vietnam, the Philippines, and Brunei.



- Moreover, India has exploration projects in the Vietnamese waters in the South China Sea. India has ongoing oil exploration projects with PetroVietnam although China continues to object to India's oil exploration operations in areas offered by Vietnam.
- The two countries have unspecified cooperation in relation to the information gathering on the movement of Chinese naval vessels.

“ The Gist

- Given the China threat to both Vietnam and India, the Indo-Vietnam relationship is likely to gain greater traction in terms of diplomatic and military engagements.
- Recent Sign of MoU on Logistics agreements and Joint Vision Statement on India-Vietnam Defence Partnership is evidence of this and further strengthens their partnership.

UN REPORT ON THE TALIBAN REGIME

The Analytical Support and Sanctions Monitoring Team of the United Nations Security Council (UNSC) recently released a report on the new Taliban regime in Afghanistan.

New Taliban Regime:

- The report says that foreign terrorist organisations still enjoy safe haven under the new Taliban regime.
- It states that the terrorist groups are consolidating and thus unlikely to launch major attacks outside Afghanistan before 2023.
 - ♦ This may be due to financial constraints, and possibly under political pressure not to embarrass the Taliban internationally at this juncture.

Internal Ideological Tensions:

- The Taliban is internally divided between the moderate and hardline blocs.
- The moderates want working relationships with foreign partners and integration with the international system.
- However, the hardliners (senior Taliban leaders loyal to Hibatullah Akhundzada) have a little interest in international relations and follow a more ideological stance.
- The Haqqani Network is independent of both the blocs and prefers a more pragmatic and less ideological approach to secure Taliban interests.
- As per the report, various Taliban factions are trying to get advantage under Hibatullah's command, while the Haqqani Network is capturing most of the influential posts in the Taliban administration.
- **Ethnic Dynamics in Administration:** The report believes the Kandahari (Durrani) Taliban to be in the ascendancy among the Taliban leadership, with Pashtuns getting precedence over non-Pashtuns (like Tajik, Turkmen and Uzbek communities).

Other Foreign Terrorist Groups:

- **Tehreek-e-Taliban Pakistan (TTP):** With estimated at 3,000-4,000 in number, Tehreek-e-Taliban Pakistan (TTP) constitutes the largest component of foreign terrorist fighters in Afghanistan.
 - ♦ It is mostly located along the east and south east Afghanistan- Pakistan border areas. TPP has been the main beneficiary of the Taliban takeover in Afghanistan.
 - ♦ Thus, Pakistan might face adverse effects of extreme radicalisation from TTP causing turmoil in Baloch and Pashtun areas.
- **Islamic State in Iraq and the Levant Khorasan (ISILK):** The report notes that the ISIL K has been elevated to be the most prominent Da -esh affiliate in the region after the August 26 Kabul airport attack.

- It has grown in strength through prison releases and new recruitments.
- **Al-Qaeda:** It enjoys a close relationship with the Taliban and has celebrated the Taliban's success with a renewed pledge of allegiance to Hibatullah.

ANALYTICAL SUPPORT AND SANCTIONS MONITORING TEAM

- It assists the UNSC sanctions committee.
- Its reports are circulated among committee members to inform the formulation of UN strategy in Afghanistan.
- Overall, this is the 13th report and it is the first since the Taliban returned to power in August 2021.
- **Membership:** India is currently the chair of the sanctions committee, which comprises all the 15 UNSC members.

Data for the report:

- The UN team could not visit Afghanistan for evidence gathering. This is the first of its reports not informed by official Afghan briefings.
- Instead, the UN team relied on consultations with UN member states, international and regional organizations, private sector financial institutions, and the work of bodies such as the United Nations Assistance Mission in Afghanistan.

Terrorist organisations posing a threat to India:

- Two India focussed terrorist groups namely, **Jaish-i-Mohammed (JiM)** and **Lashkar e-Taiba (LeT)** have training camps in Afghanistan.
 - ♦ JiM has set up 8 training camps in Nangarhar, 3 of which are directly under Taliban control.
 - ♦ The LeT maintains 3 camps in Kunar and Nangarhar.
 - ♦ Both JiM and LeT enjoy close links with the Taliban leadership. LeT also has a history of providing finance and training expertise to Taliban operations.
- **Al-Qaeda in the Indian Subcontinent (AQIS)** has 180-400 fighters in Afghanistan. These fighters are nationals from Bangladesh, India, Myanmar and Pakistan.
 - ♦ The AQIS has adopted a "less aggressive posture" due to financial constraints.
 - ♦ The report noted that the AQIS magazine changed name from 'Nawa i Afghan Jihad' to 'Nawa e Gazwah e Hind' indicating a refocus of AQIS from Afghanistan to Kashmir.

- Thus, India might witness rising instances of cross border infiltration across the LoC and disturb law and order situation in the Union Territories of Jammu & Kashmir and Ladakh.

Steps Taken by India to Fight Terrorism:

- **Comprehensive Convention on International Terrorism (CCIT):** At the 73rd session of the UN General Assembly (UNGA) in 2018, India reiterated its demand for a CCIT. It includes having a universal definition of terrorism, banning all terrorist groups and prosecution of all terrorists under special laws etc.
- **Unlawful Activities (Prevention) Act, 1967:** To enable India in more effective prevention of certain unlawful activities of individuals and associations and to deal with terrorist activities, and other related matters.
- **National Investigation Agency:** It is India's primary counter-terrorist task force. It is empowered to deal with terror related crimes across states without special permission from the states under written proclamation from the Ministry of Home Affairs.
- India has signed **Bilateral treaties on Mutual Legal Assistance (MLATs)** in Criminal matters to facilitate the investigation, collection of evidence, transfer of witnesses, location and action against proceeds of crime, etc. with other countries.
- **Comprehensive Integrated Border Management System (CIBMS):** It is a robust and integrated system which improves the capability of Border Security Force (BSF) in detecting and controlling the cross border crimes like illegal infiltration, smuggling of contraband goods, human trafficking and cross border terrorism, etc. Thus, CIBMS integrates human resources, weapons and high-tech surveillance equipment.
- **Policy of "Zero tolerance" on terrorism:** As per this policy, India focuses on developing a common strategy to curb terrorism and believes in collective global efforts to tackle the menace.
- **20th Anniversary of the UNSC Resolution 1373:** At this event in 2021, India presented an eight point action plan to deal with the menace of terrorism. These 8 points were:
 - Political will to combat terrorism
 - No double standards in fight against terrorism
 - Reforms in Sanctions and Counter-terrorism committees
 - Discourage exclusivist thinking dividing the world and harming social fabric
 - Enlist and delist individuals and entities under the UN sanctions regimes objectively
 - Linkages between terrorism and transnational organized crime must be fully recognized and addressed
 - Combat terrorist financing
 - Adequate funding to UN Counter-terrorism bodies



Way Forward:

- India needs to strengthen its policy measures, institutional machinery and ensure coordination amongst its intelligence agencies for effective anti-terrorism operations. Also, timely and appropriate action should be taken based on intelligence inputs. For example, acting on the intelligence inputs would have prevented 26/11 terror attack in Mumbai.
- To prevent alienation and radicalisation of youth, cases of human rights violations must be addressed in a timely and just manner. Following the UN Universal Declaration on Human Rights (UDHR) and the UN Charter on respecting sovereignty and territorial integrity of each country is essential across the globe.
- India needs to ramp up its ability to use regional forums like Shanghai Cooperation Organisation's RATS (Regional Anti-Terrorist Structure) and international organisations like United Nations Security Council (UNSC) in pursuit of CCIT to effectively combat the scourge of terrorism.

“

The Gist

The Analytical Support and Sanctions Monitoring Team of the UNSC recently released a report on the new Taliban regime in Afghanistan. It notes that:

- Foreign terrorist organisations like TTP, ISILK, Al-Qaeda etc. still enjoy safe haven under the new Taliban regime.
- Terrorist groups poses a significant threats to India like JiM and LeT have training camps in Afghanistan.
- Presence of terror groups on Afghan soil, remain a matter of grave concern for neighbouring countries and the wider international community.

GLOBSEC 2022 FORUM

Recently, the Minister of External Affairs participated in Globsec Forum 2022.

About:

- The Minister was on a visit to the nation of Slovakia and Czech Republic.
- Speaking at the Globsec 2022 forum in Slovakia, the Foreign Minister said that Europe has to grow out of the mindset that Europe's problems are the world's problems but the world's problems are not Europe's problems."
 - ♦ He also reiterated India's stand on various issues including its relations with China, Russia and Ukraine.
- The Minister also defended India's position on Russia's aggression against Ukraine, saying that "caricature version of one situation" should not be used as a yardstick to pass sweeping judgments.

Key Highlights of the discussion:

- The visit of the External Affairs Minister to Slovakia was the first ever visit to Globsec since its establishment in 1993.
- India and Slovakia share close and friendly ties based on common values of democracy, rule of law, freedom and equality.
- During the delegation level talks, the leaders of both nations discussed the entire gamut of bilateral relations, including political, economic, defence & security, S&T, cultural and people to people ties.
- Both sides appreciated that bilateral trade had crossed over USD 2 billion. Discussions were also held on India-EU relations, including the upcoming Czech Presidency of the EU.
- Both sides agreed to work towards an early conclusion of the India-EU FTA. Both sides exchanged views on the Indo-Pacific and the Ukraine conflict. They also discussed cooperation at multilateral fora and agreed to work closely in this sphere.

India's views at the Forum:

- India's position on Ukraine has been very clear, India had "unequivocally condemned" the killings and also supported calls for an "independent probe" into the incident following global outrage.
- On India's stand on Russia Ukraine conflict -Rejecting suggestions that India is a "fence-sitter" on global issues, foreign minister of India said that it is not necessarily believed that India has to choose between the two axes represented by the US-Europe and China-Russia.

- Underlining that the "world cannot be that Eurocentric that it used to be in the past, India said If one were to take Europe collectively, which has been singularly silent on many things which were happening, for example in Asia, you could ask why would anybody in Asia trust Europe on anything at all."
- In response to questions from European ministers and leaders at the Raisina dialogue on the crisis arising out of the Russia-Ukraine conflict, foreign minister had pointed to the challenges in Asia and India's neighbourhood — in Afghanistan and from China — and said it was a wake-up call for Europe to look at these instances where the problems are happening.
- In Washington DC earlier in April, on the issue of oil purchases, India had said India's total purchases for the month would be "less than what Europe does in an afternoon".
- On India acting as a possible conduit for sale of Russian oil to other countries, India said, "There's an enormous shortage of oil, there's a physical shortage of oil, getting access to oil is difficult.
- A country like India would be crazy to get oil from somebody and sell it to somebody else. This is nonsense." He also rejected reports that India was allowing "trans-shipment of oil".

About GLOBSEC:

- The GLOBSEC Policy Institute is a policy-oriented think-tank analysing foreign policy and the international environment. It builds upon the experiences of the Central European Policy Institute that existed until 2015.
- The ambition of the institute is to help people make sense of the world and identify how the world might make more sense to people – through better policies.
- The Institute wants to make an impact so that the values of the GLOBSEC organisation – liberal and democratic order in the transatlantic world – are deeply embedded in the agenda of governments.

Way Forward:

- Since India is emerging as an economic power its stand is also getting more assertive. The world order is changing, poles are shuffling and shifting, new partnerships are coming up and old ones are getting matured.

INDIA-SLOVAKIA RELATIONS

India-Slovakia relations are friendly and free from any bilateral issues. The two countries have, generally, been supportive of each other's candidatures in international organizations. Notable instances in recent years include.

- Slovakia's support to the Indian candidature for the Council of International Telecommunications Union (ITU) for the term 2019-20, Wassenaar, Australia Group as its 42nd Member.
- **Trade relations:** India – Slovakia Trade Basket According to Slovak Statistical Office data, major items of India's export to Slovakia during 2017-2018 include footwear, part of footwear, t-shirts, tires, ladies garments, babies garments, parts of motor vehicles. Major items of import from Slovakia include antibiotics, electric motors, transmission shafts, pumps, magnesite, bearings, machinery for working rubber or plastics and seats.
- **Cultural Relations:** The NRI/OCI population in Slovakia is relatively very small. Small businesses, such as ethnic groceries, garments and textiles, handicrafts, and restaurants.
- There are few technically qualified IT and other professionals also who live here.

India Czechoslovakia relations:

- **Historical relations:** India's relations with former Czechoslovakia and with present Czech Republic (CR), have always been warm, friendly and have a long history.
- **During the Czech National Revival-** a cultural movement which took place during the 18th and 19th centuries with the purpose of reviving the Czech language, culture and national identity, prominent Czech scholars got inspired by ancient Indian culture.
- **Economic and Commercial Relations:** The bilateral economic relations gained momentum after the Czech Republic gained entry into the European Union in 2004. New mechanisms and diversified interaction thereafter resulted in revival of bilateral trade.
- **Multilateral Cooperation:** Czech Republic strongly supported India's full membership of the Nuclear Suppliers Group (NSG) through its constructive role in NSG and in EU deliberations. During the visit of the President of India both countries agreed to commit towards strengthening global non-proliferation efforts including peaceful use of nuclear energy.
- Czech Republic supported India in recently held elections for non-permanent membership of UNSC for 2021-22 and also supports comprehensive reform of UN and India's credentials for permanent membership of UNSC.

GLOBSEC 2022

BRATISLAVA FORUM



"Europe has to grow out of mindset that its problems are world's problems, but world's problems aren't Europe's problems. Today linkages being made between China and India and what's happening in Ukraine. China and India happened way before Ukraine".

S Jaishankar
Minister of External Affairs, India



DRAFT AMENDMENTS TO IT RULES, 2021

The Ministry of Electronics and Information Technology (MeitY) has come up with a draft of amendments to the Information Technology Rules, 2021.

About:

- One of the key proposals is that the government would establish one or more Grievance Appellate Committees.
 - ♦ It would be made up of a chairperson and other members appointed by the Government.
 - ♦ These appeal committees will be empowered to review and possibly reverse content moderation decisions taken by social media companies.
- The concerned intermediary (e.g. YouTube) would have to comply with every order passed by the Grievance Appellate Committee.
- Under this amendment, a user would be able to appeal a grievance officer's order in front of the committee within 30 days of receiving it from the former.
- The Ministry stated that the proposed amendments will ensure that the Constitutional rights of Indian citizens are not contravened by any big tech platform by ensuring new accountability standards.

IMPORTANT FEATURES OF INFORMATION TECHNOLOGY ACT 2000

- It outlines the procedure to deal with cyber-crimes.
- It defines in a new section that a cyber cafe is any facility from which the access to the internet is offered by any person in the ordinary course of business to the members of the public.
- All electronic contracts made through secure electronic channels are legally valid.
- It provides legal sanction for digital signatures.
- It provides for the constitution of the Cyber Regulations Advisory Committee.
 - ♦ It will consist of the Chairperson and a number of other official and non-official members appointed by the Union Government having special knowledge of the subject-matter as required.
- It provides provision for establishing a Cyber Regulatory Appellate Tribunal
- **This tribunal will**
 - ♦ Handle all appeals made against the order of the Controller or Adjudicating Officer.
 - ♦ An appeal against the order of the Cyber Appellate Tribunal lies possible only in the High Court.

- MeitY has also brought in a new clause which would require intermediaries to respect 'rights guaranteed to users under the Constitution of India'.
- Under the new rules the intermediaries will be required to address grievances regarding content removal from platforms within 72 hours. For other grievances, the existing 15 day timeframe will continue.
- **Need for amendment:** There have been many instances that grievance officers of all significant social media intermediaries (SSMIs) either do not address the grievances satisfactorily or fairly.
 - ♦ The IT rules 2021 did not have a provision for such a Grievance Appellate Committee.

About IT rules 2021:

- In 2021, The Ministry of Electronics and Information Technology (MeitY) brought new Information Technology (Intermediary Guidelines and Digital Media Ethics) Rules, popularly known as IT Rules, 2021.
 - ♦ These IT rules were formulated by MeitY under the Information Technology Act 2000.
- These IT rules provided for content regulation by online publishers of news and current affairs content, and curated audio-visual content.
- **Aim:** To make social media and internet companies, having more than five million users more accountable for the content on their platforms.
- **Mandate:** Social media intermediaries publish rules to curb posting and sharing of content which is inflammatory, objectionable, hateful, racially and ethnically objectionable etc.
- All SSMIs are mandated as part of their due diligence to appoint India-based resident grievance officers.
 - ♦ SSMIs include tech giants like Facebook, Twitter, Telegram, YouTube etc.
 - ♦ SSMIs are platforms with over 5 million subscribers.
 - ♦ These officers enjoy legal immunity from third-party content on their platform.
- A three-tier system grievance redressal mechanism for handling grievances pertaining to streaming services and online news business has been introduced.
 - ♦ At the first level, grievances are handled within the organisation,
 - ♦ At the second, a self-regulatory body, and

- At the third, a government-run committee which can override any decision taken by the other two bodies.
- SSMLs were also told to appoint a nodal officer in India who is available round-the-clock to help law enforcement agencies.
- But if any user was not satisfied with any social media platform's grievance redressal system, then the complainant had only one option i.e. to seek justice in court.
- SSMLs need to publish a monthly compliance report mentioning the details of complaints received and action taken on the complaints.
- SSMLs shall have a physical contact address in India published on its website or mobile app or both.
- A mechanism for User Verification is to be provided to the users who wish to verify their accounts voluntarily.
- SSMLs should ensure Online Safety and Dignity of Users especially women users by removing or disabling access

within 24 hours of receipt of complaints of contents that show such individuals in full or partial nudity or is in the nature of impersonation including morphed images etc.

Issues with draft amendments to IT Rules, 2021:

- **Pros:** In case a user is not satisfied with the content moderation decision taken by a company's grievance officer, they can appeal that decision before the proposed government-appointed appeals committee.
- **Pros:** The proposed amendments will ensure that "Constitutional rights of Indian citizens are not contravened by any big tech platform".
- **Cons:** Through the creation of such appeal committees, the government will be able to veto content-moderation decisions taken by SSMLs.
- **Cons:** It will lead to enhanced government censorship.

IT RULES 2021

SOCIAL MEDIA

- Identify 'first originator' of content that authorities consider anti-national.
- Appoint grievance officer, resolve complaints in 15 days.
- File monthly compliance report on complaints received, action taken.

DIGITAL NEWS

- Follow Press Council of India, Cable TV Networks (Regulation) Act norms.
- Self-regulatory bodies to oversee adherence to Code of Ethics.
- I&B Ministry to form panel, oversight mechanism.

OTT PLATFORM

- Self-classify content into five age-based categories, U (Universal), U/A 7+ (years), U/A 13+, U/A 16+ and A.
- Parental locks for any content classified as U/A 13+ or above.
- Age verification mechanism for content classified as 'A' (Adult).

INDIA'S ETHANOL BLENDING POLICY

The Union Government has approved a new biofuel policy.

About

- The Union Cabinet has approved amendments to the National Policy on Biofuels, 2018.
- India has earlier announced its intent to achieve 10% blending by the end of 2022 and 20% blending by 2030.
 - ♦ The amended Policy has now set the new E-20 target for 2025-26 instead of 2030.
 - ♦ This policy is expected to take effect from April 1, 2023.
- The National Biofuel Coordination Committee (NBCC) headed by the Union Minister is the agency to coordinate this blending programme.

Amendments to the National Policy on Biofuels, 2018

- Government will allow more feedstocks for the production of biofuels. This will promote the Atmanirbhar Bharat and give an impetus to the vision of 'energy independent India' by 2047.
- The ethanol blending target of 20% in petrol advanced to 2025-26 from 2030.
- Promotion to the production of biofuels under the Make in India program, by units located in SEZ or Export Oriented Units.
- Permission will be granted for the export of biofuels in specific cases.

Ethanol

- Ethanol is an agro-based product, mainly produced from a by-product of the sugar industry, namely molasses. A ton of sugarcane can produce 100 kg of sugar and 70 litres of ethanol.
- Since ethanol is produced from plants that harness the power of the sun, ethanol is also considered a renewable fuel. It is a type of hydrocarbon that when burnt generates heat which can be used to power engines.
- Vehicles can be run on ethanol but they need to be modified so as not to compromise on efficiency and usability because Ethanol can corrode and damage the vehicle.
- Ethanol burns more completely than petrol, it avoids emissions such as carbon monoxide but there is no reduction in nitrous oxides.

Indian Scenario

- Ethanol Blended Petrol (EBP) programme was launched in January 2003, to promote the use of alternative and environment-friendly fuels and to reduce import dependency for energy requirements.

- EBP has been extended to the whole of India except Union Territories of Andaman Nicobar and Lakshadweep islands with effect from 01st April, 2019 wherein OMCs sell petrol blended with ethanol up to 10%.
- The government has notified E10 fuel in 2019 and as per the Ministry of Petroleum and Natural Gas, India's average blending stands at 9.90% in 2021
- India has also targeted a 5% blending of biodiesel with diesel by 2030.
 - ♦ Standards for E20, E85, E100 and even Ethanol blended diesel fuel have also been laid.

Expected Result of Switching to E20

- In 2020-21, India imported 185 million tons of petroleum worth \$55 billion burdening India's exchequer.
- According to a NITI Ayog report, a successful 20% ethanol blending programme could save the country \$4 billion per annum.
- However, when using E20 in four-wheelers originally designed for E0 and calibrated for E10, there is an estimated loss of 6-7% fuel efficiency.
- There is a loss of 1-2% efficiency for four-wheelers designed for E10 and calibrated for E20.
- The loss in efficiency due to blended fuel can be reduced with modifications to engines and tax incentives on E10 and E20 fuel

Ethanol production capacity in India

- India's current ethanol production capacity consists of 426 crore liters from molasses-based distilleries, and 258 crore liters from grain-based distilleries.
- Another 260 crore liters would be added to molasses-based distilleries once the 46 new distilleries become operational.
- For India to meet its E-20 target by the year 2025, it will need to bring in 30,000 additional sq km of land under maize cultivation.

“

The Gist

Amendments to the National Policy on Biofuels-2018, have been approved and E-20 targets have been preponed by 5 years to 2025 from 2030. By moving to E-20 fuel there will be a loss of efficiency, which can be reduced With modifications to engines. Tax incentives on E20 fuel may be considered to compensate the consumers for a drop in efficiency from ethanol-blended fuels.

GROWTH OF BIO-ECONOMY IN INDIA

Indian bio-economy has been effective in harnessing global tailwinds and is poised to grow strongly in coming times.

About:

- **Definition:** According to the Food and Agriculture Organisation (FAO), Bio-economy is defined as the production, use and conservation of biological resources, including related knowledge, science, technology, and innovation to provide information, products, processes and services to all economic sectors with the aim of moving towards a sustainable economy.
 - ♦ The term bio-economy was first explored and used as a means of substituting resources.
- **Aims and Objectives:** The bioeconomy aims to drive both sustainable development and circularity. In particular, the principles of the circular economy namely reuse, repair and recycle, are a fundamental part of the bioeconomy.
 - ♦ In recent times bio-economy has also become a key focus of political and technological interest both nationally and internationally.
- **Benefits:**
 - ♦ It is connected to wiser management of natural resources and avoiding overexploitation of the natural resources.
 - ♦ It may help in decreasing the dependence on fossil resources by helping to restructure energy and food production.
 - ♦ It will help in developing actions aimed at mitigating and adapting to climate change and reducing GHG emissions.

Growth Trajectory of Bio-Economy in India:

- **Global positioning:** India is among the top 12 destinations for biotechnology globally and 3rd largest biotechnology destination in the Asia Pacific region.
 - ♦ In 2021, the industry reached a market size of \$ 80 billion, rising 14% from the previous year.
 - ♦ The sector has seen an eight-fold rise in the past eight years.
- **Steady growth:** The bio-economy's contribution to the national GDP has also grown steadily in the past years.
 - ♦ The share of bioeconomy grew to 2.7% in 2020.
 - ♦ The COVID-19 pandemic has given the economy a further boost.
- **Blooming startups:** The biotech industry in India comprises over 5,000 companies (760 core companies and 4,240 startups).
 - ♦ India ranks 1 in Global Innovation Index amongst the Central & Southern Asia region.

- ♦ Every 14th startup is in the biotechnology sector and more than 1100 such bio tech startups emerged in the last year itself.
- **Attracting investments:** The number of investors in the biotech sector has risen by nine times and biotech incubators and funding for them have increased by seven times.
 - ♦ The number of biotech incubators has increased from 6 in 2014 to 75 now.
- **Increased product line:** Biotech products have increased from 10 to more than 700 today.

Sectoral Achievements of Bio-Economy:

- **Biosimilars:** India is one of the leading producers of biosimilars with one of the most biosimilars approved in the domestic market.
 - ♦ It is estimated that the biosimilars industry in India will grow at a CAGR of 22% to become \$ 12 Bn by 2025.
 - ♦ A biosimilar is biotherapeutic product which is similar in terms of quality, safety and efficacy to an already licensed reference biotherapeutic product.
- **Bio-services:** India offers a strong capability in contract manufacturing, research and clinical trials and is home to the most USFDA approved plants globally outside of the US.
- **Vaccines:** India has developed into a prominent vaccine manufacturer globally, occupying a leading position in supplying essentials vaccines.

SHARES IN BIO-ECONOMY

- Vaccine – 17.8%
- BioIT/Healthcare Research – 15%
- COVID Bioeconomy – 7.8%
- Diagnostics/Medical Devices – 25.6%
- BT Cotton – 14.4%
- Biofertilisers/Biopesticides – 1.4%
- Enzyme – 3.7%
- Biofuels- 3.6%
- Biologics/Therapeutics – 10.7%

Forecast about Bio-Economy in India:

- It is expected to reach \$150 billion by 2025, with a CAGR of 16.4%.
- Over 5075+ biotech startups as of now, expected to reach 10,000 by 2025.

- It would play a pivotal role in India realising a \$ 5 trillion dollar economy by 2024.
- According to the experts, India would soon be in the league of top 10 countries in the biotech ecosystem.

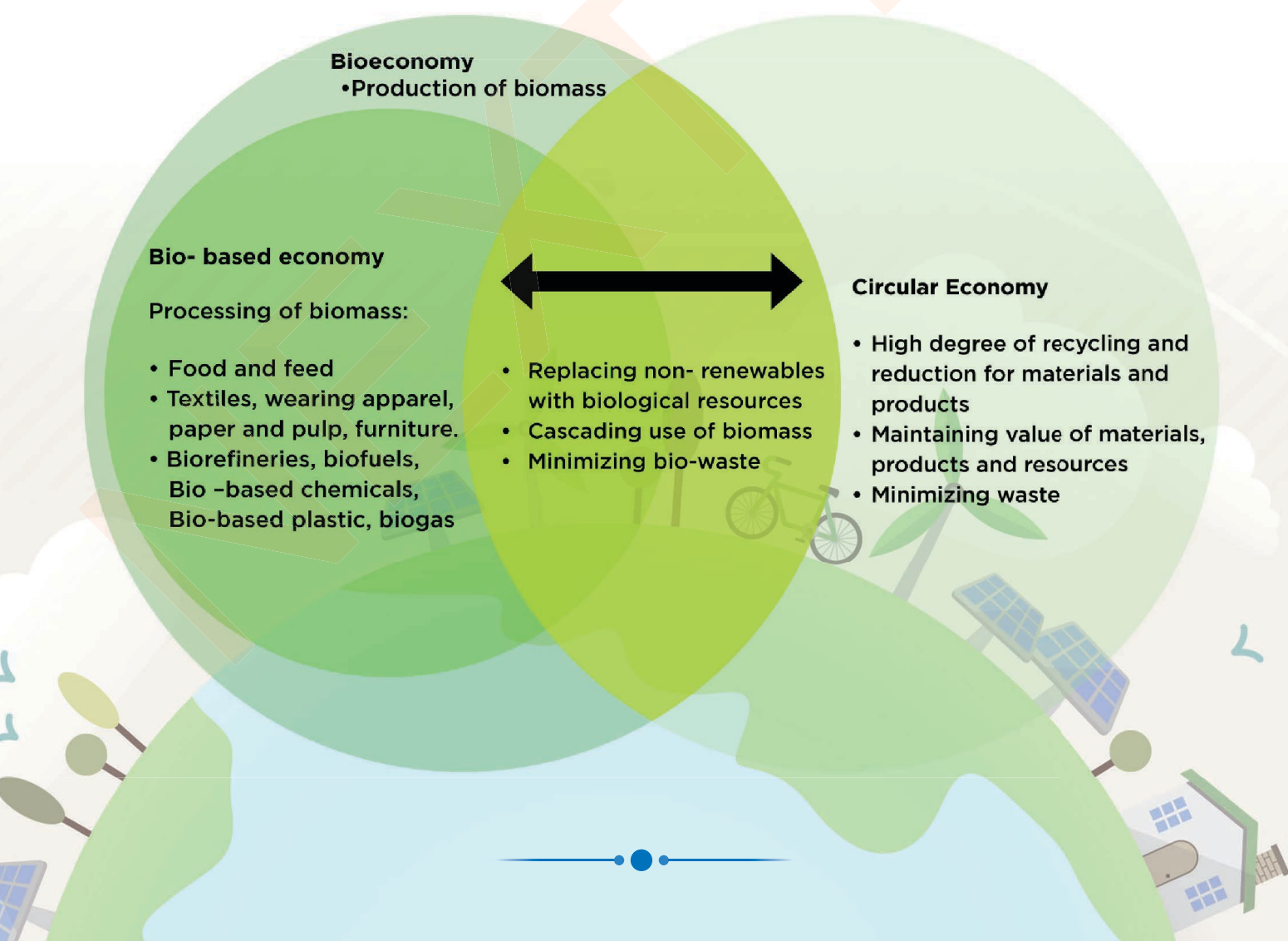
Reasons for Growth of the Bio-Economy in India:

- **Diverse climatic zones:** These zones provide a plethora of bio-resources.
- **Rising demand:** Of late there has been a surge in demand for bio-products in India and also at the global level.
- **Effective government interventions:** Programmes like AtmaNirbhar Bharat, Make In India.
- **Effective institutional support:** Biotechnology Industry Research Assistance Council (BIRAC) has been instrumental in providing institutional support to the industries for the growth of bio-economy.

- Incubation centers, both public and private have been hand holding the startups in the sector in pursuit of their growth process.
- **New avenues:** Developments in health, agriculture, energy, natural farming, bio fortified seeds are creating new avenues for the biotech sector.
- Strong skilled resource pool due to the high number of science and technology graduates.

“ The Gist

Indian bio-economy has grown steadily for almost a decade now. The sector has immense potential to provide employment avenues, attracting investment and increasing India's forex reserves. The government along with the private sector should proactively engage to leverage the larger global chunk so as to realise the full potential of the bioeconomy.



EXCEPTIONAL WARMING IN ARCTIC REGION

The Barents Sea around Svalbard and Franz Josef Land is warming seven times faster than the rest of the earth.

About

- The findings about the Arctic region have been published in a study by the Norwegian Meteorological Institute in the journal Scientific Reports.
- The researchers of the Norwegian Meteorological institute collected and analysed a new large dataset of observations from weather stations on Svalbard and the Russian archipelago of Franz Josef Land in the northern Barents Sea for the study.

Key Findings of the report:

- The collected data has temperature observations from northern and eastern Svalbard for the first time and in general, the observations go further back in time than ever available before.
- According to the report the new results have surpassed all available knowledge about observed temperature changes. Nowhere else on the globe does it seem to have greater warming than just across the northern Barents Sea
- It mentions that the exceptional warming of the Arctic could lead to more extreme weather in North America, Europe and Asia.
- The report mentions that in the last two decades, the average temperature northeast of the Norwegian archipelago of Svalbard has increased by more than five degrees Celsius.
- It mentions that the weather events south of the Arctic are linked to the region's warming through the Arctic jet stream.
 - ♦ The jet stream is a band of winds flowing on top of the Arctic region that usually keeps the cold Arctic air within the region.

Reasons for the Arctic becoming the fastest warming region in the world:

- The warming is due to the closed loop of melting sea ice and rapid increase in global temperatures and the melting of snow and ice exposes a darker surface and increases the amount of solar energy absorbed in these areas (albedo effect).
- As the Arctic region warms, the sea ice melts and exposes the ocean surface below.
 - ♦ This exposed surface absorbs more energy than sea ice would have and enhances the warming.
- All this causes more sea ice to melt, forming a feedback loop.

Factors controlling temperatures in the Arctic

- It is determined by both natural and man-made factors.
- Changes in sea ice and its influence on heat transfer between ocean and atmosphere and amount of heat transport in the atmosphere
- Overall cloud cover and presence of water vapour in atmosphere in that region influence the long-wave radiation linked to cooling of earth's surface
- Amount of soot on snow and higher concentrations of soot aerosols in the atmosphere affect the albedo of the snow.

Effects of Arctic warming

- Lightning strikes, which were a rare phenomenon in the arctic region, have increased by eight times in the last decade.



Map of the Arctic Ocean showing archipelagos of Svalbard and Franz Josef Land in the Barents Sea

- Sea Storms usually don't form in the arctic region as they need heat for the convection system to form. But due to rapid warming, such events are occurring frequently.
- In the Barents Sea, because of the warming and sea ice loss - a huge impact on the marine ecosystem and local weather is visible.
 - ♦ It has led to increase in abundance of Atlantic fish species and a decrease in the abundance of Arctic fish species
 - ♦ Apart from the local consequences, the warming of the Barents Sea also led to an extreme snowfall event, often dubbed as the 'Beast from the East', across most of Europe since 2018.
- There is an increase in the number of extreme weather events occurring southwards of the Arctic region.
 - ♦ Extreme events are linked to the region's warming through the Arctic jet stream.
 - ♦ The jet stream is a band of winds flowing on top of the Arctic region that usually keeps the cold Arctic air within the region.
 - ♦ But the excessive and rapid warming is causing this jet stream to become abandoned due to which, the cold air is interacting more frequently with the warm air from the lower latitudes, leading to extreme weather events.

Arctic Warming and India

- The Arctic warming has been linked to the heatwaves experienced in March, April, May and June across northwest and central India.
- It has also been linked to the unusual and deadly dust storms that killed around 500 people across north India.

GLOBAL WARMING VS CLIMATE CHANGE

- Sometimes these phrases are used interchangeably, however, they are different.
- Global warming has presented another issue called climate change i.e. global warming causes climate change.
- **Global warming:** It is the long-term warming of the planet's overall temperature.
 - ♦ Its pace has significantly increased in the last hundred years due to the burning of fossil fuels.
 - ♦ Fossil fuels burning causes a "greenhouse effect" in Earth's atmosphere.
 - ♦ The greenhouse effect is when the Sun's rays penetrate the atmosphere, but when that heat is reflected off the surface cannot escape back into space.
 - ♦ The gas produced by the burning of fossil fuels prevents the heat from leaving the atmosphere.
 - ♦ The excess heat in the atmosphere has caused the average global temperature to rise overtime.
- **Climate change:** It refers to changes in weather patterns and growing seasons around the world.
 - ♦ It also refers to sea level rise caused by the expansion of warmer seas and melting ice sheets and glaciers.
 - ♦ Ecosystems are adapted to the climate in a certain area, and climate change will therefore influence ecosystems.
 - ♦ Climate change can influence transport and distribution of ecotoxins - a toxin released by a living bacterial cell into its surroundings.
 - ♦ Ecotoxins reactivity, their uptake and accumulation in organisms are all temperature-dependent which can impact on the health and well-being of both humans and ecosystems

“

The Gist

According to the recently released report, the Northern Barents Sea has been the warmest around the globe. The Barents Sea around Svalbard and Franz Josef Land is warming seven times faster than the rest of the earth. It highlights that the exceptional warming of the Arctic could lead to more extreme weather in North America, Europe, and Asia.

Also, the average temperature in northeast of the Norwegian archipelago of Svalbard has increased by more than five degrees Celsius. Many phenomena can be associated with the increasing temperature of the arctic such as an increased number of lightning strikes, sea storms, and sea ice loss. There is an increase in the number of extreme weather events occurring southwards of the Arctic region. The pace of Global Warming has significantly increased in the last hundred years and its direct impact can be seen in the form of Climate change which is causing many never seen phenomena around the globe.

The current global efforts don't seem to be enough to tackle the concerns around climate change. The global leaders have to come up with more dynamic and sincere efforts so that there can be a visible positive change in the current situation. It is the need of the hour to address the Climate change and Global warming concerns so that we can think of a sustainable future for the planet.

PRESIDENTIAL ELECTIONS IN INDIA

The Election Commission of India has notified the date for Presidential elections.

About

- The Presidential elections are scheduled in the month of July, 2022.
- The elections to the office of the President in 2022 will be the 16th presidential election to be held in India.

Process of Presidential Election in India

- According to the Constitution of India, an election to elect the new President should be held before the expiration of the term of the incumbent President of India.
- According to Article 55, The President of India is elected through indirect elections held by an electoral college.
 - The electoral college consists of MPs of both Houses of Parliament and MLAs of the states of Delhi and Puducherry.
- The President-elect is able to enter upon his office on the day following the expiry of the term of the outgoing President.

NOTE

Nominated members of Rajya Sabha, Lok Sabha and the Assemblies, and members of state Legislative Councils, are not part of the electoral college.

- When an assembly is dissolved, the members cease to be qualified to vote in the presidential election, even if fresh elections to the dissolved assembly are not held before the Presidential election.
- In President Elections all those electors in preventive detention can vote and those in jail will have to apply for parole and if they get parole, they can vote.

ROLE OF ECI IN PRESIDENTIAL ELECTIONS

- Under the provisions of the Presidential and Vice-Presidential Elections Act, 1952, the notification calling the election to the office of the President can be issued by the Election Commission on any day within the period of sixty days before the expiry of the term of office of the outgoing President.
- Note: Under Article 324 of the Constitution of India, the authority to conduct elections to the Office of President is vested in the Election Commission of India (ECI).
- ECI administers elections to the Lok Sabha, Rajya Sabha, State Legislature (including Legislative Assembly and Legislative Council) and the offices of the President and Vice President in the country.

WHO ELECTS INDIA'S PRESIDENT?

VALUE OF VOTE OF EACH ELECTORATE

Each MP and MLA vote has a certain value attached to it. This differs from state to state.

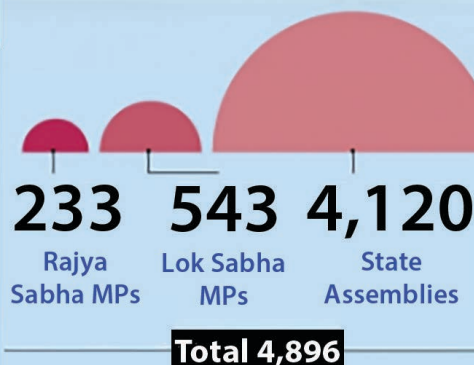
For the MLA, the number is decided by the total state population divided by the number of elected members to the legislative assembly, further divided by 1,000.

The value of the vote of an MP is decided by dividing the total value of votes of MLAs of the country, divided by the total number of elected MPs in Lok Sabha and Rajya Sabha.

The total combined value of votes is 10,98,903 — 5,49,408 for MPs and 5,49,495 for MLAs.

The halfway mark is expected to be 5,49,442 votes. However, the actual halfway mark depends on valid votes.

THE NUMBERS



HOW IT WORKS

The winning candidate needs to secure a certain quota of votes which is 50% of the valid votes polled +1.

Each MP and MLA indicates his/her choices in case of multiple candidates, in an order of preference.

Each vote cast is given a value based on various factors such as the first preference order, value of vote of each electorate, etc.

Eligibility for the Office of President

- According to Article 58 of Indian Constitution, a candidate should fulfill the following eligibility conditions to contest the election to the Office of President:
 - ♦ Must be a citizen of India,
 - ♦ Must have completed 35 years of age,
 - ♦ Must be eligible to be a member of the Lok Sabha,
 - ♦ Should not be holding any office of profit under the Government of India or the Government of any State or under any local or other authority subject to the control of any of the said Governments.
- However, the candidate holding the office of President or Vice-President or Governor of any State or Ministers of the Union or any State and shall be eligible to contest election.

Procedure for election to the Office of President of India

- Nomination paper has to be subscribed by at least fifty electors as proposers and at least fifty electors as seconders and accompanied with a security deposit of Rs 15000 for a candidate's nomination.
- The election of the President shall be held in accordance with the system of proportional representation by means of single transferable vote [Article 55]. The voting shall be done by secret ballot only. This system ensures that the successful candidate is returned by the absolute majority of votes.
- A candidate, in order to be declared elected to the office of President, must secure a fixed quota of votes i.e., 50% of valid votes polled +1.
- Each member of the electoral college is given only one ballot paper. The voter, while casting his vote, is required to indicate his preferences by marking 1, 2, 3, 4, etc. against the names of candidates. This means the elector has to select and give his order of preference for the candidate in the ballot paper provided.
- Disputes in election results to the Office of the President can be called in question by means of an election petition presented to the Supreme Court after the election is over.
 - ♦ All the procedures regarding this are regulated by the Presidential and Vice-Presidential Act, 1952.
 - ♦ Such an election petition should be presented by a candidate or twenty or more electors joined together as petitioners.
 - ♦ Such a petition can be filed at any time after the date of publication of the result of President polls but not later than 30 days from the date of such publication.

- However, the Supreme Court, under Article 145 of the Constitution, may regulate the form, manner and the procedures connected with such election petitions.

Important details about the Presidential electoral process

- Only the marking of first preference is compulsory for a ballot paper to be valid. Marking other preferences is optional.
- Also the provisions of the Anti-Defection Law applicable in Presidential elections.
- The Members of the Electoral College can vote according to their wish and are not bound by any party whips. The voting is by secret ballot. Therefore, Party whip does not apply in this election. The provisions of NOTA (None of the Above) are not applicable.
- Under the Presidential and Vice-Presidential Rules, 1974 An elector under preventive detention can cast his vote through postal ballot, which will be sent to him by the Election Commission on the place of his detention.
- According to the President and Vice-President Elections Act, 1952 - A Presidential candidate can file a maximum of four nomination papers. However, he is required to make only one security deposit in this regard
- An elector (i.e. member of the electoral college) can propose or second the name of only one candidate at a Presidential election.

THE PRESIDENT OF INDIA

- Articles 52 to 78 in Part V of the Constitution deal with the Union executive. The Union executive consists of the President, the Vice-President, the Prime Minister, the council of ministers and the attorney general of India.
- The President is the head of the Indian State. Under the Article 52 of Indian Constitution, there shall always be a President of India.
 - ♦ She/He holds the highest elective office in the country.
 - ♦ She/ He is elected in accordance with the provisions of the Constitution and the Presidential and Vice-Presidential Elections Act, 1952.
 - ♦ The President holds office for a period of five years from the date on which he enters upon his office.
- He is the first citizen of India and acts as the symbol of unity, integrity and solidarity of the nation.
- The oath of office to the President is administered by the Chief Justice of India and in his absence, the senior-most judge of the Supreme Court available.
- Any other person acting as President or discharging the functions of the President also undertakes the similar oath or affirmation.

AQLI ANALYSIS: EPIC REPORT

Recently, Energy Policy Institute at University of Chicago (EPIC) published the Air Quality Life Index (AQLI) Analysis for 2021.

Major Highlights of EPIC Report:

- **About India**
 - ♦ **Short average life expectancy:** Air pollution shortens average life expectancy in India by 5 years.
 - Whereas child and maternal malnutrition reduces average life expectancy by about 1.8 years, while smoking reduces the average life expectancy by 1.5 years.
 - It noted that all of the Indian population live in areas where the average particulate pollution level exceeds the WHO guidelines.
 - ♦ **Indo Gangetic plain, most affected region:** Pollution would cut 7.6 years of life expectancy of 40% of Indians who live in Indo-Gangetic plains if the existing pollution level persists.
 - This translates into 510 million residents of India.
 - ♦ **India, major contributor to world's pollution:** The report found that 44% of the world's increase in pollution has come from India since 2013.
 - Since 1998, India's average annual particulate pollution (PM 2.5) has increased by 61.4%, and currently, it stands as the world's second most polluted country after Bangladesh.
 - More than 63% of the population live in areas that exceed the country's own national air quality standard of 40 µg/m³.
 - ♦ Delhi, the most polluted capital will tend to lose 10 years of life expectancy if the particulate emission continues at current pace and not adhering to WHO guidelines.
 - ♦ A permanent nationwide reduction of 25%, the midpoint of NCAP's target range, would increase India's average national life expectancy by 1.4 years and 2.6 years for residents of the national capital territory of Delhi.
- **About Rest of the World:**
 - ♦ **South Asia, most affected region:** The Report noted that air pollution continued to increase in South Asia, the most affected regions of the world during the first year of the pandemic despite Covid-19 lockdown.
 - ♦ **Global observation:** In 2019, over 7 million deaths annually were linked to exposure of various pollutants in the world with analysts claiming that around 80% of deaths attributed to PM2.5 exposure.
 - Among all classical air pollutants, inhalable PM2.5 is considered the most hazardous as it gets deposited in lungs through breathing and causes serious respiratory problems.

Air Quality Life Index (AQLI)

- The AQLI estimates the relationship between air pollution and life expectancy of the people in different countries.
- **Aims and Objectives:**
 - ♦ It helps to measure the gain in life expectancy the country can experience if their community met World Health Organisation (WHO) guidelines.
 - ♦ The index helps the communities and policymakers to gauge the efficacy of pollution controlling policies and to come out with effective policy sets to tackle pollution.
- **Methodology:** The results of the studies are combined with detailed global population and PM2.5 data to estimate the impact of particulate matter on life expectancy across the globe.
- **Released by:** The AQLI is produced by the Energy Policy Institute at the University of Chicago (EPIC).
 - ♦ The analysis of AQLI is compiled in the EPIC Report.

About Particulate Matter (PM)

- It is a mixture of solid particles and liquid droplets found in the air.
- Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye.
- Others are so small they can only be detected using an electron microscope.
- **Types of PM**
 - ♦ **PM10:** Inhalable particles, with diameters that are generally 10 micrometers and smaller.
 - ♦ **PM2.5:** Fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.
- **Sources of PM**
 - ♦ **Emitted directly from a source:** construction sites, unpaved roads, fields, smokestacks or fires.
 - ♦ **Result of complex reactions of chemicals:** Reaction between sulfur dioxide and nitrogen oxides, which are pollutants emitted from power plants, industries and automobiles.

Steps taken by India to tackle Air Pollution:

- **NCAP:** The Indian government launched the National Clean Air Programme (NCAP) in 2019 with a goal to reduce particulate pollution by 20-30 percent from 2017 levels, by 2024.
 - ♦ The NCAP targets are non-binding though.

- **CAP:** The Government notified a Comprehensive Action Plan (CAP) in 2018 identifying timelines and implementing agencies for actions identified for prevention, control and mitigation of air pollution in Delhi and NCR.
- **GRAP:** Graded Response Action Plan was notified in 2017, for prevention, control and abatement of air pollution in Delhi and NCR.
 - ♦ It identifies graded measures and implementing agencies for response to four AQI categories, namely, Moderate to Poor, Very Poor, Severe and Severe + or Emergency.
- **SAMEER app:** It has been launched wherein air quality information is available to the public along with provision for registering complaints against air polluting activities.
 - ♦ Air quality information collection and dissemination are done from a centralised location. It provides real time air quality status to all stakeholders.

Way Forward

- As per WHO, chronic exposure to fine particulate matter contributes to the risk of developing cardiovascular and respiratory diseases and lung cancer.
- CPCB in India prescribes an annual average of 40 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) as the permissible upper limit for

PM_{2.5} while WHO prescribes safe limits of this pollutant as no more than 5 $\mu\text{g}/\text{m}^3$.

- India would stand to gain 1.6 and 5 years in life expectancy if air pollution levels are reduced to the Indian standard (40 $\mu\text{g}/\text{m}^3$) and the WHO standard (5 $\mu\text{g}/\text{m}^3$) respectively.
 - ♦ The policymaker should set stronger ambient air quality standards.
- Also, Indian environmental policies are more urban centric and leave rural India while formulating pollution abatement policies.
 - ♦ The urban-rural divide should be done away with while formulating and implementing these policies.

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The Gist

Particulate pollution is the greatest threat to lives in India. Though the government has made efforts to arrest the pollution, the approach has been more urban centric and has not taken into account the vulnerabilities of rural India and smaller towns.

India should also focus on raising the standards of ambient air quality which as of now is far below the global standards.



Salient Features under NCAP

BONN CLIMATE CHANGE CONFERENCE

Recently, a climate change conference was held in Bonn, Germany as a precursor to the Conference of Parties (COP27).

About:

- At the United Nations mid-year climate change conference held in Bonn, Germany, developing countries have promoted their agenda in various fora.
- The developing countries used side-events or interventions during large-format technical events (which are mandated events) as platforms to voice the perceived issues and challenges.
- Accordingly, some points of contention mentioned by developing countries were:
 - ♦ Climate finance
 - ♦ Disproportionate burden of climate change
 - ♦ A balance between mitigation and adaptation

About the Bonn Conference

- **The 56th session of the UNFCCC's** Subsidiary Body for Implementation (SBI) and Subsidiary Body for Scientific and Technological Advice (SBSTA) was referred to as SB56.
- **Stage for COP 27:** It was meant to set the stage for the upcoming COP27 event in Sharm el-Sheikh, Egypt.
- **Forward Actions:** It was also mandated to take forward action items announced at the 26th Conference of Parties (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2021.
- **A general lack of progress** was witnessed as countries failed to find compromises.
 - ♦ For example, a new finance mechanism for "loss and damage" by a group of developing countries was kept off the agenda due to opposition by wealthy nations.
- **Together for implementation:** Implementation" was a major theme at the Bonn talks. It is expected to continue at the next big climate summit COP27 in Egypt, where "together for implementation" is the official tagline.
- **The Glasgow Climate Pact** discussed at Bonn had attempted to bridge two divides:
 - ♦ Between current ambition and what would be necessary for 1.5 °C
 - ♦ Between the timeline of required action this decade and the schedule of the Paris ratchet.
- **The U.S. Agenda:** In Bonn, the US fought for language on "major emitters" so as to make China more responsible before 2030 for cutting greenhouse gases.
 - ♦ LMDC opposed this w.r.t. 1992 UNFCCC call on nations to act based on their "common but differentiated responsibilities and respective capabilities".

- **The Alliance of Small Island States (AOSIS)** members favored rapid emissions cuts (20% by 2025) to avoid the impacts threatening their island homes advocated for a long-term initiative.
- **Sectoral Targets:**
 - ♦ The EU pushed for the programme to focus on key areas of the economy (COP 26 theme) like coal phaseouts and ending deforestation.
 - ♦ However, India opposed this as it would place an additional burden on the economy of developing countries.
- **Listings of several technical issues** like:
 - ♦ Advancement of discussions on the Glasgow-Sharm el-Sheikh work programme on the global goal of adaptation.
 - ♦ The work programme for scaling up mitigation ambition urgently.

ABOUT THE UNFCCC

- With 197 Parties, the United Nations Framework Convention on Climate Change (UNFCCC) has near universal membership and is the parent treaty of the 2015 Paris Climate Change Agreement.
 - ♦ The main aim of the Paris Agreement is to keep a global average temperature rise this century well below 2 degrees Celsius.
- The UNFCCC is also the parent treaty of the 1997 Kyoto Protocol.
- The ultimate objective of all agreements under the UNFCCC is to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system, in a time frame which allows ecosystems to adapt naturally and enables sustainable development.

Major issues highlighted:

Climate finance:

- **Lack of clear definition:** There has been no formal agreement on the definition of climate finance. It makes it difficult to identify a set of ambitious goals and monitor fund allocation and financial flows subsequently.
- **Resource Crunch:** The \$100 billion goal of climate finance every year by 2020 is still unmet by developed countries. It has seriously affected adaptation and mitigation capabilities of developing countries.

- **Intergovernmental Panel on Climate Change (IPCC):**
 - ♦ Recent assessments concluded that losses and damages from climate change are not comprehensively assessed.
 - ♦ It stresses the need for “new and additional” financing for effective adaptation and mitigation efforts.
- **Green Climate Fund (GCF) Issues:**
 - ♦ This traditional funding source requires lengthy applications and pays out slowly, making it inappropriate to deal with aftermath of the extreme weather events.
 - ♦ Also, humanitarian aid provided cannot deal with slow onset events like sea level rise.
- **Not in sync with needs of developing countries:** A finance coordinator for the Group of 77 and China negotiating bloc informed that climate finance does not reflect the true needs of the developing countries.

Glasgow Pact:

- **Central Goals:**
 - ♦ There was a perceived shift in goalposts since CoP26 in Glasgow.
 - ♦ Central goals were shifted to attainment of the idea of Net Zero by 2050 and the need to keep 1.5C within reach.
 - ♦ These central goals were unrestricted from the principle of “common but differentiated responsibility”.
- **Like-Minded Developing Countries (LMDC) bloc view:**
 - ♦ Since ‘Net zero by 2050’ is a global goal, it should be applied to each country according to their ability, rather than all countries.
 - ♦ As the developed countries are financially better placed and have technical capabilities to achieve global goals, they should assume larger responsibility.
- **Colonial nature of the Glasgow Pact:**
 - ♦ The Glasgow pact is providing the flexibility to developed countries in achieving the goal under Paris Agreement by 2050.
 - ♦ However, it is shifting the burden of climate change to developing countries.
 - ♦ Developing world fears a creation of a financial and institutional structure to enhance the dependency of developing countries with the Global North.

Balance between mitigation, adaptation, loss & damage:

A “mitigation-centric” pact:

- The Indian delegation identified the Glasgow Climate Pact as mitigation-centric.
- It establishes a mitigation work programme with a targeted timeline.
- It also asks for an annual Nationally Determined Contributions (NDCs) synthesis report.
- Developed countries need to make substantial reductions in emissions by 2030 and leave carbon space for the developing world.

Adaptation and loss & damage:

- Given the urgency to reduce emissions, the Paris Agreement provides for a cycle of enhanced ambition.
- However, the Glasgow pact asked parties to submit their long-term strategies and enhance their NDCs annually.
- This imbalance will hopefully be restored by CoP 27 in November 2022 by ensuring the balance on issues like loss and damage as well as adaptation.

The Bonn climate conference discussed conflicting issues like the inclusion of adaptation and loss and damage in the agenda, upon request from the LMDC bloc.

- But, it was not given adequate attention in terms of number of sessions. Equal importance to these issues of importance for the developing countries should be given in COP 27 in Egypt.

PARIS CLIMATE AGREEMENT

- It is a legally binding international treaty on climate change.
- It was adopted in 2015 by 196 Parties at COP 21 in Paris and entered into force in November 2016.
- Its goal is to limit global warming to 1.5 degrees Celsius, compared to pre-industrial levels.
- **Nationally Determined Contributions (NDCs):** In it, countries communicate their action plans to reduce their Greenhouse Gas emissions (GHG) in order to reach the goals of the Paris Agreement.
- **Long-term low greenhouse gas emission development strategies (LT-LEDS):** It provides the long term horizon to NDCs.

Differentiated Responsibility:

- Developing countries’ contribution to the accumulation of carbon has always been low.
- Their per capita emissions are significantly low. However, they are suffering from disproportionate impacts of climate change. Therefore, countries with significant development gains should assume responsibility for a stronger mitigation action.

Way Forward:

- Though the loss and damage finance was not added to the formal agenda, it clearly appeared as a priority issue for the developing countries. Therefore, it is likely to re-emerge during the COP 27 i.e. African COP.
- Though in theory, the Bonn Climate Change conference enabled the shift of the focus from climate negotiations to implementation. It has built the course for concrete actions for the goal of climate justice.

50 YEARS OF STOCKHOLM CONVENTION

Recently, Stockholm+50 conference was held in Stockholm to commemorate 50 years of the meeting which suggested that development needs to be environmentally sustainable.

About:

- The 1972 United Nations Conference on the Environment in Stockholm was the first world conference to make the environment a major issue.
- Stockholm+50 is a global conference which is collaborative and multi-stakeholder in nature, open to all participants who will be invited to share experiences and initiatives to protect the planet.

Stockholm+50: Key Deliberations:

- **To deal with Climate Crisis:** The world faces a triple planetary crisis of climate change, pollution and waste, nature and biodiversity loss, as well as other planetary ills that are affecting current and future prosperity and wellbeing.
 - ♦ It also threatens the achievement of the Sustainable Development Goals.
- **For sustainable recovery:** To discuss initiatives which can be undertaken to protect the planet and contribute to sustainable and inclusive development, including a sustainable recovery from the COVID -19 pandemic.

Stockholm Conference (1972)

- It is also known as 'United Nations Conference on the Human Environment'.
- **Aim:** To create a common governance structure for the planet's environment and natural resources.
- **Outcome:** It led to the adoption of the Stockholm Declaration.
 - ♦ **The Stockholm Declaration** talked about the start of a dialogue between industrialized and developing countries

on the link between economic growth, the pollution of the air, water, and oceans and the well-being of people around the world.

- It also led to the creation of the United Nations Environment Programme (UNEP) and Action Plan for the Human Environment.

INDIA AND UNEP

- India has had a close engagement with the United Nations Environment Programme (UNEP) since its inception and there are ongoing and implemented UNEP projects in India.
- The Ministry of Environment, Forests & Climate Change is the nodal Ministry dealing with India's engagement with UNEP.

Outcome of Stockholm Conference

- The Stockholm Conference of 1972 had put environmental issues on the global agenda for the first time.
- **Today, over 176 countries have environmental framework laws;** 150 countries have enshrined environmental protection or the right to a healthy environment in their constitutions; and **164 countries have created cabinet-level bodies responsible for environmental protection, as per the United Nations.**

Key challenges to the environmental health

- **Population growth:** can affect the environment not only through use of natural resources, but also through indirect impacts such as unplanned urbanisation.

KEY FEATURES OF STOCKHOLM DECLARATION

- Earth's natural resources, including air, water, land, flora and fauna, especially representative samples of natural ecosystems, must be safeguarded for the benefit of the present and future generations through careful planning or management.
- The discharge of toxic substances and the release of heat, should be within the capacity of the environment to absorb its impact.
- States shall take all steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.
- The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries,
- States have the sovereign right to exploit their own resources in accordance with the Charter of the United Nations and the principles of international law.

- **Malnutrition and changing consumption patterns:** put greater pressure on land resources, threatening the environment and adoption of sustainable agricultural practices.
 - ♦ By 2050, the world needs to produce at least 50 per cent more food to feed the projected global population of 10 billion people.
- **Increasing PM 2.5 levels in atmosphere :** Globally, the highest annual average concentrations of PM 2.5 are seen in areas affected by windblown sand and dust (northern Africa and west Asia), fires (central Africa and Latin America) and anthropogenic pollution (south and east Asia).
 - ♦ Cities with the highest levels were clustered in east-central China and the Indo-Gangetic Plain
- Agricultural and food production are still responsible for most of the changes of land use, including forests and other types of ecosystems.
- Current land management cannot achieve this while preserving ecosystem services, the loss of natural capital, combating climate change, addressing energy and water security, and promoting gender and social equality.

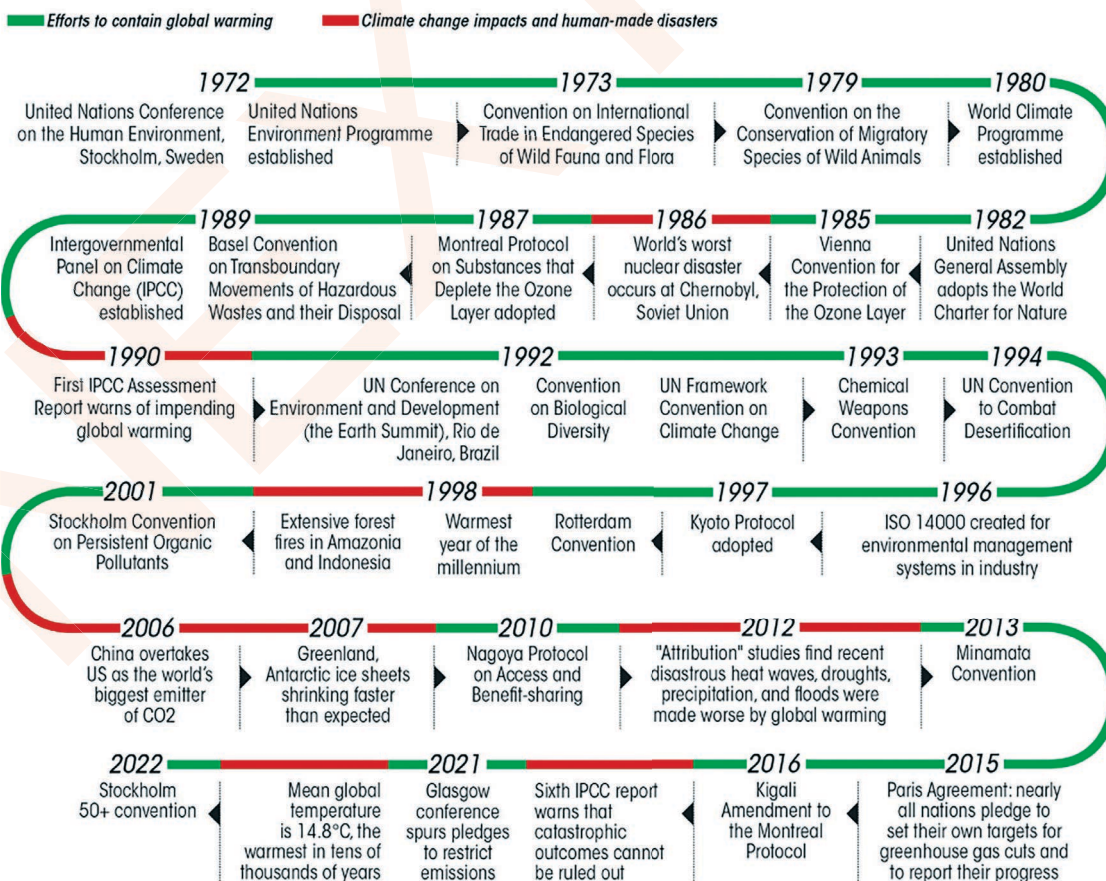
- ♦ Human-induced land degradation remains a fundamental environmental problem affecting food security, livelihoods and lives of the people.

United Nation Environment Programme (UNEP)

- **Nature:** It is a global authority that sets the environmental agenda within the United Nations system.
- **Mandate:** It promotes the implementation of the environmental dimension of sustainable development.
- Through its campaigns, particularly World Environment Day, UNEP raises awareness and advocates for effective environmental action.
- **Headquarters:** Nairobi, Kenya.
- UNEP has all 193 **UN member states** including India as its members.
- It also works with representatives from civil society, businesses, and other major groups (both public and private) to address environmental challenges.

What the world did after Stockholm

Major environmental conferences, treaties and disasters



NEW TECTONIC PLATES MAP OF EARTH

In a recent study researchers from the University of Adelaide, Australia have updated the map of the earth's tectonic plates.

About:

- The conducted study, including the map, indicates:
 - Formation of continents due to tectonic movements.
 - Addition of new microplates along with existing plates.
- This new map of Earth's tectonic plates is supposed to help in better understanding of natural hazards like earthquakes and volcanoes.
- According to the United States Geological Survey:**
 - A tectonic plate** is a massive, irregularly shaped slab of solid rock.
 - It is composed of the lithosphere or the earth's top layer (both continental and oceanic).
 - Tectonic plates move horizontally over the asthenosphere as rigid units.
 - Tectonic plate movements often lead to earthquakes and volcanoes.

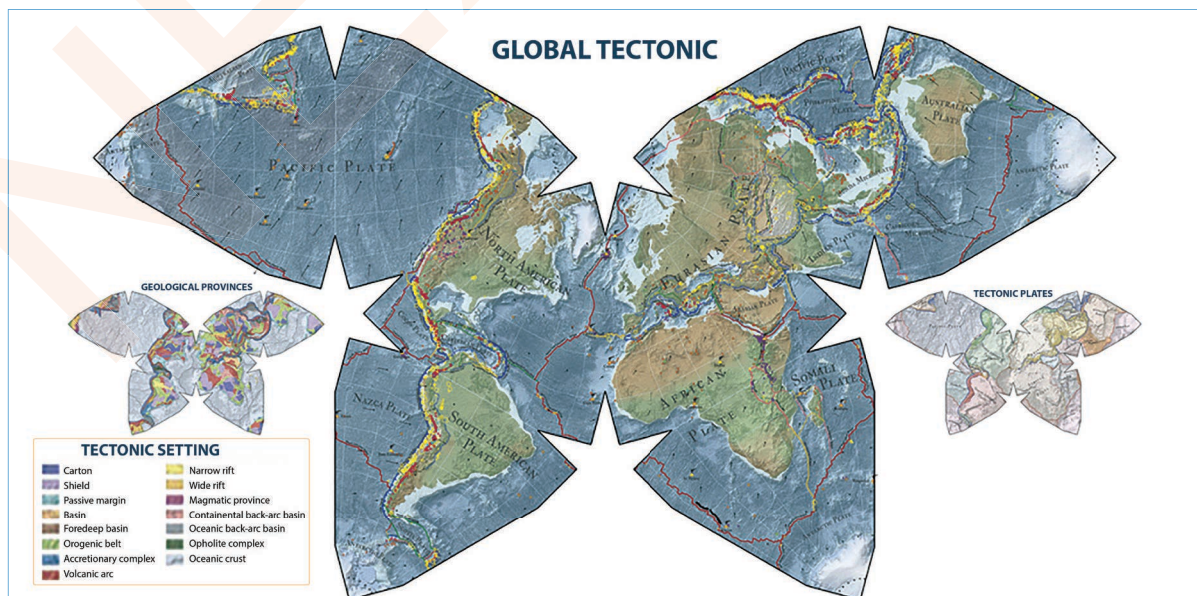
Key Findings of the study:

- "New maps of global geological provinces and tectonic plates" study:**
 - The study included past construction of continents. Example, the first supercontinent 'Vaalbara'.
 - Vaalbara fragmented into other supercontinents over the years.
 - Last of such fragmented continent was Pangea (335-65 million years ago).
 - Pangea in turn fragmented into the seven modern continents making the earth's land surface today.

- As per the study, 26 orogenies i.e. the process of mountain formation have affected the geomorphological features of the crust. Also, many of these orogenies resulted into the formation of supercontinents.
- Deformation zones and microplates accounted for 16% of Earth's surface area.
- The study estimated 57.5% of the Earth's surface is covered by oceanic crust and 42.5% is covered by continental crust.

Creation of the new map:

- The researchers assembled continents piece by piece, like a jigsaw.
- After finishing it each time, the map was cut and reorganized to produce a new picture.
- Researchers included the plate polygons, tectonic province polygons, the oceanic-continental crustal boundary, and plate boundary types to develop an accurate map.
- Combination of three models was taken up by the researchers to map the new geological provinces and tectonic plates:
 - A plate model:** It is based on the existing knowledge of tectonic plates.
 - A province model:** It is based on the earth's surface geological information.
 - An orogeny model:** It is based on the process of mountain formation, which occurs when two tectonic plates collide at a convergent boundary interaction.

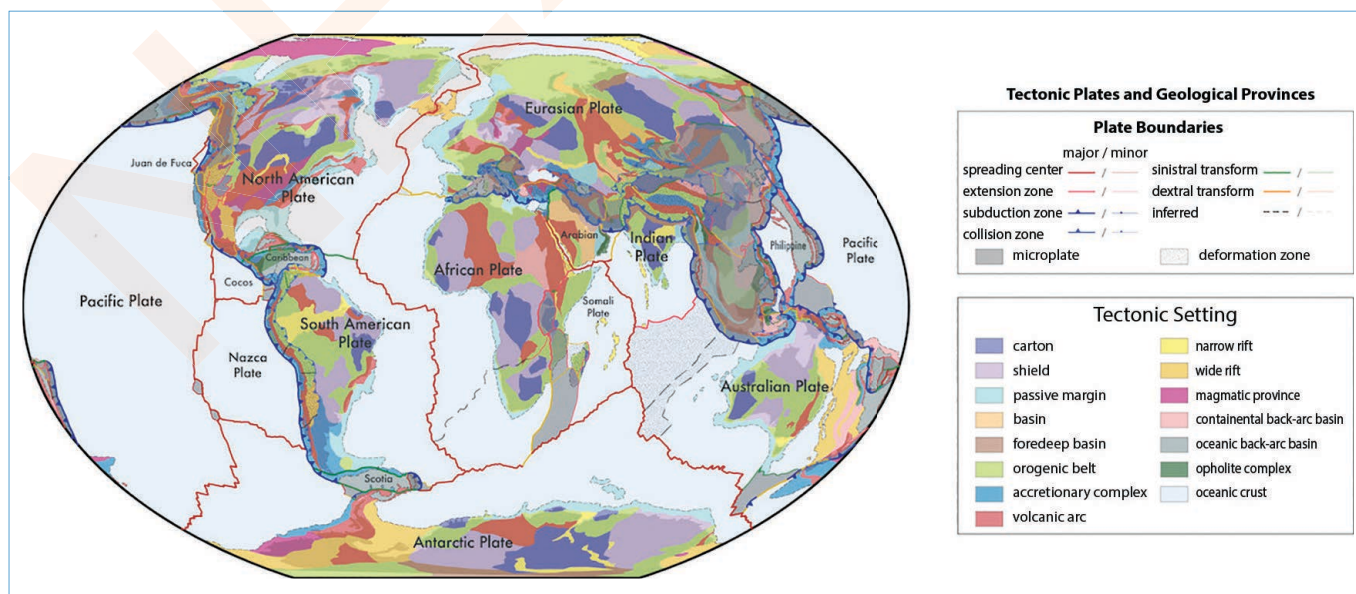


Changes made in the tectonic plate model:

- The tectonic plate model was updated last time in 2003.
- Microplates:** The new study (including map) added several new microplates to the existing tectonic plate model:
 - ♦ **The Macquarie microplate:** It is located south of Tasmania.
 - ♦ **The Capricorn microplate:** It separates the Indian and Australian plates.
- Western North America:** As compared to the previously drawn narrow boundary, the newly delineated boundary is wider by around 1,500 km.
- Central Asia:** The new model has included all the deformation zones north of India as the Indian plate continues to collide into Eurasian plate.
- Significance of the study:** Researchers of the study claim that:
 - ♦ The new plate tectonics model offers better explanation about the spatial distribution of 90% of earthquakes and 80% of volcanoes from the past 2 million years.
 - ♦ In comparison, existing models of plate tectonics capture only 65% of earthquakes.
 - ♦ The new study helps in showcasing the various components to geologists, enabling them to piece together the previous images (maps).
 - ♦ The province model can guide for further exploration of minerals.
 - ♦ The orogeny model can offer a far better understanding of the evolution of the earth.
- This theory proposed that the earth's lithosphere was divided into seven major and some minor plates.
- Surrounding these plates lie young fold mountain ridges, oceanic trenches and lithospheric faults.
- The major plates** are as follows:
 - ♦ Antarctica and the surrounding oceanic plate
 - ♦ North American plate
 - ♦ South American plate
 - ♦ Pacific plate
 - ♦ India-Australia-New Zealand plate
 - ♦ Africa with the eastern Atlantic floor plate
 - ♦ Eurasia with the adjacent oceanic plate
- Important minor plates** are as follows:
 - ♦ **Cocos plate:** Between Central America and the Pacific plate.
 - ♦ **Nazca plate:** Between South America and the Pacific plate.
 - ♦ **Arabian plate:** Mostly the Saudi Arabian landmass.
 - ♦ **Philippine plate:** Between the Asiatic and Pacific plate.
 - ♦ **Caroline plate:** Between the Philippine and Indian plate .
 - ♦ **Fuji plate:** North-east of Australia
 - ♦ **Aegean plate:** Mediterranean region
 - ♦ Caribbean plate.
 - ♦ Iranian plate.
 - ♦ **Juan de Fuca plate:** Between Pacific and North American plates.
- All these plates (along with continents as part of the plates) have been constantly moving over the globe throughout geological history.
- Thus, this theory removed misconceptions of Continental Drift Theory (CDT) given by Alfred Wegener which proposed the movement of individual continents.

Early Plate Tectonics Theory:

- McKenzie, Parker and Morgan in 1967** proposed it to further revive the interest in the phenomenon of distribution of oceans and continents.



- CDT had proposed that all the continents initially existed as a supercontinent in the form of Pangea.
 - ♦ Whereas, plate tectonics suggested that Pangea was a result of convergence of different continental masses which were in turn part of the tectonic plates.
- Scientists have determined the positions held by respective landmasses across geological timeline using the paleomagnetic data. For example, the position of peninsular India is traced with the help of analysis of rocks from Nagpur area.
- As per the theory, there are three types of plate boundaries:
 - ♦ **Divergent Boundaries:**
 - Plates move away from each other and a new crust is generated.
 - The location at which it occurs is called a spreading site.
 - For example, Mid Oceanic Ridge separates the American plate from the Eurasian and African plates.
 - ♦ **Convergent Boundaries:**
 - As two plates converge, one plate dives under another and the crust gets destroyed.
 - The location of sinking of a plate is called as a subduction zone.
 - Convergence can occur in 3 ways: Between 2 continental plates or 2 oceanic plates and between a continental and an oceanic plate.
 - ♦ **Transform Boundaries:**
 - Here the lithospheric crust is neither produced nor destroyed, as plates slide past each other horizontally.
 - It occurs at transform faults which are planes of separation perpendicular to the mid oceanic ridges.
- **Rates of the plate movement:**
 - ♦ The scientists determine the rate of plate movement with the help of strips of normal and reverse magnetic field lying parallel to the mid-oceanic ridges.
 - ♦ The Arctic Ridge has the slowest rate (less than 2.5 cm/year).
 - ♦ The East Pacific Rise in the South Pacific (about 3,400 km west of Chile) has the fastest rate (more than 15 cm/year).

- **Force for the plate movement:**

- ♦ The slow movement of hot, softened mantle lying below the rigid plates (asthenosphere) generates a circular convective flow. It is the main force which drives the plate movement.
- ♦ The heat energy for the convective flow is generated from the two sources: radioactive decay and residual heat.

Sea Floor Spreading Theory (1961):

- Henry Hess tried to explain the distribution of earthquakes and volcanoes through this theory. In his hypothesis, he had proposed:
 - Constant volcanic eruptions at the crest of oceanic ridges causes the rupture of the oceanic crust.
 - The new lava wedges into ruptured crust and pushes the oceanic crust on either side.
 - Thus, the ocean floor spreads and such a spread portion gets consumed at oceanic trenches which are sources of deep seated earthquakes.

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The Gist

- In a recent study; researchers from the University of Adelaide, Australia have updated a map of the earth's tectonic plates.
- This new map was created by combining 3 models for accuracy. These are, a plate model, a province model and an orogeny model.
- The study has added some new microplates and incorporated changes w.r.t Western North America and central Asia.
- The study along with new maps and models will help in better understanding of distribution of earthquakes and volcanoes, mineral distribution and evolution of the earth.

STATE OF ENVIRONMENT REPORT 2022

Centre for Science and Environment (CSE) recently informed that 75% of river monitoring stations report heavy metal pollution.

About the State of Environment Report 2022:

- It is released by the environmental NGO, the Centre for Science and Environment (CSE).
- It is an annual compendium of environment-development data.
- It is derived and compiled from public sources.

Key Findings of the report:

- **Overall river pollution:**
 - ♦ 75% of the river monitoring stations in India reported surprisingly high levels of heavy toxic metals such as lead, iron, nickel, cadmium, arsenic, chromium and copper.
 - ♦ 25% of the monitoring stations spread across 117 rivers and tributaries reported high levels of two or more toxic metals.
- **Ganga pollution:**
 - ♦ 10 out of the 33 monitoring stations in Ganga reported high levels of contaminants.
 - ♦ Even after Centre's focussed Namami Gange mission, the river has high levels of lead, iron, nickel, cadmium and arsenic.
- **Central Water Commission (CWC) data:**
 - ♦ India has 764 river quality monitoring stations across 28 states.
 - ♦ Between August 2018 and December, the CWC has tested water samples from 688 out of all stations for heavy metals.
 - ♦ Of the 588 water quality stations monitored for pollution, total coliform and biochemical oxygen demand were high in 239 and 88 stations across 21 States.
 - ♦ This indicates poor wastewater treatment from industry, agriculture and domestic households.
- **Central Pollution Control Board Data (CPCB):** mentions that
 - ♦ India dumps 72% of its sewage waste without any treatment.
 - ♦ Ten States do not treat their sewage at all.

CSE report on coastline erosion:

- India's coastline is spread across 6,907 km.
- **Between 1990 and 2018:** over 1/3rd of the coastline has faced some degree of erosion. With over 60% of its shoreline erosion, West Bengal is the worst hit.

- **Reasons for coastal erosion:** These are increase in frequency of cyclones, sea level rise, anthropogenic activities like construction of harbors, beach mining and building of dams.

OTHER REPORTS/FINDINGS ON COASTLINE EROSION

- **Ministry of Earth Science (MoES)**
 - ♦ Of the 6,907.18 km long Indian coastline of the mainland, about 34% is under varying degrees of erosion, while 26% of the coastline is of an accreting nature, and the remaining 40% is in a stable state.
 - ♦ Rate of coastline erosion as a percentage of total state coastline in descending order: West Bengal (60.5%), Kerala (46.4%), Tamil Nadu (42.7%), Gujrat (27.06%).
 - In the Union Territory of Puducherry, 56.2% of its coastline reported erosion.
- **The National Centre for Coastal Research (NCCR), Chennai,** an attached office of the Ministry of Earth Sciences (MoES) has been monitoring shoreline erosion since 1990 using remote sensing data and GIS mapping techniques.
- **The Indian National Centre for Ocean Information Services (INCOIS):**
 - ♦ An organization under MoES, has prepared and published an atlas of Coastal Vulnerability Index (CVI) maps for the entire coastline of India at a 1:100000 scale.
 - ♦ For CVI, it used data on sea level rise, coastal slope, shoreline change rate, coastal elevation, coastal geomorphology, tidal range and significant wave height.
- **Mitigation Measures:**
 - ♦ As per the recommendations of the 14th Finance Commission, MoES expects:
 - The National Disaster Management Authority (NDMA) and/or Ministry of Home Affairs to develop suitable norms for mitigation measures to prevent erosion.
 - Also, both the Union and the State Governments should develop a policy to deal with the extensive displacement of people caused by coastal and riverine erosion.

CSE report on ocean health:

- **The Ocean Health Index:** It is a measure that tracks how sustainably humans are exploiting ocean resources.

- Between 2012 and 2021, the global average has improved in the index.
- However, in the same period India's score has declined significantly. This is because India's per-capita generation of plastic waste has almost doubled in the past five years.
 - India is generating about 3.5 million tonnes of plastic waste each year.
- Factors disturbing ocean health:**
 - Anthropogenic sources of pollution.
 - Use of pesticides, microplastics.
 - Mercury accumulation in tuna.
 - Large scale toxic sewage outfall
 - Oil spills.
 - Industrial overfishing and illegal fishing.
 - Global climate change.

WORLD OCEANS DAY: JUNE 8

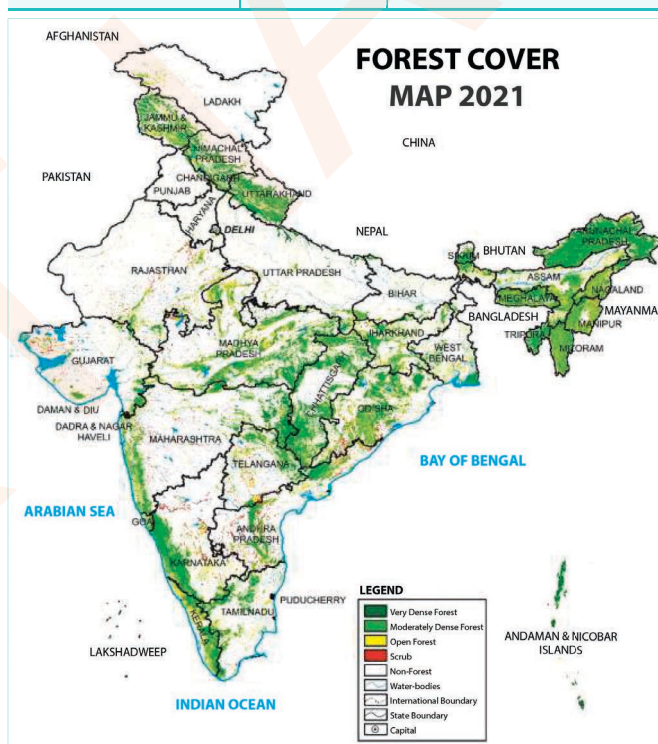
- The United Nations (UN) observes World Oceans Day on June 8 every year to shed light on the ideas and solutions that can protect and revitalize the oceans and everything they sustain.
- The theme for World Oceans Day, 2022, is Revitalization: Collective Action for the Ocean.
- Oceans cover a third of the Earth: They connect, sustain, and support humanity.
- Plastic Waste:** Plastic waste emissions into aquatic ecosystems is likely to triple by 2040. Each year, 14 million tonne plastic enters the ocean from land.

CSE report on forest cover

- Between 2017 and 2021, India's total forest cover has increased by over 0.5%.
 - The open forest category:** It registered the increase which includes commercial plantations.
 - Moderately dense forests:** These are normally the area closest to human habitations, registered decline.
 - Very dense forests:** They absorb maximum carbon dioxide from the atmosphere, occupying just 3% of total forest cover.
- India has a total forest cover of 77.53 million hectares. However, recorded forests (the area under the forest department) with forest cover are only 51.66 million.
 - This significant gap of 25.87 million hectares remains unaccounted, which is approximately the size bigger than Uttar Pradesh.
- Deforestation and Wildfires:** In the last two decades, India has lost 19% of its total tree cover. While 2.8% of forests were cut due to deforestation, wildfires contributed to much of the loss affecting more than 18,000 sq km of forest area every area.

FOREST COVER OF INDIA

Class	Area	Percentage of Geographical Area
Very Dense Forest	99,779	3.04
Moderately Dense Forest	3,06,890	9.33
Open Forest	3,07,120	9.34
Total Forest Cover	7,13,789	21.71
Scrub	46,539	1.42
Non-Forest	25,27,141	76.87
Total Geographical Area	32,87,469	100.00



Steps taken by Government of India:

- To address water pollution:**
 - Preparation of action plan for sewage management and restoration of water quality in aquatic resources by State Governments.
 - Installation of Online Effluent Monitoring System to check the discharge of effluent directly into the rivers and water bodies.
 - Setting up a monitoring network for assessment of water quality.
 - Action to comply with effluent standards is taken by State Pollution Control Boards (SPCBs) to improve the water quality of the rivers.

- ♦ Financial assistance for installation of Common Effluent Treatment Plants for clusters of Small Scale Industrial units.
- ♦ Issuance of directions for implementation of Zero Liquid Discharge;
- ♦ Issuance of directions under Section 5 of Environment (Protection) Act, 1986 to industries and under Section 18(1)(b) of Water (Prevention and Control of Pollution) Act, 1974.
- ♦ Implementation of an integrated scheme of National Plan for conservation of Aquatic Ecosystems (NPCA) to undertake various conservation activities:
 - Interception
 - Diversion and treatment of wastewater
 - Pollution abatement
 - Lake beautification
 - Biodiversity conservation
 - Education and awareness creation
 - Community participation
- **To address coastal erosion:**
 - ♦ **Integrated Flood Warning System (I-Flows):** MoES has developed it for two coastal cities: Chennai and Mumbai, to disseminate information to the state government through IMD, on flood vulnerability in the event of heavy rains.
 - ♦ **The National Centre for Coastal Research (NCCR):** It has been making the information on shoreline vulnerability due to erosion available to all coastal states, for devising the appropriate mitigating measures to protect the coastline.
 - ♦ **The Ministry of Earth Sciences (MoES)** had successfully demonstrated the coastal erosion mitigation measures at Puducherry and Kadalur Periyakuppam village in Tamil Nadu.
- **To prevent forest degradation:** The conservation and development of forest primarily involves three strategies – afforestation through natural/artificial regeneration, protection and management.
 - ♦ The Ministry of Environment Forest and Climate Change (MoEF&CC) is implementing three major schemes for development of forest areas:
 - **National Afforestation Programme (NAP) scheme:** It is implemented for afforestation of degraded forest lands.
 - **National Mission for a Green India (GIM):** It aims at improving the quality of forest and increase in forest cover besides cross sectoral activities on a landscape basis.
 - **Forest Fire Prevention & Management Scheme (FFPM):** It takes care of forest fire prevention and management measures.
- **States Working Plan:** For scientific management of forests, the States prepare a management plan which highlights various activities to be undertaken in a forest division for effective management of forest. It is approved by the MoEF&CC.
- **Compensatory Afforestation Fund Management and Planning Authority (CAMPA):** The funds collected under CAMPA, as compensatory levies from states, is also used in plantation activity including compensatory afforestation by States/UTs.

Way Forward:

- Latest IPCC report published in 2022 has warned that it is “now or never” to limit global warming to 1.5 degree celsius. All the environmental challenges-pollution, forest degradation, biodiversity threat etc. are scientifically linked to the issue of climate change.
- The Government of India must step up its efforts to mitigate the climate crisis through monitorable sectoral action plans, enhanced funding, technological solutions and community mobilization.

“

The Gist

The State of Environment Report 2022 was recently released by an environmental NGO, the Centre for Science and Environment (CSE). It says:

- 75% of river monitoring stations reported heavy metal pollution.
- Over 1/3rd of the coastline faced some degree of erosion due to various anthropogenic activities and natural factors.
- Between 2012 and 2021, the global average has improved in the Ocean Health Index, while India's score declined significantly.
- Between 2017 and 2021, India's total forest cover has increased by over 0.5%.

UNICORN STARTUPS

Recently, the Prime Minister of India highlighted that India has reached a landmark figure of 100 unicorns with a valuation of more than \$300 billion.

About:

- Unicorns are privately held startups with venture-capital investment and a valuation of \$1 billion.
- The valuation of unicorns is not solely linked to their current financial performance.
- Investors and venture capitalists participating in funding of the startups largely decide valuation based on their growth potential.
- Faster emergence of more unicorns is happening because of a convergence of private and market funding.

GENESIS OF THE TERM UNICORN

- American venture capitalist Aileen Lee coined the term in 2013. She used it to emphasize the rarity of the emergence of such startups.
- **'Unicorn Club' definition (then):** US-based software companies started since 2003 and valued at over \$1 billion by public or private market investors.

India's unicorn record:

- **NASSCOM Report:** As per the report, India is the third-largest ecosystem in the world having more than 9000 startups. It also said that the startup ecosystem is setting itself for sustained growth.
- **Prime Minister of India** in a recent radio address informed that:
 - ♦ In 2021, a record 44 unicorns were established in India even during the pandemic.
 - ♦ In 2022, 14 more unicorns were formed anew in last few months.
 - ♦ Indian startups have been creating wealth and value even during the global pandemic.
- **Invest India:** It is the government's National Investment Promotion and Facilitation Agency. According to it:
 - ♦ Number of Indian unicorns increased rapidly in last 3 years i.e. 2021, 2020, and 2019 witnessed 44, 11, and 7 unicorns respectively.
 - ♦ **Between 2015 and 2021:** India's startup ecosystem showed a nine-time increase in the number of investors. There was also a seven-fold increase in the total funding of startups.
 - ♦ A company with a valuation of more than USD10 billion is decacorn. India is gradually transitioning from the age of unicorns to the age of decacorns.

- ♦ Till now, over 47 companies have achieved the decacorn status worldwide. Out of which, India has four startups namely, Flipkart, BYJU's, Nykaa and Swiggy.

Important traits of a unicorn startup:

Though every unicorn startup has different business ideas and models, following are some common features of all the unicorns:

- **Privately owned:** Startups with private ownership have a better chance to attain a unicorn status. It is true as the company valuation grows when they receive funding from the established domestic and global investors. E.g. Flipkart
- **Tech-savvy:** Stronger technological base lies at the heart of every unicorn's business model. It allows them to offer reliable products and services to both customers and businesses. E.g. PayTM
- **Niche pioneers:** Development of niche products and services allow the startups to get an edge over the competition and grow business by venturing into the field unknown to the target audience before. E.g. Swiggy
- **Innovation based:** Most of the unicorns have led to the disruption of the industry with constant need and ability to innovate in respective areas of operation. E.g. Dream 11
- **Growth driven:** Unicorns build a Minimum Viable Product (MVP) around their business ideas and then test, modify and scale it up towards business expansion and sustainable growth. Eg. Byju's

Reasons for the rapid growth of unicorns in India:

- **Technological access:** A supportive startup ecosystem in place and the rising number of smartphone users in India has allowed startups to offer technology based services and solutions to tech-savvy customers.
- **No Initial Public Offerings (IPOs):** Since startups are at risk of devaluation in the public market through IPOs, they go through funding rounds to raise the capital and increase their valuation.
- **Get Big Fast Strategy (GBF):** Many Venture Capitalists and investors adopted the GBF strategy to grow fast with large funding rounds and price cutting to dominate the market competition. This strategy gives favorable returns to all the stakeholders-founders, investors and customers.
- **Company buyouts:** Many startups attained the unicorn status after buyouts from large public companies which focus on the acquisitions to boost their business than internal investment.

Steps taken by the government of India to promote startups:

- **Ministry of Skill Development and Entrepreneurship:** In 2014, the Prime Minister of India dedicated an entire ministry for entrepreneurship development as skill development needed a push from the government's side.
- **eBiz portal:** Found in 2013, eBiz was the first electronic government-to-business (G2B) portal. Key purpose of this portal was to transform and develop a conducive business environment in India. It was developed by Infosys in a public-private partnership model. It was designed as a communication center for investors and business communities in India.
- **Atal Innovation Mission:** It was launched to create a promotional platform with academicians and draw upon national and international experiences to foster a culture of innovation, research, and development in India.
- **Modified Special Incentive Package Scheme (M-SIPS):** This scheme was designed to promote large-scale manufacturing in the Electronic System Design and Manufacturing (ESDM) sector.
 - ♦ Under M-SIPS, the government of India provides a subsidy of 20% on capital investments in special economic zones (SEZs) and 25% on capital investments in non-SEZs for individual companies.
- **Atmanirbhar Bharat App Innovation Challenge:** It was launched under the Digital India mission by the collaboration of the Ministry of Electronics and Information technology (MeitY) with the Atal Innovation Mission which is an initiative of NITI Aayog. Under it, the Prime Minister (PM) had urged the startups to develop Made in India applications beneficial to people in India and the world.
- **SAMRIDH Scheme:** MeitY had launched the SAMRIDH scheme, which stands for Startup Accelerators of MeitY for product Innovation, development and growth. It is designed to provide funding support to the startups enabling their skill development and growth.
- **Startup India Initiative:** It was launched in 2016 to increase wealth and employability by promoting entrepreneurial spirit. Under this scheme, the government gives tax benefits to startups and it has helped to identify around 50,000 startups in a period of 5 years. The Department for Promotion of Industry and Internal trade (DPIIT) is maintaining this long term initiative.
- **Startup India Seed Fund:** In 2021, PM launched this fund worth Rs. 1000 crores to help startups and support ideas from aspiring entrepreneurs. It was aimed to avoid capital shortage for the startups.
- **Pradhan Mantri Mudra Yojana:** Under this, Micro Units Development Refinance Agency (MUDRA) banks have been created to enhance credit facilities and boost the growth of small businesses in rural areas. The government had allocated Rs. 10,000 crore in 2015 to promote startup culture in India. The MUDRA banks provide startup loans up to Rs. 10 lakhs to small enterprises, businesses which are non-corporate, non-farm, small/micro-enterprises.
- **Support for International Patent Protection in Electronics & Information Technology (SIP-EIT):** The Department of Electronics and Information Technology (DeiTY) has launched this scheme. It provides financial support to MSMEs and Technology Startups for international patent filing.
- **Software Technology Park (STP):** This is a totally export-oriented scheme for the development and export of computer software. It also includes the export of professional services using communication links or media.
 - ♦ It integrates the government concept of 100% Export Oriented Units (EOU), Export Processing Zones (EPZ) and the concept of Science Parks or Technology Parks.
- **Stand Up India Scheme:** It is a scheme for financing SC/ST and/or women entrepreneurs. Under it, bank loans between 10 lakhs to 1 crore can be borrowed by at least one Scheduled Cast (SC) or Scheduled Tribe (ST) borrower and at least one woman per bank to set up a greenfield enterprise. Such an enterprise may be based out of manufacturing, services or the trading sector.
- **High Risk-High Reward Research:** It is launched by the government to support and invite new proposals and ideas having the potential of paradigm shifting influence on the Science and Technology domains in India.
- **IREDA-NCEF Refinance Scheme:** It was launched to revive the operations of existing biomass power and other small hydro power projects, which were stalled earlier. Indian Renewable Energy Development Agency Ltd. (IREDA) and The National Clean Energy Fund (NCEF) are collaborating for the implementation of this scheme.

Way Forward:

- India is poised to have 75-100 unicorns by 2025. Sectors like eCommerce and fintech had a maximum number of unicorns initially, it has now been diversified. Today, India is witnessing the emergence of unicorns in spheres such as social networks, data analytics, logistics technology, education technology etc. The government of India needs to have a clear roadmap to facilitate such emergence of unicorns and facilitate their expansion to attain the status of decacorns.

RIGHTS OF GIG WORKERS

The Union Labour Ministry recently organised a programme aimed towards realising the rights and social security of gig and platform workers.

About:

- **Objective:** The programme is aimed at sharing information and good experiences on policies and global practices relating to gig and platform workers and their social security.
- **Organiser:** V.V. Giri Institute, under the Union Labour Ministry.
- **Stakeholders:** The Union Government, State Governments, Trade Unions and Employers' Organisations.

Reasons for holding the Session:

- To train officials of Central and State Governments regarding technological change, new forms of employment, working conditions.
- Evolving mechanisms to protect labour and social security rights of these workers.
- For brainstorming, sharing information and good experiences on policies and global practices, innovative policy responses relating to gig and platform workers and their social security.
- To discuss the mechanisms to be evolved on the proposed Social Security Fund for unorganised workers, gig workers and platform workers.
- For the disbursement of social security funds to registered gig and platform workers and mechanism of registration to these platform workers via e-Shram portal.

Concerns of Gig Workers:

- Lack of job and social security among gig and platform workers.
- Lower wage levels than regular counterparts.
 - ♦ Gig and platform workers employed with many new platforms had been protesting and striking work demanding proper wages.
- Undefined employer-employee relationship in the context of gig and platform economy.
- Workers' employment relationships are not recognised in law in the case of the gig economy.
 - ♦ They are largely excluded from labour and social security rights, both in terms of law and in practice.

About Gig Economy:

- The gig economy is characterised by flexible jobs of short term nature that are offered by organisations to autonomous contractors and freelancers rather than traditional, full-time employees. Examples: Ola, Uber, Swiggy etc.
- **Gig Workers**
 - ♦ Gig worker is one who performs work or participates in a work arrangement and earns from such activities outside of the traditional employer-employee relationship.
- **Platform Workers:**
 - ♦ The term platform worker in general means a worker working for an organization which provides specific services using online platform directly to individuals or organizations.
- **Benefits to Employer**
 - ♦ Organisations save money on recruitment, other benefits which they otherwise pay to regular employees and payroll expenses.
 - ♦ It also entails an easy 'hire and fire' policy for organisations.
- **Benefits to Gig Workers**
 - ♦ It gives gig workers the ability to earn income from multiple sources.
 - ♦ It provides a flexible work schedule.
- **Reason for Growth of Gig Economy**
 - ♦ The rise of the gig economy is driven by the emergence of tech-enabled platforms, demand for flexible work arrangements and focus on skills.
 - ♦ The pandemic has also seen mushrooming of various platforms giving a boost to the gig economy.

WORLD INVESTMENT REPORT

India's rank has improved in FDI investments as per World Investment Report.

About:

- India has moved up one notch to be ranked seventh in the United Nations Conference on Trade and Development's (UNCTAD).
- The top 10 economies for FDI inflows were the US, China, Hong Kong, Singapore, Canada, Brazil, India, South Africa, Russia and Mexico.

- The largest number of projects in India were in renewables and construction in India of a steel and cement plant by Arcelormittal Nippon Steel (Japan).
- Other investments included the construction of a new car manufacturing facility by Suzuki Motor (Japan).

UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT'S (UNCTAD)

- **Establishment:** UNCTAD is a permanent intergovernmental body established by the United Nations General Assembly in 1964.
- **Headquarters:** Geneva, Switzerland.
- **Other Offices:** New York and Addis Ababa.
- **Aim:** Working at the national, regional, and global level, our efforts help countries to:
 - ♦ Comprehend options to address macro-level development challenges
 - ♦ Achieve beneficial integration into the international trading system
 - ♦ Diversify economies to make them less dependent on commodities
 - ♦ Limit their exposure to financial volatility and debt
 - ♦ Attract investment and make it more development friendly
 - ♦ Increase access to digital technologies
- **Mandate:** It supports developing countries to access the benefits of a globalized economy more fairly and effectively.
 - ♦ It helps equip them to deal with the potential drawbacks of greater economic integration. To do this, it provides analysis, facilitates consensus-building, and offers technical assistance.
 - ♦ It helps them to use trade, investment, finance, and technology as vehicles for inclusive and sustainable development.
- **Memberships:** UNCTAD is part of the UN Secretariat. It reports to the UN General Assembly and the Economic and Social Council but has its own membership, leadership, and budget. It is also part of the United Nations Development Group.

Key Highlights of the report:

- The report mentioned that the direct effects of the war on investment flows to and from Russia and Ukraine include the halting of existing investment projects and the cancellation of announced projects.
- It mentions that an exodus of multinational enterprises (MNEs) from Russia, and widespread loss of asset values and sanctions virtually precluding outflows.

- The report added that to date, MNEs from China and India account for a negligible share of FDI stock in Russia, although their share in ongoing projects is larger.
- The report said despite successive waves of COVID-19, FDI in developing Asia rose for the third consecutive year to an all-time high, underscoring the resilience of the region.
 - ♦ It is the largest recipient region of FDI in the world, accounting for 40 per cent of global inflows.

About World Investment Report:

- The World Investment Report supports policymakers by monitoring global and regional investment trends and national and international investment policy developments.
 - ♦ It is published annually by UNCTAD.
- **Mandate:** The report reviews investment in the Sustainable Development Goals and in climate change mitigation and adaptation. It also looks at sustainable finance trends in capital markets and among institutional investors.
 - ♦ The key reforms in the coming years can be seen in investment policy especially in Special Economic Zones.
- This year's report provides a guide for policymakers to navigate the complex new tax rules and to adjust with their investment strategies.

LIQUID NANO UREA

Recently, the Prime Minister of India inaugurated India's first liquid nano urea plant in Kalol, Gujarat.

About:

- It is a patented product and is aimed to reduce import of urea.
- It is also intended to produce better results in farms.
- The liquid nano urea is produced by Indian Farmers Fertilizer Cooperative Limited (IFFCO).
- It has been developed at IFFCO's Nano Biotechnology Research Centre (NBRC) in Kalol, Gujarat.

Difference between conventional and liquid nano urea:

- **Subsidy:** Conventional urea is highly subsidized whereas liquid nano urea is not presently.
- **Reasonable price:** Conventional urea costs Rs.300 for a 50 kg bag, whereas a half bottle of liquid nano urea costs Rs.240.
- **Efficiency:** Conventional urea is effective just for 25-30% in delivering nitrogen to plants, the effectiveness of the nano urea liquid is over 80%.

Working Mechanism:

- **Conventional nano urea:** Provides nitrogen to plants artificially.
 - ♦ Often applied incorrectly.

- ♦ Nitrogen in it is either vaporized or lost as a gas.
- ♦ Lot of nitrogen gets washed away during irrigation.
- **Liquid Nano Urea:** Contains 4% nitrogen by volume, comes in the form of a nano-particle.
 - ♦ It is sprayed directly on the leaves of the plants.
 - ♦ It gets absorbed by the plants directly.
 - ♦ 2-4 ml dose with a liter of water to be sprayed at active growth stages of plants.
- **Shelf Life:** Conventional urea has a shelf life of 3-6 months and liquid nano urea up to 1 year.

Significance of liquid nano urea:

- **Reduce India's subsidy bill:** India imports significant quantities of urea to meet its domestic fertilizer requirements.
 - ♦ The huge subsidy bill can be effectively reduced with the widespread adoption of the liquid nano urea.
- **Widely Tested:** As per IFFCO, the liquid nano urea has been tested on more than 90 crops and across 11,000 locations. Thus, it can be widely used across varied agro-climatic regions of India.
- **Impact on usage of urea:** A half-liter bottle of liquid nano urea can effectively replace at least one bag of conventional urea. This will significantly reduce the unbalanced and indiscriminate use of conventional urea.
- **Increase crop productivity:** By restoring nitrogen to plants as an alternative to the conventional urea, it improves the nutritional quality of the crop and thereby enhances the productivity.
- **Reduce soil, water and air pollution:** Incorrect application of the conventional urea resulted into wastage of nitrogen. A lot of nitrogen evaporates into the air and gets washed away during irrigation. It causes decline in the soil fertility, eutrophication in water bodies and air pollution.
 - ♦ However, as liquid nano urea is directly sprayed on leaves and gets absorbed by plants, the scope of pollution is minimized substantially.
 - ♦ It helps in improving groundwater quality and soil health, reducing air pollution and preserving agro-ecological balance.

COOPERATIVES TO HARNESS THE GEM PORTAL

The Union Cabinet has given its approval for expanding the mandate of GeM to allow procurement by Cooperatives as buyers on GeM.

About

- The decision by the Union Cabinet has expanded the scope of the GeM-SPV to allow Cooperative to be the buyers at GeM portal.

- ♦ Prior to the cabinet decision, the platform was open for procurement by only government buyers: central and state ministries, departments, public sector enterprises, autonomous institutions, local bodies.
- The validated list of cooperatives to be onboarded on GeM for pilot as well as subsequent scale up will be decided by the Ministry of Cooperation in consultation with GeM SPV.
 - ♦ This will ensure that technical capacity and logistics requirements of the GeM system are taken into account while deciding the pace of onboarding of Cooperative as buyers on GeM.
- GeM will provide a dedicated onboarding process for cooperatives, technical infrastructure to support additional users on existing portal.
- The Ministry of Cooperation would issue necessary advisories to encourage the Cooperative Societies to make use of the GeM platform for procurement of goods and services.
- **Payment Systems:** To protect interests of the broader seller community on GeM and ensure timely payments, the modalities of payment systems shall be decided by GeM in consultation with the Ministry of Cooperation.

Advantages of the Move

- **Competitive Prices:** The step will help Cooperatives in getting competitive prices via GeM portal.
- **Range of Sellers:** It will also diversify the range of sellers available to the Cooperatives to choose their products from.
- **Open and Transparent Platform:** The GeM would provide Cooperatives, transparency and openness in their procurement process.

Implementation Process

- GeM-SPV will initiate suitable actions involving creation of necessary features and functionalities on the GeM portal.
 - ♦ The move will see upgradation of infrastructure, strengthening of the helpdesk and training ecosystem and onboarding of cooperatives.
- To cover the expenses of the upgradation of the GeM platform and paraphernalia, the GeM-SPV can charge a transactional fee from the Cooperatives.
- **Stakeholders:**
 - ♦ **The Ministry of Cooperation:** It will decide the pace and mechanism of the rollout.
 - ♦ **The Ministry of Commerce and Industry:** It will overlook the overall framework.

About Government e-Marketplace

- It is a one stop portal to facilitate online procurement of common use goods & services required by various government departments/organisations/PSUs.

- It was launched by the Ministry of Commerce and Industry, GoI in 2016.
- Objectives:**
 - The portal aims to enhance transparency, efficiency and speed in public procurement.
 - It provides the tools of e-bidding, reverse e-auction and demand aggregation to facilitate the government users achieve the best value for their money.
- Features of GeM:**
 - Listing of goods and services of common use online.
 - Dynamic pricing for all the listed items.
 - Transparent, efficient, easy, secure and cost-saving of buying goods.
 - Useful for low value buying and also for bulk buying at a competitive price using Reverse Auction/ e-bidding.
 - Vendor rating system.

GeM-SPV

- GeM-SPV is a not for profit company which operates GeM portal to procure goods and services by all government departments and PSUs.
- The body was instituted in 2017 to effectively manage the Gem Portal.
- Prior to GeM-SPV, the Directorate General of Supplies and Disposal (DGS&D), under the Commerce Ministry, used to operate GeM.

SPECIAL PURPOSE VEHICLE

- It is a separate legal entity created by a parent company with the aim of securitising assets so as to isolate the parent company from financial risks.
- This SPV is a distinct, independent company with its own legal status and an asset/liability structure and autonomous balance sheet.

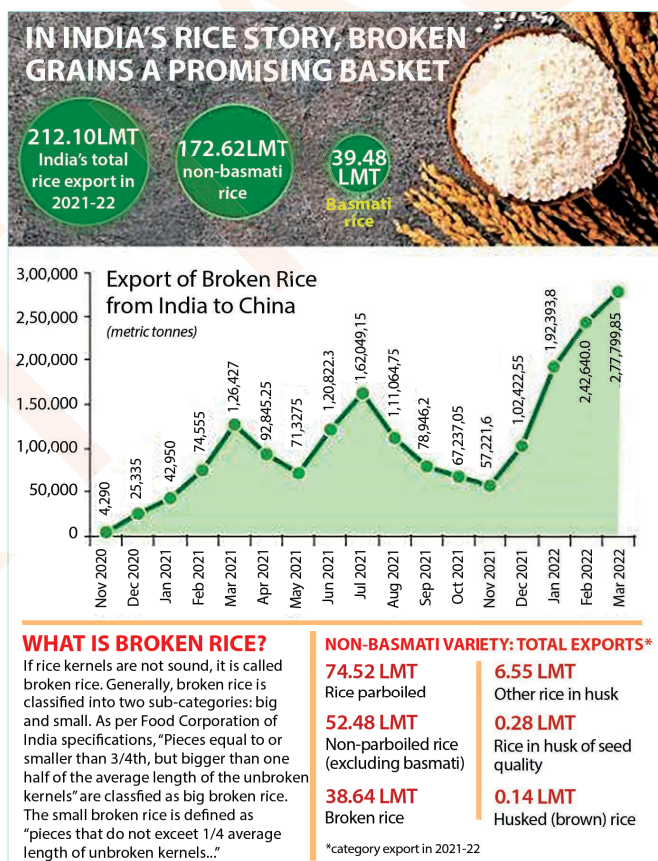
CHINA: LARGEST IMPORTER OF INDIAN BROKEN RICE

China has become the top buyer of Indian broken rice which was earlier exported primarily to African countries.

Reasons for China becoming Top Buyer of Indian Rice:

- For food security during pandemic:** To stock enough foodgrain for food security of its populace, China imported rice from India.
 - China Imported 16.34 lakh metric tonnes (LMT) or 7.7 per cent of India's total rice export of 212.10 LMT in the financial year 2021-22.

- Out of total imports, around 97 percent comprised broken rice totalling 15.76 LMT.
- To insure itself against price spike:** China took this step to make itself immune from global surge in food prices due to Russia-Ukraine conflict.
 - Rice exports to China jumped by 392.20 per cent: from 3.31 LMT to 16.34 LMT between 2020-21 to 2021-22.
- Rising price of corn:** Surge in the prices of corn has been cited as another reason to look for an alternative foodgrain in the international market.
- For noodles and wine:** Higher demand for broken rice also came for making noodles and wine in China.



Rice Production and Exports from India:

- India is the second largest producer and largest importer of rice in the world.
- Total production:** India recorded a production of roughly 127.93 million metric tonnes (MMT) of rice in the year 2021-22 vis-a-vis 122 MMT in 2020-21.
- Total rice exports in 2021-22:** Exports of both basmati and non-basmati rice was 212.10 Lakh Metric Tonnes (LMT), which is 19.30 percent higher than 177.79 LMT exported in 2020-21.
 - Of India's total rice export, basmati rice accounted for 39.48 LMT, which was 14.73 per cent lower than 46.30 LMT exported in 2020-21.

- ♦ Non-basmati rice accounts for the lion's share in the basket of Indian rice exports which was 172.62 LMT, 31.27 per cent higher than 131.49 LMT in 2020-21.
- **Broken Rice:** During 2021-22, India exported 38.64 LMT of broken rice to 83 countries.
 - ♦ Maximum 15.76 LMT was procured by China, 476.40-per cent up from 2.73 LMT in 2020-21.
- **Major rice importing nations from India:** Major Basmati importing nations are Saudi Arabia, Iran, UAE, Iraq, Kuwait, U.K, USA, Yemen Republic, Oman, Canada.
 - ♦ **Major non-Basmati importing nations:** China, Nepal, Benin, Senegal, Bangladesh, Guinea.

OPEN NETWORK FOR DIGITAL COMMERCE (ONDC)

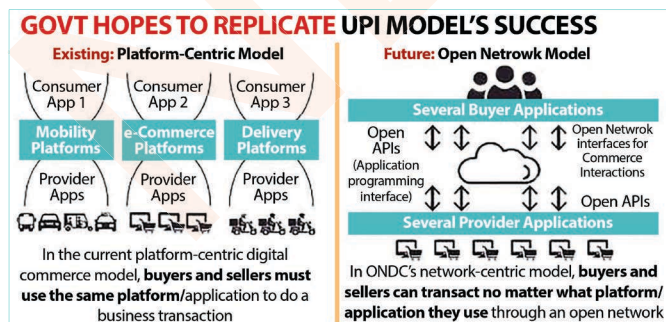
Recently, the Government of India has announced the launch of the pilot phase of Open Network for Digital Commerce (ONDC) in five cities.

About:

- ONDC was launched to “democratize” India’s fast growing digital e-commerce space, presently dominated by Amazon and Walmart (Headquartered in the U.S.).
- The Commerce and Industry Minister had announced the ONDC launch, after UPI, ONDC is the new game changing idea to democratise commerce.
- ONDC will enable the selection of consumers, sellers and logistics providers and foster the element of choice, convenience and transparency.

Open Network for Digital Commerce (ONDC)

- ONDC is a not-for-profit organization that will offer a network to enable local digital commerce stores across industries to be discovered and engaged by any network enabled applications.



- **Concept:** It is not an aggregator application or a hosting platform. Therefore, all existing digital commerce applications and platforms can voluntarily adopt and be a part of the ONDC network.

- **Objective:** The ONDC aims to enable a single platform based purchase of various products by consumers from all participating e-commerce platforms.
- **Utility:** Under ONDC, a buyer registered on one participating e-commerce site (say, Amazon) will have a choice to buy goods from a seller on another participating ecommerce site (say, Flipkart).
- **ONDC Model:** It is trying to replicate the success of the Unified Payments Interface (UPI) in the field of digital payments.
 - ♦ UPI enables people registered on any payment platform to send or receive money.
- **Application:** The concept of open network extends way beyond the retail sector. It can be made applicable to any digital commerce domains such as wholesale, mobility, food delivery, logistics, travel, urban services etc.

Factors leading to formation of ONDC:

- **The Department for Promotion of Industry and Internal Trade (DPIIT) Outreach:** During the COVID19 pandemic outbreak, the DPIIT under Ministry of Commerce and Industries had conducted an outreach programme to understand the impact of pandemic on the functioning of small sellers and hyperlocal supply chain.
- **Findings of DPIIT:** There was a substantial gap between the online demand scale and the local retail ecosystem's participation ability.
- **Consultations:** As per the strategy paper several consultations were held with multiple ministries and industry experts and as a result ONDC was envisioned to revolutionize digital commerce in India.
- **Independence:** ONDC was further envisaged as an entity with the ability to work autonomously and without daily guidance and advisory from the shareholders/members.
- **Financial Model:** Financial independence of the ONDC will decide the independence of the management. Thus it will need to get independent funding and thus operate with a self-sustaining financial model.

Current status of the ONDC:

- Currently, ONDC is launched as a pilot project in 5 cities with a target to onboard about 150 retailers. Those 5 cities are: Delhi NCR, Bengaluru, Bhopal, Shillong and Coimbatore.
- To analyze the ONDC's potential as a concept and to advise the government on measures needed to accelerate its adoption, the government has constituted an advisory council.
- Members of the advisory council include:
 - ♦ Non Executive Chairman of Infosys;
 - ♦ CEO of National Health Authority;
 - ♦ Managing Director and CEO of National Payments Corporation of India (NPCI);

- ♦ Head of Digital India Foundation;
- ♦ CEO of Retailers Association of India;
- ♦ Chairman of Quality Council of India and Capacity Building Commission
- ♦ Additional Secretary of the Department for Promotion of Industry and Internal Trade.

Potential benefits of ONDC:

- In the next 5 years, the ONDC aims to bring on board 90 crore users and 12 lakh sellers on its network.
- It also plans to enable 730 crore additional purchases and an additional gross merchandising value (GMV) of 3.75 lakh crore.
 - ♦ In 2020, the GMV for the digital commerce retail market in India was 2.85 lakh crore (\$38 billion).
 - ♦ It is just 4.3% of the total retail GMV in India, indicating the scope of scaling up in operations and reach of digital commerce in India.
- The ONDC is expected to standardize operations in the digital commerce industry such as cataloging, inventory management, order management and order fulfillment.
- Thus, the ONDC will make it simpler for small businesses to be discoverable over the network and easier to conduct business.

Potential challenges for ONDCs:

- The ONDCs will find it difficult to attract a sufficient number of e-commerce platforms who sign up.
- Experts have also pointed out the possibility of customer service and payment integration related issues.

PLFS REPORT 2020-21

The Periodic Labor Force Survey (PLFS) 2020-21 reported that the unemployment rate in India has reduced to 4.2%.

About:

- As per the data released in the annual periodic labor force survey, unemployment rate in India slowed down to 4.2% in 2020-21 from earlier 4.8% in 2019-20.
- Reasons for this positive development are improvements in the labor force participation rate (LFPR) and the worker participation rate (WPR).
- The improvement in the unemployment scenario was seen in the background of COVID-19 pandemic and the lockdowns which had hurt the Indian economy.
- **Indian Labour Force:** It is officially classified in 3 categories
 - ♦ **Rural Sector:** includes farm labor.

- ♦ **Urban Formal Sector:** Includes factory and service sector employment.
- ♦ **Urban Informal Sector:** Includes self employed and casual wage workers.

The Periodic Labor Force Survey (PLFS) 2020-21

- It is released annually for both the urban and the rural areas.
- This report covered the period July 2020 to June 2021.
- It was launched by the National Statistical Office (NSO) to estimate the employment and the unemployment indicators in the short time interval of 3 months in the urban areas in the current weekly status (CWS) only.
- Indicators used by PLFS report were:
 - ♦ **Worker Population Ratio (WPR):** It is the ratio of the number of employed people per thousand people.
 - ♦ **Labor Force Participation Rate (LFPR):** It is the part of the labor force (15 to 59 years) presently employed or looking for employment.
 - ♦ **Unemployment Rate (UR):** It is the ratio of unemployed persons in the labor force to the total labor force.
- **NSO** surveys use 3 different indicators to assess the state of employment or unemployment in the economy based on individual activities during reference periods of a day, a week or a year.
 - ♦ **Usual Activity Status (US):** Under it a person spends relatively longer time during the year (365 days) preceding the survey.
 - ♦ **Current Weekly Activity Status (CWS):** Under it, a person is said to be unemployed if he/she was available for at least 1 hour of work of any day during the reference week but did not work even 1 hour during the same period.
 - ♦ **Current Daily Activity Status (CDS):** Under it, a person's activity status is determined based on each day of the reference week.

Key findings of the PLFS report 2020-21

- The unemployment rate (UE) has been reducing consistently since the first annual PLFS was conducted in 2017-18, when UR was 6.1%.
- Two waves of COVID-19 had compelled the suspension of the fieldwork for the PLFS, which was resumed after the lockdowns were lifted.
- According to the information gathered by PLFS and private surveys, it was evident that lockdowns had caused economic slowdown and resultantly job losses.
- In rural areas, the unemployment rate was higher for males (3.9%) than their female counterparts (2.1%).
- In urban areas, the unemployment rate was higher for females (8.6%) than their male counterparts (6.1%).

SIPRI YEARBOOK 2022

The Stockholm International Peace Research Institute (SIPRI) recently stated that the global nuclear arsenal is expected to increase over the coming decade.

About:

- SIPRI has launched the findings of SIPRI Yearbook 2022 which assesses the current state of armaments, disarmament and international security.
 - The yearbook assesses the current state of armaments, disarmament and international security.

Key Highlights of the Yearbook:

- The total number of nuclear weapons has declined slightly between January 2021 and January 2022 around the globe.
- At the start of 2022, nine nuclear states possessed an estimated 12705 nuclear weapons.
 - There are currently nine nuclear-armed states namely the United States, Russia, the United Kingdom, France, China, India, Pakistan, Israel and the Democratic People's Republic of Korea (North Korea).
- All of the nuclear-armed states are increasing or upgrading their arsenals and most are sharpening nuclear rhetoric and the role nuclear weapons play in their military strategies which presents a very worrying trend.
- Russia and the USA together possess over 90 per cent of all nuclear weapons.

- Out of 12705 weapons, 9440 were in military stockpiles for potential use and 3732 warheads were deployed with missiles and aircraft.
- Around 2000 (nearly all of which belonged to Russia or the USA) were kept in a state of high operational alert.
- All the 9 nuclear-armed states continue to modernize their nuclear arsenals and hence the number of nuclear weapons will probably increase in the next decade.
- India and Pakistan make statements about some of their missile tests but provide no information about the status or size of their arsenals.

Some country-specific Findings:

- INDIA**
 - India introduced and continued to develop new types of nuclear delivery systems in 2021.
 - From January 2021 to January 2022, India's nuclear stockpile has increased from 156 to 160.
- CHINA**
 - China's total inventory is the same from January 2021 to January 2022.
 - China had 350 nuclear warheads in January 2021 as well as January 2022.
 - However, the number of stockpiled warheads potentially available for use has increased because of the operationalization of new launchers.
 - Satellite images indicate that China is constructing more than 300 new missile silos or Missile launch facilities.

STATUS OF WORLD NUCLEAR FORCES 2022

Country	Deployed warheads ^a	Stored warheads ^b	Total Stockpile ^b	Total inventory 2022 ^b	Total inventory 2021 ^b
United States	1744	1964	3708	5428	5550
Russia	1588	2889	4477	5977	6255
United Kingdom	120 ^e	60 ^f	180 ⁱ	225 ⁱ	225
France	280	10	290	290	290
China		350 ^g	350 ^g	350 ^g	350
India		160	160	160	156
Pakistan		165	165	165	165
Israel		90	90	90	90
North Korea		20 ^h	20 ^h	20 ^h	[40-50] ^h
Total	3750	5708	9440	12705	13080



- **Pakistan**

- ♦ Pakistan's nuclear stockpile has remained at 165 in January 2021 and January 2022.
- ♦ Pakistan has also introduced and continues to develop new types of nuclear delivery systems.

STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE (SIPRI)

- **Nature:** SIPRI is an independent international institute that provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.
 - ♦ It is Dedicated to research into conflict, armaments, arms control and disarmament.
- **Established** in 1966
- **Headquarters:** Stockholm
- **Vision:** SIPRI's vision is a world in which sources of insecurity are identified and understood, conflicts are prevented or resolved, and peace is sustained.
- **Mission:**
 - ♦ undertake research and activities on security, conflict and peace;
 - ♦ provide policy analysis and recommendations;
 - ♦ facilitate dialogue and build capacities;
 - ♦ promote transparency and accountability; and
 - ♦ deliver authoritative information to global audiences.

INDIA AND OCI

India rejected the statement by the General Secretariat of the Organisation of Islamic Cooperation (OIC).

About:

- The OCI had made the statements regarding objectionable and communal statements on Prophet Mohammad and Islam by some political personalities in India.
- India subsequently made a special effort at ensuring that Indian Ambassadors based in every OIC country were briefed and sent "talking points" to deal with the tense situation.
- The OIC had also raised concerns about the systematic harassment of minorities in India.

The Organisation of Islamic Cooperation (OIC):

- **Nature:** OIC is the second-largest organisation after the United Nations with a membership of 57 states spread over four continents.
 - ♦ The OIC was known as the Organisation of the Islamic Conference until 2011.
- **Mandate:** OIC is the collective voice of the Muslim world and

endeavours to safeguard and protect the interests of the Muslim world in the spirit of promoting international peace and harmony among various people of the world.

- ♦ The OIC has reserved its membership for Muslim-majority countries and describes itself as "the collective voice of the Muslim world".
- **Establishment:** The Organisation was established after the 1969 summit in Rabat, Kingdom of Morocco.
 - ♦ The first OIC Charter was adopted by the 3rd Islamic Conference of Foreign Minister (ICFM) Session held in 1972.
- **Headquarters:** Jeddah, Kingdom of Saudi Arabia.
- **Working:** The General Secretariat is the OIC's executive organ and is entrusted with implementing the decisions of the OIC decision-making bodies.
 - ♦ It is led by the Secretary-General. The General Secretariat is composed of several departments that enhance the day-to-day operations of the OIC.
- The Central African Republic, Russia, Thailand, Bosnia & Herzegovina, and the unrecognised Turkish Cypriot "state" have Observer status.

The OIC and India:

- India has the world's second-largest Muslim community where more than 10 per cent of the world's Muslim population lives.
- India had been invited to the founding conference at Rabat in 1969.
- But the candidature of India was rejected at Pakistan's behest and then Agriculture Minister was dis-invited upon arrival in Morocco.
- Saudi Arabia invited New Delhi to join as an Observer in 2006, but India stayed away due to the religious based identity of OIC.
- At the 45th session of the Foreign Ministers' Summit in May 2018, host country Bangladesh suggested that India should be given Observer status. But Pakistan opposed the proposal.
- In 2019 the then-Indian Foreign Minister addressed the Inaugural Plenary of the 46th Session of the OIC Council of Foreign Ministers in Abu Dhabi as the "Guest of Honour".

FINANCIAL ACTION TASK FORCE

The Financial Action Task Force (FATF), is expected to decide on the removal of Pakistan from the 'grey' list.

About:

- Pakistan has been on the grey list of the FATF since 2018 for failing to check money laundering, leading to terror financing.

- Pakistan needs the votes of Turkey, China, and Malaysia to get off the list.
 - ♦ The three countries have assured Pakistan of full support for the purpose.
- With Pakistan's continuation on the grey list, it is increasingly becoming difficult for it to get financial aid from the IMF, the World Bank, the Asian Development Bank (ADB) and the European Union, thus further enhancing problems for the country.

About Financial Action Task Force (FATF):

- **Establishment:** The FATF is an inter-governmental body established in 1989.
- **Aim:** To combat money laundering, terrorist financing and other related threats to the integrity of the international financial system.
- **Mandate:** The Financial Action Task Force (FATF) is the global money laundering and terrorist financing watchdog.
- **Functions:** The inter-governmental body sets international standards that aim to prevent these illegal activities and the harm they cause to society.
 - ♦ As a policy-making body, the FATF works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas.
- The FATF reviews money laundering and terrorist financing techniques and continuously strengthens its standards to address new risks, such as the regulation of virtual assets, which have spread as cryptocurrencies gain popularity.
- The FATF monitors countries to ensure they implement the FATF Standards fully and effectively, and holds countries to account that do not comply.
- **Members:** The FATF currently has 39 members including two regional organisations the European Commission and Gulf Cooperation Council. India is a member of the FATF consultations and its Asia Pacific Group.
- **Lists:** FATF has 2 types of lists namely
 - ♦ **Black List:** Countries known as Non-Cooperative Countries or Territories (NCCTs) are put in the blacklist. These countries support terror funding and money laundering activities. The FATF revises the blacklist regularly, adding or deleting entries.
 - ♦ **Grey List:** Countries that are considered safe haven for supporting terror funding and money laundering are put in the FATF grey list. This inclusion serves as a warning to the country that it may enter the blacklist.
 - ♦ **Consequences of being in the FATF grey list:** When a country is listed on the grey list by FATF then it may have following possible consequences:
 - Economic sanctions from IMF, World Bank, ADB

- Problem in getting loans from IMF, World Bank, ADB and other nations.
- Reduction in international trade
- International boycott and side cornering
- Bad image of a country on different international forums

I2U2 COUNTRIES

Israel is looking forward to promoting a new initiative termed as I2U2.

About:

- The I2U2 initiative is a new grouping of India, Israel, USA and UAE. 'I2' stands for India and Israel, whereas 'U2' stands for the USA and the UAE.
- A virtual summit will be hosted in July by the US President at the level of heads of Government/State where discussions will be held on areas like food security crises and other areas of cooperation.
- In his visit to the Middle East next month, the US president will focus on increasing Israel's integration into the region through the Abraham Accords and through new groupings of partners such as I2U2.

About I2U2:

- A meeting of the foreign ministers of the four countries took place when the Indian External Affairs Minister was visiting Israel in October 2021.
 - ♦ The grouping was formed after the signing of the Abraham Accords.
 - ♦ It dealt with issues concerning maritime security, infrastructure, digital infrastructure and transport.
- Earlier, I2U2 was called the International Forum for Economic Cooperation.
- It had also been sometimes referred to as the 'West Asian Quad' in the past.

Objectives of the I2U2:

- According to the US, this new arrangement is part of the US administration's efforts to re-energise and revitalise American alliances across the world.
- According to the US States department, there are a number of areas where these countries can work together including technology, trade, climate, COVID-19, and potentially even security as well.
- This new grouping will harness the unique array of capabilities, knowledge and experience of the four nations. For example, UAE and Israel are important innovation hubs. USA is an Intellectual Property leader and India has high demographic dividend.

THE ABRAHAM ACCORDS

- The United States, United Arab Emirates, and Bahrain signed the Abraham Accords in 2020
- It was brokered by the USA and after this accord the United Arab Emirates and Bahrain recognized the State of Israel and normalised diplomatic relations.
- Later Sudan and Morocco followed suit and joined the Abraham Accords.
- It has raised the number of Arab States with formal diplomatic ties to Israel from two to six.
- The Abraham Accords can advance the two-state solution by opening channels of communications between the Arab states of the Gulf and Israel.

India and I2U2:

- India has a set of strategic and geoeconomic interests, introduced to those of the Gulf states through this new grouping.
 - ♦ India's move to join a new bloc reflects its keenness to take advantage of the Abraham Accords to deepen engagement with Israel without risking its ties with the UAE and the other Arab states.
- Also, Along with India's economic weight, geopolitical importance, and growing military power, India is fast becoming indispensable for the region.
 - ♦ India has made deep strategic gains in the gulf region and I2U2 will provide India with a platform to further its interest in a more refined way.
- India and the UAE signed the FTA and CEPA in 2022. Israel and the United Arab Emirates too have signed the free trade agreement. With the I2U2, a new four-way free trade agreement is also a possibility
- India has robust bilateral security cooperation with Israel, the US and the UAE. But it is not yet clear if it would like to explore security cooperation within the I2U2 framework.

Important fronts of India-Israel Cooperation:

- **Political Relations**
 - ♦ Diplomatic relations between the two countries have just completed 30 years. India formally recognised Israel in 1950 and in 1992 full diplomatic relations were established.
 - ♦ Political ties between the two countries are friendly and Increased high-level exchanges and ministerial visits on both sides have expanded cooperation in different functional areas
- **Economic and Commercial Relations:** From US\$ 200 million in 1992 (comprising primarily trade in diamonds), bilateral merchandise trade stood at US\$ 5.65 billion (excluding defence), with the balance of trade being in India's favour by US\$ 1.8 billion.

Investment:

- ♦ Indian investments in Israel totaled USD 122.4 million.
- ♦ There are over 300 investments from Israel in India mainly in the high-tech domain and in agriculture. These investments are varied in nature - manufacturing plants; R&D centres; subsidiaries etc.

Defence & Security:

- ♦ India imports critical defence technologies from Israel. There are regular exchanges between the armed forces.
- ♦ There is cooperation on security issues, including a Joint Working Group on Counter-Terrorism.
- ♦ In February 2014, India and Israel signed three important agreements on Mutual Legal Assistance in Criminal Matters, Cooperation in Homeland Security, and Protection of Classified Material.

BRICS BUSINESS FORUM 2022

The leaders of BRICS countries; Brazil, Russia, India, China and South Africa met virtually for the 2022 BRICS Business Forum.

About:

- This year BRICS Business Forum was chaired by China.
- It was held ahead of the 14th BRICS Summit in China.
- **Theme:** This year theme is 'Foster High-quality BRICS Partnership, Usher in a New Era for Global Development'

Key Takeaways from Leaders' Address India:

- The Indian PM said that the idea of 'reform, perform, and transform' has worked well in sustaining India's economic growth despite the pandemic and the world could adopt this approach in light of the Indian economy's performance.
- **Four Pillars of Growth of India:**
 - ♦ **Technology-led growth:** By fostering innovation in every sector. India has made innovation-friendly policies in many areas like space, blue economy, green hydrogen, clean energy, drones, geo-spatial data.
 - ♦ **Steps to improve the ease of doing business:** Thousands of rules have been changed to reduce the compliance burden on the businesses.
 - ♦ **Infrastructure growth:** It has helped India in successfully navigating the shocks caused by the pandemic.
 - ♦ **Digital economy:** It has helped India fight through the COVID-19-induced economic stress.

China

- The Chinese president proposed four steps to put the world back on the path of progress.

- ♦ **Solidarity and coordination:** To ensure world peace and prosperity. Hegemony, group politics and bloc confrontation bring no peace or security.
- ♦ **Jointly promote sustainable global development:** Countries should seize the opportunities presented by new scientific and technological developments to promote cooperation in a wide range of areas such as poverty reduction, public health, education, digital connectivity and industrialisation.
- ♦ **Coming up together:** World should tide over difficulties together and jointly pursue win-win cooperation.
- ♦ **New model of globalisation:** Which promotes openness and inclusiveness that will boost the free flow of capital and technology.

Russia

- **Economic Cooperation:** In consonance with this year's theme, the Russian President called for BRICS to foster economic cooperation among the business communities, noting that the current atmosphere, which is dominated by Western sanctions, is not conducive to economic growth.
- **Western Hegemony:** The Russian leader said that the West is following an irresponsible macroeconomic course.
 - ♦ There is the intentional destruction of cooperation ties, transport and logistics chains which undermines business interests on a global scale, negatively affecting the wellbeing of people, in effect, of all countries.
- **Alternate Reserve Currency:** BRICS countries are developing reliable alternative mechanisms for international settlements and exploring the possibility of creating an international reserve currency based on the basket of BRICS currencies.
- **Countering Sanctions:** Russia is taking comprehensive measures aimed at mitigating the negative impact of sanctions and strengthening trade and investment relations with all the states concerned.

Brazil

- **Boosting International Trade:** Brazilian President remarked that Brazil sought to improve the country's involvement in international trade and investment flows.
- **Increased private participation:** To expand the participation of the private sector in the economy.

South Africa

- The South African President underscored the role of BRICS in ensuring a smooth post-COVID-19 transition phase.
- **African vaccines for Africa:** He called upon BRICS to support the drive of the African Union to ensure that vaccines destined for African countries are procured from African manufacturers.

ABOUT BRICS BUSINESS FORUM

- It was established in 2010. It is organised under the aegis of BRICS Business Council
- It meets on the eve of the BRICS Summits with a view to expand and diversify trade and mutual investments through the identification of new business opportunities.
- **BRICS Business Council:** It was established at the fifth BRICS Summit in Durban, South Africa in 2013.
- **Objectives:**
 - ♦ Promote and strengthen business, trade and investment ties amongst the business communities of the five BRICS countries.
 - ♦ Ensure that there is regular dialogue between the business communities of the BRICS nations and the Governments of the BRICS countries.
 - ♦ Identify problems and bottlenecks to ensure greater economic, trade and investment ties amongst the BRICS countries and recommend solutions accordingly.

BRICS MEETING

The National Security Advisor (NSA) of India attended a virtual BRICS meeting hosted by the Chinese NSA .

About

- The meeting was aimed at strengthening "political and security cooperation".
- According to the official statement released following were the agendas for discussion
 - ♦ Multilateralism and global governance
 - ♦ New threats and challenges to national security
 - ♦ Governance in new domains
- The virtual meeting of NSA was held before the 14th BRICS summit, which will be hosted by the Chinese President.
 - ♦ The theme of the BRICS summit for 2022 is "Foster High-quality BRICS Partnership, Usher in a New Era for Global Development".

Significance of the meeting

- The meeting marked the two-year anniversary of the clashes between India and China in the Galwan valley.
- No statement on the Galwan clash anniversary was made by any side. This signifies an attempt by both the countries to de-emphasise the differences despite a stand-off on both sides.

About BRICS

- BRICS is an important grouping bringing together the major emerging economies of the world.
- BRICS is an acronym for Brazil, Russia, India, China, and South Africa.
- BRICS countries comprise
 - ♦ 41% of the world population
 - ♦ 24% of the world GDP and
 - ♦ over 16% share in world trade.
- Some of the working mechanisms of the BRICS include Foreign Ministers Meeting, National Security Advisors Meeting, Ministerial Meeting, and People to People Mechanism. .
- BRICS countries have deliberated on important issues under the three pillars-
 - ♦ political and security,
 - ♦ economic and financial and
 - ♦ cultural and people-to-people exchanges.
- BRICS has begun a process of institutionalisation and increased intra-BRICS cooperation in many areas like health, science and technology, environment, finance, trade, agriculture, etc.

Journey of BRICS

- The leaders of BRIC (Brazil, Russia, India, and China) countries met for the first time in St. Petersburg, Russia, on the margins of the G8 Outreach Summit, 2006.
 - ♦ The term BRIC was coined by Goldman Sachs economist Jim O'Neill in 2001
- The 1st BRIC summit was held in Yekaterinburg, Russia in June 2009.
- South Africa was accepted as a full member in September 2010 and then the name of the group was changed to BRICS.
- The basic idea behind the grouping and its name was economies of these nations would come to collectively dominate global growth by 2050.

Significance of BRICS for India

- Even when their bilateral relations remain under strain BRICS allows India and China to modulate their rivalry within the group.
- BRICS gives India and China the opportunity to “decouple” their strategic contest from the other dimensions of the relationship.
- BRICS provides India with a transcontinental reach as it has Brazil and South Africa present.
- Strengthening and reforming the multilateral system’ remains a key principle of cooperation among BRICS evident from the Brasilia summit declaration, 2019.

- Hence BRICS repeated calls for UNSC reform boost India's own demands for reform.
- BRICS has developed a common perspective on a wide range of global and regional issues; established the New Development Bank; created a financial stability net in the form of the Contingency Reserve Arrangement.
- The BRICS New Development Bank (NDB), has advanced a loan of \$1 billion to India in May to fight COVID-19-induced costs and BRICS is on the verge of setting up a Vaccine Research and Development Virtual Centre.
- India has often equated BRICS and QUAD to signal its commitment to strategic autonomy and multi-aligned foreign policy.

Challenges of BRICS

- BRICS countries are too diverse, have little in common and have no shared history.
- BRICS does not have the ‘strategic vision’ to deal with ‘global matters’ on its own and relies on other international organisations, like G20
- Disagreements and Internal contradictions among its members are also a matter of concern. For example India-China have active land boundary disputes.
- When it comes to the implementation of initiatives decided by BRICS, there is slow progress shown on the ground and sometimes due to lack of funds as all the countries in the BRICS are economically affected because of COVID.
- The dominance of the Chinese economy and its role in trade relations makes the BRICS much more a China-centric grouping rather than a union of equal members.
- BRICS countries lack mutual economic interests. Intra-BRICS trade stands at just 15 percent of global trade, in comparison to their combined population of over 40 per cent of that of the world.

Way Forward

- To increase cooperation, BRICS countries need a bottom-up approach, filling up of trust deficit and more people-to-people connections.
- There can be a single BRICS visa and increased collaboration among researchers and orchestrating private sector collaboration etc.
- the association will have to create common interest groups with shared visions, lobbying for common changes and removal of restrictions.

WEST SETI POWER PROJECT

India will soon take over the West Seti hydropower project in Nepal.

About

- India's National Hydro Power Corporation (NHPC) has begun preliminary engagement in Nepal for the takeover of the 750-MW West Seti Hydropower Project.
- The West Seti Dam would be a 195-metre (640 ft) high concrete-face rock-fill hydroelectric dam on the Seti River.
 - It will have a power station located upstream of the Seti River at its confluence with the Karnali River.

The Karnali rises from Mt. Kailash near Lake Manasarovar on the Tibetan Plateau and flows to its confluence with the Ganges River in India as the Ghaghara River.

- The West Seti Project covers the far western Nepal region.
- The Seti Gandaki River, also known as the Seti River or the Seti Khola, is a left tributary of the Trishuli River.



Background

- In the mid-1990s an Australian company SMEC was allotted the project under Build, Own, Operate and Transfer (BOOT) scheme.
- SMEC failed to begin the work as it could not enter into a power purchase agreement with India.
- The project was undertaken by a Chinese Corporation in 2012 but in 2018, this company expressed its inability to execute the Project due to high resettlement and rehabilitation costs.

- India is Nepal's power market and it has a policy of not buying power from China-executed projects.

BOOT

It is a project delivery mechanism where the private sector has the right to finance, design, construct, own and operate a project for a specified number of years.

India-Nepal Power Relations:

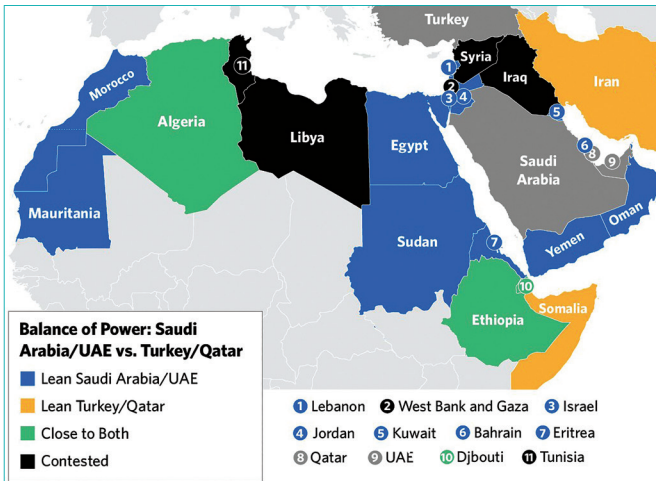
- Nepal is rich in power sources with 83000 MW potential as it has around 6,000 rivers.
- Nepal is currently selling 364 MW of power to India.
 - Hydropower projects in Nepal will provide a reliable source of inexpensive and clean electricity to India, generating export revenue for Nepal.
 - Purchasing electricity from Nepal would be less expensive for India with power prices rising sharply here due to coal shortages.
 - There are also plans by Nepal to sell power to Bangladesh via Indian territory.
- However, Nepal has a power shortfall as it generates only around 900 MW against a 2000 MW installed capacity.
- India is successfully executing the 900-MW Arun Three project in eastern Nepal under a BOOT scheme set for completion by 2023.
- But there has been some uncertainty in Nepal over India's ability to deliver projects on time. For example-
 - The Mahakali treaty was signed in 1996. But India is yet to come out with the Detailed Project Report.
 - The Upper Karnali project signed by GMR has not come up yet.

PANEL OF EXPERTS REPORT ON LIBYA

The Turkish government is deploying Syrian fighters to Libya in violation of UN sanctions Committee.

About:

- Recently a report prepared by the Panel of Experts on Libya was submitted to the UN Security Council (UNSC) Sanctions Committees.
- The Libya Sanctions Committee in the UNSC is headed by India.
 - India also chairs the committees of the Taliban sanctions committee and the Counter-Terrorism Committee of the UN Security Council.



Highlights of the report:

- The report states that there is a continuous presence of Turkish-backed Syrian fighters in military camps affiliated with the Government of National Unity.
- According to the report there have been back-and-forth transfer operations of Syrian fighters to and from Libya and supply of arms to various factions in Libya.
- This is in violation of the Arms Embargo put by the UNSC resolution 1970.
- India has called for holding the Presidential and Parliamentary elections in Libya at the earliest.

SANCTION COMMITTEE'S MANDATE

- Monitor implementation of the sanctions measures
- Designate those individuals subject to the travel ban and asset freeze measures and to consider requests for exemptions to those measures;
- Establish guidelines necessary to facilitate the implementation of the sanctions measures;
- Report within thirty days to the Security Council on its work for the first report and thereafter to report as deemed necessary by the Committee;
- Encourage a dialogue between the Committee and interested Member States,
- Seek from all States information useful regarding the actions taken by them to implement effectively the sanctions measures;
- Examine and take appropriate action on information regarding alleged violations or non-compliance with the measures;
- Designate vessels in relation to attempts to illicitly export petroleum, including crude oil and refined petroleum products.

About UNSC Sanctions Committee:

- The UNSC can take action to maintain or restore international peace and security under Chapter VII of the United Nations Charter.
- Sanctions measures, under Article 41, encompass a broad range of enforcement options that do not involve the use of armed force
- At present there are 14 ongoing sanctions regimes which focus on supporting political settlement of conflicts, nuclear non-proliferation, and counter-terrorism.
- Each regime is administered by a sanctions committee chaired by a non-permanent member of the Security Council. There are 10 monitoring groups, teams and panels that support the work of 11 of the 14 sanctions committees.
- The Libya Sanctions Committee is a very important subsidiary body of the UNSC which implements the sanctions regime.

Situation in Libya

- Libya has been torn by civil war since a NATO-backed popular uprising ousted and killed the dictator Colonel Muammar Qaddafi in 2011.
- The current struggle pits rebel Libyan commander Khalifa Haftar's Libyan National Army (LNA) in the east of the country against the internationally recognized Government of National Accord (GNA), led by Abdul Hamid Dbeibeh in Tripoli.
- Turkey has provided support for the GNA. Qatar and Italy have also backed the Tripoli-based government.
- Russia has supported the rebels through military contractor Wagner Group. France, Egypt, Jordan, and the United Arab Emirates also back Haftar.

India-Turkey Relations

- Turkey and India established formal diplomatic ties in 1948
- During the colonial era, India had extended support to the Ottoman Empire after it was sanctioned when it was defeated in World War One.
- However, India's political ties with Turkey have been lukewarm over the years.
- Turkey is a close ally of Pakistan. Turkey has targeted India over Kashmir, including at the UN.
- Both India and Turkey have failed to enter into meaningful dialogue to communicate each other's perspective. They even lack necessary dialogue forums
- Bilateral trade between India and Turkey was at US\$ 9.3 billion in 2021.

ASTRA MK-1

Recently, the Ministry of Defence has signed a contract with the Hyderabad-based public-sector Bharat Dynamics Ltd (BDL) for supply of the Astra Mark-1.

About:

- **Astra project:** It was officially launched in the **early 2000s** with defined parameters and proposed future variants.
 - ♦ In 2017, the development phase of the Mk-1 version was complete.
- The Astra Mk-1 is a beyond visual range (BVR), air-to-air missile (AAM).
 - ♦ BVM missiles are capable of engaging beyond the range of 20 nautical miles or 37 kilometres.
 - ♦ AAMs are fired from an airborne asset to destroy an airborne target.
- **Development:** The missile has been designed and developed by the Defence Research and Development Organisation (DRDO) for deployment on fighter jets like Sukhoi-30 MKI and Tejas of the Indian Air Force and the Mig-29K of the Indian Navy.
- **Air combat:** The missile can travel at speeds more than four times that of sound and can reach a maximum altitude of 20km, making it extremely flexible for air combat.
- **Versions and range:** While the range for Astra Mk-1 is around 110 km.
 - ♦ The Mk-2 with a range over 150 km is under development.
 - ♦ A Mk-3 version with a longer range is being envisaged.
 - ♦ One more version of Astra, with a range smaller than Mk-1 is also under development.

Significance of the move:

- **Indian-IDDMM category:** The purchase will be under the Buy Indian-IDDMM category of defence acquisition procurement of products from an Indian vendor that have been indigenously designed, developed and manufactured with a minimum of 50 per cent indigenous content.
- **Opportunities for MSME's:** The project will create opportunities for several MSMEs in aerospace technology for at least 25 years.
- **Atmanirbhar Bharat:** The project essentially embodies the spirit of 'Atmanirbhar Bharat' and will help facilitate realising our country's journey towards self-reliance in Air to Air Missiles.

- **Reducing the dependency:** The missile has been designed based on requirements specified by the IAF for BVR as well as close-combat engagement, reducing the dependency on foreign sources.
- **AAMs with BVR capability provides large stand-off ranges** to own fighter aircraft which can neutralise adversary airborne assets without exposing themselves to adversary air defence measures.
 - ♦ **Stand-off range means** the missile is launched at a distance sufficient to allow the attacking side to evade defensive fire from the target.
- **Astra is technologically and economically superior** to many such imported missile systems.
- **Addition to the lethality of India's Aircraft carriers:** The Indian Navy will integrate the missile on the MiG-29K fighter aircraft which are deployed on the Navy's aircraft carriers, thus adding to the lethality of India's Aircraft carriers.

COLOMBO SECURITY CONCLAVE

The National Investigation Agency of India has organised the Colombo Security Conclave Virtual Conference.

About:

- The recent Colombo Security Conclave was held in **Male (Maldives)**.
- **Members:** The conference, which originally began as an initiative between **India, Maldives, and Sri Lanka** in 2011, was expanded to include Seychelles, Mauritius, and Bangladesh.
 - ♦ **Mauritius joined the forum as a fourth member**, while Bangladesh and Seychelles attended as observers.
- The security conclave identified **key areas of cooperation** to enhance and strengthen regional security in the following five pillars:
 - ♦ Maritime Safety and Security
 - ♦ Countering Terrorism and Radicalisation
 - ♦ Combating Trafficking and Transnational Organised Crime
 - ♦ Cyber Security, Protection of Critical Infrastructure and Technology
 - ♦ Humanitarian Assistance and Disaster Relief

Challenges:

- **Strategic rivalries in the Indo-Pacific:** including in South Asia and the IOR, between China and the Quadrilateral Security Dialogue (Quad) countries of India, Japan, Australia, and the United States are sharpening.

- **China's growing presence in the region's economic, political, and security affairs** has underscored the need for other powers like India to take a leadership role in the region.
- **Sri Lanka:** a key member of the conclave is now facing a severe economic crisis. It needs as much external support as possible to tide over the crisis.
- **Maldives:** opposition political parties and figures have become vocal in opposing deepening India-Maldives ties.
- **India** too faces the challenge of how to harness its accelerating economic growth for the future.

Significance of the event:

- **Sharing experience:** Various challenges related to terrorism were discussed in their respective countries and shared experiences on the prosecution of terrorism cases, strategies to deal with foreign fighters, and countering the misuse of the internet and social media.
- **Closer cooperation and coordination:** It emphasised the need for closer cooperation and coordination among member and observer countries of the Colombo Security Conclave for effective investigation and prosecution of terrorism and radicalisation related cases.
- **Indian Ocean region:** It is an important step in consolidating India's engagement with the Indian Ocean region (IOR) and in the region's security.
- **Crucial security partners:** From India's perspective, all five nations are crucial security partners, given their shared interests in South Asia and the wider IOR.
- **Solving global challenges:** The conclave also took place at a time when the international, regional, and domestic challenges are rising for its participating countries.
 - ♦ The raging war in Ukraine, the imposition of severe economic sanctions on Russia, and the rise in global oil and food prices will affect the whole world and the IOR states are no exception.

VL-SRSAM

Vertical Launch Short Range Surface to Air Missile (VL-SRSAM) was successfully flight-tested by Defence Research & Development Organisation (DRDO).

About:

- It has been designed and developed jointly by three facilities of the Defence Research and Development Organisation for the deployment of Indian Naval warships.
- It is a canisters system, which means it is stored and operated from specially designed compartments.
- In the canister, the inside environment is controlled, thus making its transport and storage easier and improving the shelf life of weapons.
- **Capability:**
 - ♦ It has been designed to strike high-speed airborne targets at the range of 40 to 50 km and at an altitude of around 15 km.
 - ♦ Its design is based on the Astra missile which is a Beyond Visual Range Air to Air missile.
 - ♦ The missile has the capability of neutralising various aerial threats at close ranges including sea-skimming targets.
 - ♦ The tactic of sea-skimming is used by various anti-ship missiles and some fighter jets to avoid being detected by the radars onboard warships.
 - ♦ For this, these assets fly as close as possible to the sea surface and thus are difficult to detect and neutralize.
- **Features:**
 - ♦ **Cruciform wings:** The cruciform wings are four small wings arranged like a cross on four sides and give the projective a stable aerodynamic posture.
 - ♦ **Thrust vectoring:** The thrust vectoring is the ability to change the direction of the thrust from its engine to control the angular velocity and the attitude of the missile.
- **Significance:** This success will further enhance the defence capability of Indian Naval Ships against aerial threats.

APPOINTMENT OF HIGH COURT JUDGES

Recently, the Union Government has cleared names of new Chief Justices for five High Courts.

About:

- The Chief Justice of India, in his recent address at the joint conference of Chief Justices and Chief Ministers, had highlighted the urgent need for the appointment of judges as the judiciary has a huge pile up of cases pending in the District courts, High Court and Supreme Court.
- Pendency in district courts has increased by 54.64% and the lack of judges in the judiciary is adding worry to the existing case load.

Appointment of High Court Judges:

- **Appointment:** The judges of a high court are appointed by the President. The Chief Justice is appointed by the President after consultation with the Chief Justice of India and the Governor of the State concerned.
- In the Second Judges case (1993), the Supreme Court ruled that no appointment of a judge of the High Court can be made, unless it is in conformity with the opinion of the Chief Justice of India.
- In the Third Judges case (1998), the Supreme Court opined that in case of the appointment of High Court Judges, the Chief Justice of India should consult a collegium of two senior-most judges of the Supreme Court. Thus, the sole opinion of the Chief Justice of India alone does not constitute the 'consultation' process.
- **Collegium System:** The Collegium system in India also called "Judges- selecting- Judges", is the system by which the judges are appointed and transferred only by the judges.
- The system has evolved by means of the judgments of the Supreme Court, and not by an Act of Parliament or by a Constitutional provision.
- A High Court collegium is headed by its Chief Justice and 4 other senior-most judges of that court. Names recommended for appointment by a High Court collegium reach the Government only after approval by the CJI and the Supreme Court collegium.
- The Government can return the recommendation for reconsideration by Collegium.
- If the collegium reiterates its recommendation then the government is mandated to appoint the respective person.

- The 99th Constitutional Amendment Act of 2014 and the National Judicial Appointments Commission Act of 2014 have replaced the Collegium System of appointing judges to the Supreme Court and High Courts with a new body called the National Judicial Appointments Commission (NJAC).
- In 2015, the Supreme Court declared both the 99th Constitutional Amendment as well as the NJAC Act as unconstitutional and void. Consequently, the earlier collegium system became operative again.
- This verdict was delivered by the Supreme Court in the Fourth Judges case (2015). The Court opined that the new system (i.e. NJAC) would affect the independence of the judiciary.

TRANSFER OF JUDGES

- The President can transfer a judge from one high court to another after consulting the Chief Justice of India.
- On transfer, the Judge is entitled to receive in addition to his salary such compensatory allowance as may be determined by Parliament.
- In 1977, the Supreme Court ruled that the transfer of high court judges could be resorted to only as an exceptional measure and only in public interest and not by way of punishment.
- Again in 1994, the Supreme Court held that judicial review is necessary to check arbitrariness in transfer of judges. But, only the judge who is transferred can challenge it.
- In the Third Judges case (1998), the Supreme Court opined that in case of the transfer of high court judges, the Chief Justice of India should consult, in addition to the collegium of four senior most judges of the Supreme Court.
- The Chief Justice of the two high courts (one from which the judge is being transferred and the other receiving him). Thus, the sole opinion of the Chief Justice of India does not constitute the 'consultation' process.

Qualifications required for the appointment of Judges to High Courts:

- A person to be appointed as a judge of a high court, should have the following qualifications:
 - ♦ He/She should be a citizen of India.
 - ♦ He/She should have held a judicial office in the territory of India for ten years.
 - ♦ He/She should have been an advocate of a high court (or high courts in succession) for ten years.

- The Constitution has not prescribed a minimum age for appointment as a judge of a high court.
 - Moreover, unlike in the case of the Supreme Court, the Constitution makes no provision for appointment of a distinguished jurist as a judge of a high court.

NATIONAL AIR SPORTS POLICY

The Minister for Civil Aviation recently unveiled the National Air Sports Policy (NASP) 2022.

About:

- Vision:** To make India as one of the top sports nations by 2030.
- Mission:** To provide a safe, affordable, accessible, enjoyable and sustainable air sports ecosystem in India.
- Objectives:**
 - To promote an air sports culture in India and to develop India as a preferred global hub for air sports.
 - To enable adoption of international good practices in safety.
 - To develop a simple, stakeholder friendly and effective governance structure.
 - To increase the participation and success of Indian sportspersons in global air sports events.
 - To promote design, development and manufacturing of air sports equipment in India in line with the Atmanirbhar Bharat Abhiyan.

Need for NASP in India:

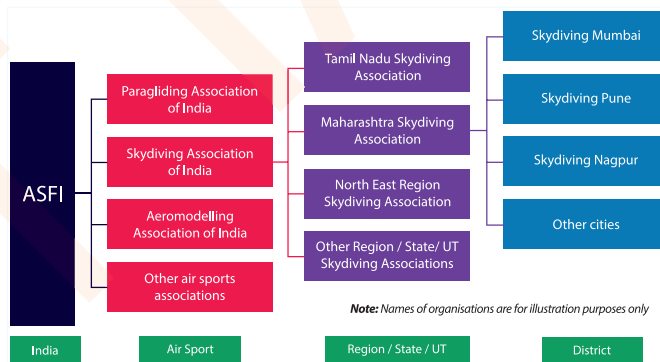
- World prospects:** The Air Sports industry has huge potential to lead India in the world of air sports.
- Geographical Advantage:** The vast geographical expanse, diverse topography and fair weather conditions of India can enable a wide diversity of air sports.
- Demographic Profile:** India has a huge youth population. Also, there is a growing culture for adventure sports and aviation.
- Valuation:** Presently, the air sports industry in India is worth ₹80-100 crore with nearly 5,000 providers.
- Growth and Employment:** Revenue wise it has potential to grow 10 times and an employment generation capacity of 1 lakh (direct jobs).
- Economic impact:** The air sports industry will also have multiplier benefits in terms of growth of travel, tourism, infrastructure sectors of economy.

Organizational Structure:

- Hierarchy:** The air sports policy laid down a four-tier governance structure; **The Air Sports Federation of India (ASFI)**

at the top, followed by national associations for individual sports and their regional and district level units.

- ASFI:** It will be an autonomous body under the aegis of the Ministry of Civil Aviation (MoCA).
- Mandate:**
 - Represent India at global platforms associated with air sports. E.g. the World Air Sports Federation (FAI).
 - Conduct competitions across India through different national air sports associations.
 - Provide governance in terms of regulation, certification, competitions, awards and penalties.
 - Frame the draft guidelines in tune with the National Sports Development Code of India (NSDCI), 2011 and the Ministry of Youth Affairs and Sports notifications.
- Chairman:** The Secretary to the Ministry of Civil Aviation.
- Governing Council:** The ASFI chair will nominate up to three eminent experts in air sports as members.



Highlights of the NASP 2022:

- Sports Coverage:** Aeromodelling, model rocketry, amateur-built and experimental aircraft, ballooning, drones, gliding, powered gliding, parachuting, paramotoring, powered aircraft and rotorcraft.
- Financial Support:** Initially, all the bodies involved in sports governance will receive financial support from MoCA. Further, fund generation will be easier once India's sports teams start participating in international events.
- Authority and Responsibility:** The ASFI will provide oversight and the air sports associations will be given sole responsibility for specifying safety standards. Accidents will be reported to the sport's affiliated association within 48 hours.
- Clearance:** Air traffic controllers will give clearances to air sports providers in the region. Also, in areas witnessing frequent air sports activities like Bir Billing or Rishikesh in Uttarakhand, a segregated airspace can be given.
- Incentives:** To encourage air sport in India, the government will plan various incentives like GST reduction (from 18%-28% to 5% or less) on air sports equipment.

- **PLI:** Government can also incentivise the sector's activities by reduction in import duty for a limited period and a production-linked incentive (PLI) scheme to boost domestic manufacturing sports equipment.
- **Collaboration with States, UTs:** For development of necessary infrastructure and facilitate promotion of air sports and tourism.
- **Collaboration with Armed Forces:** To utilize excellent training facilities, equipment and instructors for air sports.
- **Adoption of global best practices:** International Olympic Committee (IOC) might include air sports in IOC-approved sporting events. All air sports competitions in India will be conducted as per IOC and FAI guidelines.

CDS SELECTION POOL WIDENED

The government in a recent notification has amended the service rules of the armed forces, related to the eligibility for the post of Chief of Defence Staff (CDS).

Amendments to Service Rules:

- Since India's first CDS General Bipin Rawat passed away in an unfortunate accident, the post has been vacant.
- In a step toward filling the vacancy, the government has amended the service rules of the armed forces.
- According to the amendment, all serving and recently retired three-star and four-star officers from the three services who are under the age of 62 will be eligible for the post of CDS.
 - ♦ **Three-star officers:** Lt General, Air Marshal and Vice Admiral.
 - ♦ **Four-star officers:** The CDS, the chiefs of the Indian Army, Indian Navy and Indian Air Force.
- To enable the three star General's appointment to the post of CDS, the government has amended the Army Rules, 1954; the Naval Ceremonial, Conditions of Service and Miscellaneous Regulations, 1963; and the Air Force Regulations, 1964.
- The government also has notified possible extension of the service of the CDS if deemed necessary subject to a maximum age of 65 years.

Critical Analysis of the amended rules:

- **Benefits (Wider Pool):** The amendments to the service rules for the Army, Navy and Air Force will make the potential candidates on a level playing field with the serving officers.
- **Issues (Seniority vs. Merit):** As a convention, usually the most senior officer of the service is appointed as a service chief. Thus, the appointment of a serving or a retired three-star officer over the serving four-star officers might create issues.

Chief of Defence Staff (CDS):

- The post of CDS was created in 2019 for a dual role, as the most senior uniformed officer in rank (First among equals) and as a Secretary of the Department of Military Affairs.
- **Roles:** To act as the primary military advisor to the government.
 - ♦ To create jointness among the armed forces.
 - ♦ To facilitate creation of integrated theatre commands.
 - ♦ To help in prioritising capital acquisition for the modernisation of the forces.

Work done by CDS since its inception:

- **Last CDS** had directed the commissioned officers at the level of General Officer Commanding-in-Chief in each of the services, to report on the possible structure of integrated theatre commands.
- As per the submitted reports, four to five integrated theatre commands have been envisioned:
 - ♦ One for air defence.
 - ♦ One maritime defence.
 - ♦ Two land-based theatre commands for the western border (Pakistan) and northern border (China).
 - Or an additional integrated command including the area under the Northern Army Command presently at the borders with Pakistan and China in the UTs of J&K and Ladakh.
- **Collective strength:** As per the requirement, the integrated commands will be able to utilise resources from all the three services available under them.
 - ♦ The operational control of all resources will be with the Theatre Commander, which will report to the Chiefs of Staff Committee headed by the CDS.

AGNIPATH SCHEME

The Union Government recently launched a new short-term recruitment policy for Indian youth to serve in the armed forces.

About:

- The recruitment scheme has been termed as Agnipath Scheme and the recruits under the scheme will be called as Agniveers.
 - ♦ The military recruitment procedures in many countries such as the U.S, Russia, the U.K., Israel, France and Germany were extensively studied over the past two years before formulating this scheme for Indian conditions.
- The scheme will recruit personnel below officer rank (PBOR) into the Indian armed forces for four years.
- The recruitment will broadly serve two objectives namely fielding and deployment of a more youthful military and economising pension pay-outs.

- Recruitment under the scheme will be done for the three services of the Indian Armed Forces i.e. the Army, Navy, and Air Force.
- Under the scheme, aspirants between 17 ½ to 21 years of age are eligible to apply as new recruits in Armed Forces.
- Agniveer on completion of four years will get an opportunity to join regular cadre and upto 25% would be selected through another recruitment process.
 - The Defence Ministry announced a one time upper age limit relaxation to 23 years, in the recruitment process for 2022, due to Covid related halt in recruitment process.

Recruitment process and conditions of service:

- The intake of Agniveers would be progressively increased in the next few years.
 - Intake of recruits under Agnipath will increase from 46,000 annually in the first 4 years, to 90,000 in the 5th year to 125,000 from the 6th year.
- Training:** Once selected, the aspirants will go through training for six months and then will be deployed for three and a half years.
- Eligibility:** Interested candidates should have completed Class 10th or class 12th or Two years Vocational course.
- Emoluments:** Agniveers will get a starting salary of Rs 30,000, along with additional benefits which will go up to Rs 40,000 by the end of the four-year service.

- Also 30 per cent of their salary will be set aside under a Seva Nidhi programme, and the Government will contribute an equal amount every month, and it will also accrue interest.
- At the end of the four-year period, each soldier will get Rs 11.71 lakh as a lump sum amount, which will be tax-free.
- They will also get a Rs 48 lakh life insurance cover for the four years.
- In case of death, the payout will be over Rs 1 crore, including pay for the unserved tenure.
- Exit:** After four years, only 25 per cent of the batch will be recruited back into their respective services, for a period of 15 years.
 - For those who are re-selected, the initial four-year period will not be considered for retirement benefits.

Significance of the scheme:

- Agnipath is a 'transformational' initiative, which will make the forces lean and much younger, with the average age of the soldier brought down to about 25 from the present 32 years.
- It will also ensure the availability of a larger share of budget outlay for capital expenditure for the acquisition of hi-tech equipment and platforms because the outlay for pension payout will drop considerably over time.
- Military training at a young age would make these men returning to the civilian world more disciplined and employable.

PAY & BENEFITS: WHAT THE AGNIVEERS GET

- In Hand (70%)
- Contribution to Seva Nidhi (30%)*

Similar contribution to corpus fund by Government of India**

BASIC PAY PER MONTH



All figures in ₹ (Monthly Contribution)

**Exit After
4 Years**

₹11.71 Lakh as SevaNidhi Package
(Including interest accumulated on the above
amount as per the applicable rates)

Total
contribution
to Seva Nidhi
after 4 yrs
10.04 Lakh
(₹5.02 Lakh* +
₹5.02 Lakh**)

NASHA MUKTA BHARAT ABHIYAN

The Department of Social Justice & Empowerment had organized Nasha Mukta Bharat Abhiyaan Run on the occasion of International Day against Drug Abuse.

About:

- The run was organized with a purpose of creating awareness and to present a united front against Drug Abuse.
- The International Day against Drug Abuse and Illicit Trafficking is marked on 26 June every year.
- **Aim:** The day aims to strengthen action and cooperation in achieving a world free of drug abuse.
- **Theme:** The theme of the day for 2022 was "Share Facts on Drugs, Save Lives".
 - ♦ Its motive is to combat misinformation by sharing real facts on drugs.
 - ♦ Such facts sharing range from health risks and solutions for the world drug problem to evidence-based prevention, treatment, and care.

Nasha Mukta Bharat Abhiyan (NMBA):

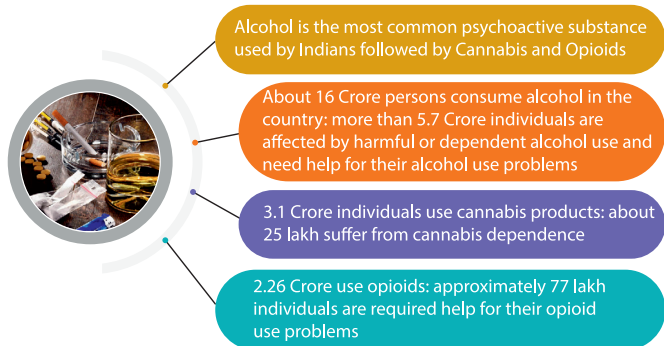
- **Origin:**
 - ♦ **NMBA was launched** on 15th August 2020 in 272 Districts identified as most vulnerable in terms of usage of drugs in the country.
 - ♦ **Aim:** To tackle the issue of Substance Abuse with a vision to make India drug free
 - ♦ Vulnerable districts were identified based on findings from the Comprehensive National Survey and the inputs provided by the Narcotics Control Bureau (NCB).

Findings of the National Level Survey on Substance Use:

- **Objectives of the Abhiyan:**
 - ♦ Creation of awareness generation programmes.
 - ♦ Focus on higher educational Institutions, university campuses and schools.
 - ♦ Reaching out to the Community and identifying drug dependent populations.
 - ♦ Focus on counseling and treatment facilities in geo-tagged hospitals and rehabilitation centers.
 - ♦ Capacity building programmes for service providers.
- **Institutions for Drug Demand Reduction:** The MoSJE supports organizations working for preventive education & awareness

generation on substance abuse, capacity building, treatment and rehabilitation. These institutions are:

- ♦ **Integrated Rehabilitation Center for Addicts (IRCAs):** These are de-addiction centers with inpatient facilities of counseling and treatment for drug dependent persons.
- ♦ **Community Peer Led intervention (CPLI):** Here, youth volunteers for early preventive education of vulnerable adolescents.
- ♦ **Outreach and Drop In Centres (ODIC):** It provides facilities of screening, assessment and counseling. It also provides referral and linkage to treatment and rehabilitation services for drug dependents.
- **Approach:** NMBA follows a three-pronged attack to fight drug abuse problem:
 - ♦ Curb supply by Narcotics Control Bureau (NCB).
 - ♦ Outreach, Awareness and Demand Reduction efforts by the Ministry of Social Justice and Empowerment (MoSJE).
 - ♦ Treatment through respective health departments.
- **Need:**
 - ♦ Drug Addiction has been emerging as a serious concern in India, especially in the younger generation.
 - ♦ This leads to dangerous consequences not only for the person using drugs, but also on the family and society at large.
 - ♦ The National Crime Records Bureau has reported that drug abuse has resulted in an increased crime rate in India.
 - ♦ The Nasha Mukta Bharat Abhiyaan is a prime nation building initiative as it focuses on the healthy and disciplined youth, necessary to achieve demographic dividend and healthy social capital growth in India.



Institutional Structure for implementation:

- **The District Level Nasha Mukta Committees:**
 - ♦ They are constituted specially for the NMBA. These committees will be headed by the District Collector/ Magistrate.

- ♦ They have representatives of stakeholder Ministries like Health, Education, Women & Child, NCB, Police and organizations working in this field who help in the district level implementation of NMBA.
- **The State Level Abhiyaan Committees:**
 - ♦ They monitor the NMBA activities in all the selected districts in respective states.
 - ♦ They are chaired by the Principal/Chief Secretary of the department implementing drug prevention programmes in the respective state.
- **The Ministry of Social Justice & Empowerment at central level:**
 - ♦ Monitors all NMBA activities through the State Coordinators of the Project Monitoring Unit and the multiple mechanisms already put in place.



DIGITAL NEWS REPORT 2022

Recently, Reuters Institute released report on digital news consumption.

About:

- The report is an annual release by the Reuters Institute for the study of journalism.
 - ♦ The report tracks how news is consumed across 46 markets in six continents based on online questionnaires.
- The findings of the report are not necessarily nationally representative, especially for countries with lower internet penetration.
- The report documents the ways in which “the connection between journalism and much of the public may be fraying”.

Major trends highlighted in the report:

- Trust in news is falling in nearly half the countries surveyed.

- Significant proportions of the public, especially younger age groups, are beginning to turn away from news.
- News consumption is increasingly happening via social media platforms such as TikTok rather than traditional media.
- Selective avoidance of news has risen sharply across countries.
- The trust levels were lower among those on the right, compared to those on the left, of the ideological spectrum.
- Growth in digital subscriptions for news content have been leveling off.
- Smartphones have become the dominant way in which most people first access news in the morning.
- Facebook has remained the most-used social network for news, while TikTok is the fastest-growing network.

Reasons for declining trust in news content:

- An indifference to news and its value among people.
- Widespread perception of political and other biases by the media.
- Lack of trust closely tracked the class divide, with the ‘haves’ showing higher levels of trust, while the ‘have-nots’ viewed the media as often aligning itself with the elites.
- Other reasons include perceptions of undue influence from business or politicians for their own commercial or political interests.

Trends in India:

- India is a strongly mobile-focussed market with nearly 72% of the survey respondents accessed news through smartphones and 35% did so via computers.
- Nearly 84% of the Indian respondents sourced news online, while 63% from social media, 59% from television, and 49% from print.
- YouTube (53%) and WhatsApp (51%) were the top social media platforms for sourcing news.
- India has registered a small increase in the level of trust, with 41% trusting news overall.
- Only a minority 36% and 35% respondents felt that the media was free from undue political and business influence respectively.

SELECTIVE AVOIDANCE OF NEWS

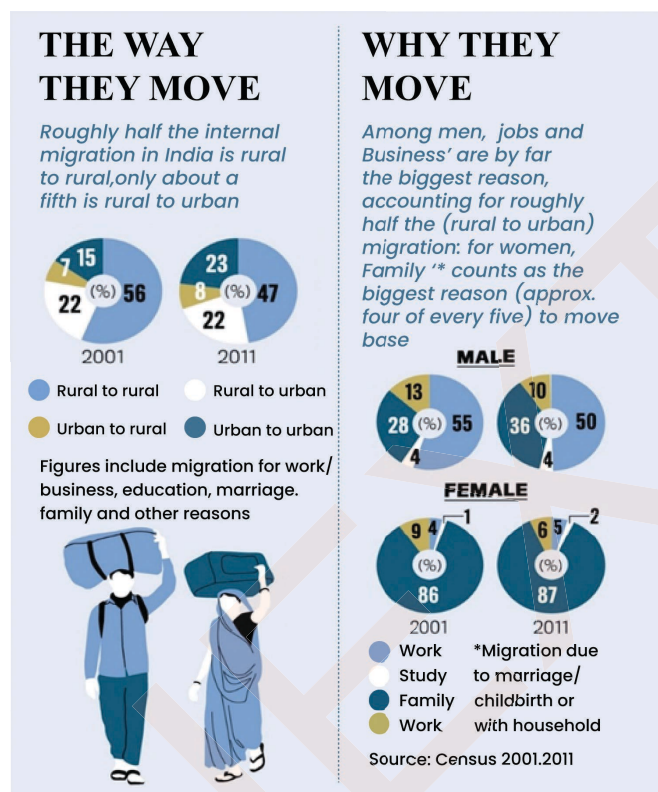
- It is an approach towards news access when people choose to ration or limit their exposure to something — or at least to certain types of news.
- It is one of the reasons why news consumption levels have failed to increase as per expectations.
- Its proportion has doubled in Brazil (54%) and the U.K. (46%) since 2017.

REPORT ON MIGRATION IN INDIA

Recently, Union Government released a report on 'Migration in India 2020-21'.

About:

- The report has been released by the Ministry of Statistics and Programme Implementation (MoSPI).
- The report is based on a first-time collection of additional data during the annual round of the Periodic Labour Force Survey for July 2020-June 2021.
 - The additional data separates the categories of 'temporary visitors' and 'migrants'.



Major findings of the report:

- After the onset of the COVID-19 pandemic, nearly 0.7 percent of the country's population was a 'temporary visitor' to households.
 - Temporary visitors for the survey have been defined as those who arrived after March 2020 and stayed in the household continuously for a period of 15 days or more but less than 6 months.
- Over 84 percent of these 'temporary visitors' moved places for reasons linked to the pandemic.

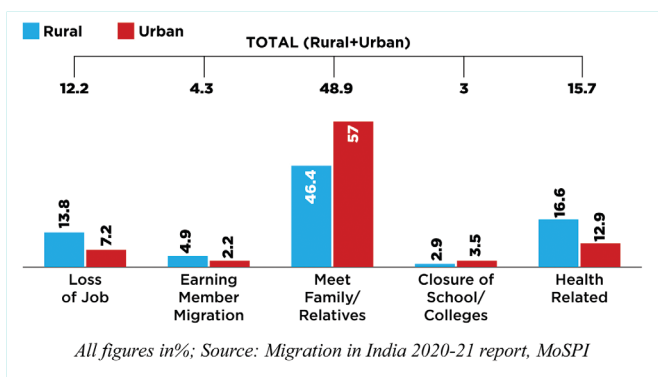
- Reasons for migration varied from meeting family/relatives/friends, loss of job/closure of units/lack of employment opportunities, migration of earning members, closure of educational institutions, and health.
- A total of 48.9 percent of the 'temporary visitors' moved to meet family/relatives/friends.
- Nearly 15.7 percent of such temporary visitors moved for health-related reasons.
- Over 12.2 percent moved for loss of job/closure of unit/lack of employment opportunities showed.

Status of migration in India:

- The all-India migration rate was 28.9 percent in 2020-21.
- Nearly 26.5 percent migration rate in rural areas.
- The rate of migration was 34.9 percent in urban areas.
- Females have recorded a higher share of migration rate of 47.9 percent, with 48 percent in rural areas and 47.8 percent in urban areas.
- The migration rate for males was seen at 10.7 percent, with 5.9 percent in rural areas and 22.5 percent in urban areas.
- Among females, the highest level of migration rate was seen at 86.8 percent for marriage.
- Among males, nearly 49.6 percent of the males migrated in search of employment opportunities.

ADDITIONAL INFORMATION

- Migration:** Migration is the movement of people away from their usual place of residence, across either internal (within country) or international (across countries) borders.
- The latest government data on migration comes from the 2011 Census.
- Internal migration can be classified on the basis of origin and destination.
- One kind of classification is: i) rural-rural, ii) rural-urban, iii) urban-rural and iv) urban-urban.



RIGHT TO ABORTION

The U.S. Supreme Court has nullified the Right to abortion

About

- The U.S. Supreme Court (in *Dobbs vs Jackson Women's Health Organization*), has taken away the constitutional right to abortion by overturning 'Roe vs Wade, 1973' and 'Planned Parenthood vs Casey, 1992' judgements.
- In both 'Roe vs Wade, 1973' and 'Planned Parenthood vs Casey, 1992' judgements, the Supreme Court of USA had established restrictions on abortion as unconstitutional.
- After the recent judgement it will be upto States to decide whether to ban abortion and at what stage in pregnancy and under what circumstances.

Indian statute on abortion

- The Medical Termination of Pregnancy (MTP) Act was brought into force in 1971 and amended in 2021.
- MTP act allows abortion in certain circumstances on the opinion of a single registered medical practitioner up to 20 weeks of the gestational age and the opinion of two registered medical practitioners is required from 20 weeks up to 24 weeks.
- Under the 2021 Act, medical termination of pregnancy is permitted if it is backed by medical opinion and is being sought for at least one of the following reasons:
 - ♦ If the continuation of pregnancy would involve a risk to the life of the pregnant woman
 - ♦ If its continuation would result in grave injury to the woman's physical or mental health
 - ♦ In the case of a substantial risk that if the child was born, it would suffer from serious physical or mental abnormality
- The pregnancy can be terminated upto 24 weeks of gestational age after the opinion of two registered medical practitioners under these conditions —
 - ♦ If the woman is either a survivor of sexual assault or rape or incest.
 - ♦ If she is a minor.
 - ♦ If her marital status has changed during the ongoing pregnancy (i.e. either widowhood or divorce).
 - ♦ If she has major physical disabilities or is mentally ill
 - ♦ On the grounds of foetal malformation incompatible with life or if the child is born, it would be seriously handicapped.
 - ♦ If the woman is in humanitarian settings or disaster, or emergency situations as declared by the government.
- Beyond the 24-week gestational age, termination of pregnancy can be done on the grounds of foetal abnormalities if a four-member Medical Board gives permission to do so.

Other aspects of abortion

- In the Justice K.S. Puttaswamy vs. Union of India and others, the Supreme Court held that whether to continue a pregnancy or not is part of a person's right to privacy under Article 21.
- The Calcutta High Court has allowed a medical abortion in the 34th week of pregnancy as the foetus was diagnosed with an incurable spinal condition.

Challenges in accessing safe abortion care.

- **Lack of awareness-** women and transgender people are not aware that abortion is legal or know where to obtain one safely.
- **Stigma-** unmarried and transgender people continue to face stigma and can be turned away from health facilities, forcing them to resort to unsafe care;
- **Mandatory reporting-** Mandatory reporting requirements impact privacy and hinder access of adolescents to safe abortion services;
- **Coercion for permanent contraceptive-** many are still coerced into agreeing to a permanent or long-term contraceptive method as a prerequisite for getting abortion services
- **Moral policing-** health-care providers impose their own morality by insisting on 'husbands' or 'parental' consent for abortion.
- **Mistreatment-** Women seeking abortion care in health facilities are often mistreated and not provided medications for pain relief;
- **Illegal Abortions-** Despite Pre-Conception and Pre-Natal Diagnostic Techniques Act 1994 prohibiting sex determination, the illegal practice persists. The mushrooming of unregulated ultrasound clinics in India continues to facilitate the illegal practice of sex determination, resulting in unsafe abortions and female foeticide.
- **No abortion at will-** law does not permit abortion at will, which pushes women to access illicit abortions under unsafe conditions resulting in 800000 unsafe and illegal abortions annually.
- **Lack of facilities-** The MTP Act requires abortion to be performed only by doctors with specialisation in gynaecology or obstetrics. However, there is a 70% shortage of obstetrician-gynaecologists in rural India.
- As per a 2014 study abortions account for 10% of maternal deaths in India.
- As per the National Family Health Survey 2019-2021
 - ♦ 3% of all pregnancies in India result in abortion.
 - ♦ 53% of abortions in India are performed in the private sector, and only 20% are performed in the public sector as public facilities often lack abortion services.
 - ♦ More than a quarter of abortions (27%) are performed by the woman herself at home.

THE LARGEST PLANT IN THE WORLD

A group of researchers from Flinders University and The University of Western Australia has recently discovered the world's largest plant in the West Coast of Australia.

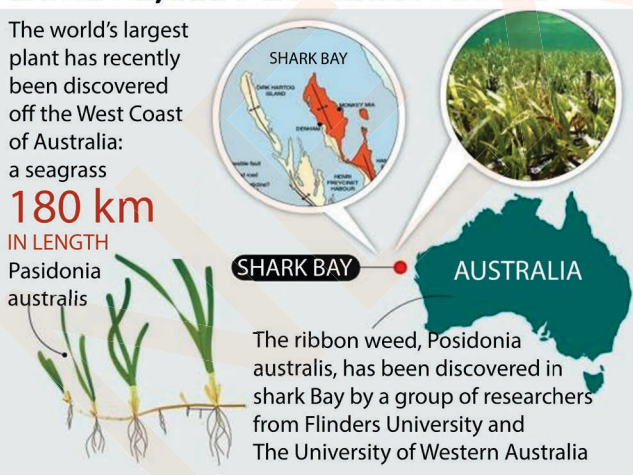
About:

- The ribbon weed, or *Posidonia australis*, has been discovered in the shallow water of the World Heritage Area of Shark Bay.
- The ancient specimen of an incredibly resilient seagrass stretches across 180km, covering an area of 20,000 hectare.
- It is estimated to be at least 4,500 years old.
- The plant has double the number of chromosomes than other similar plants making it a polyploid. It has managed to survive the volatile atmosphere of the shallow Shark Bay.
 - ♦ Whole-genome duplication through polyploid occurs when diploid 'parent' plants hybridize. The new seedling contains 100 per cent of the genome from each parent, rather than sharing the usual 50 per cent.

A 4,500-YEAR OLD PLANT, SPREAD OVER 20,000 FOOTBALL FIELDS

The world's largest plant has recently been discovered off the West Coast of Australia:

a seagrass
180 km
IN LENGTH
Posidonia australis



How did the plant grow and survive for so long?

- The plant took root in Shark Bay in the Harappan era. Then it kept spreading through its rhizomes.
- Ribbon weed rhizomes can usually grow to around 35cm per year, which is how the scientists arrived at its lifespan of 4,500 years.

- The researchers found that the ribbon weed cannot spread its seeds, something that helps plants overcome environmental threats.
- The ribbon weed has managed to survive the fluctuations in temperature and salinity and lots of light, conditions challenging for any plant.
- Polyploid plants often reside in places with extreme environmental conditions, are often sterile, but can continue to grow if left undisturbed.

Significance of sea grass:

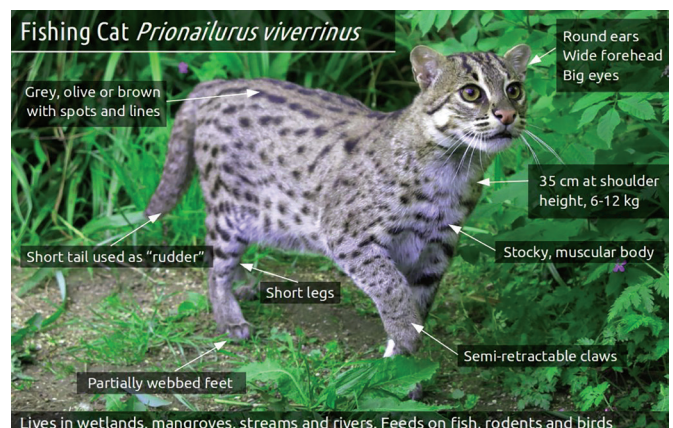
- Seagrass performs a vital role in the environment, and if some of it is hardy, it is good news for everyone in a world threatened by climate change.
- Apart from being home to a variety of small organisms, seagrass traps sediments and prevent water from getting muddy, absorb carbon from the atmosphere, and prevent coastal erosion.

FISHING CAT CENSUS

Recently, world's first fishing cat census was conducted in Chilika lake in Odisha.

About:

- The census was conducted by Chilika Development Authority (CDA) in collaboration with The Fishing Cat Project (TFCP).
- The Chilika Lake, (known as Asia's largest brackish water lagoon) has 176 fishing cats.
- This census was the world's first population estimation of the fishing cat conducted outside the protected area network.



Procedural Details of the census:

- As per the CDA, the census was conducted in two phases.
 - Phase-I:** Conducted in 2021 in the 115 sq km marshland present in the north and north-eastern section of Chilika and its surrounding areas.
 - Phase II:** Conducted in 2022 in the Parikud side along the coastal islands of Chilika.
- In two phases, a total of 150 camera traps were deployed. Each camera was fixed in the field for 30 days.
- Spatially Explicit Capture Recapture (SECR) method** was used for data analysis.
- A participatory exercise with multiple stakeholders:** Local fishermen and villagers, Chilika Wildlife Division staff, some graduate and post-graduate students participated actively in the estimation exercise.

Fishing Cat:

- Nature:** It is a nocturnal animal.
- Prey Base:** Fish, frogs, crustaceans, snakes, birds, and scavenges on carcasses of larger animals.
- Adaptation:** It is an adept swimmer and is also able to dive underwater to catch the fish.

Protection Status:

- IUCN Status:** Endangered (High threat of extinction in the wild).
- The Convention on International Trade in Endangered Species (CITES):** Appendix II Article IV of CITES (governs international trade in this species).
- Indian Wildlife (Protection) Act, 1972:** Schedule I (Protected from hunting).

Habitat:

- Asia:**
 - These globally threatened cats occur in wetlands like marshlands, mangroves and flooded forests in major South and Southeast Asian river basins.
 - It covers the area from Indus in Pakistan to Mekong in Vietnam and in the island nations of Sri Lanka and Java.
 - They are found in 10 Asian countries however they remain undetected in Vietnam and Java since the last decade.
- India:** Fishing cats are mainly found:
 - In the mangrove forests of the Sundarbans
 - On the foothills of the Himalayas along the Ganga and Brahmaputra river valleys and
 - In the Western Ghats

Threats:

- Destruction of wetlands:** Wetlands in India are constantly under the threat of destruction due to human settlement, drainage for agriculture, pollution, and deforestation etc.
- Poaching:** The fishing cat is increasing under threat of poaching by hunters for its skin.
- Depletion of its prey-fish due to unsustainable fishing practices.

Importance of the fishing census:

- The status of many wetland species is still understudied and highly threatened. Tracking and monitoring specialist species like the fishing cat indicates effect on wetland ecosystems.
- Proper data on the current status of the wetlands is absent because of their rapid destruction. Upon documentation of the census data, effective safeguards against climate change and droughts can be established.

Steps taken for fishing cat and its habitat conservation:

- CDA had already declared its intention to adopt a five year action plan for fishing cat conservation in Chilika in collaboration with TFCP.
- They have been conducting a year long patrolling and monitoring programme on the cat and its sympatric species.
- CDA and TFCP have further planned to:**
 - Prevent wetland conversion by promoting sustainably and traditionally harvested wetland products.
 - Establish a rescue and rehabilitation center.
 - Promote small-scale experiential and educative wetland tourism.
 - Adopt habitat restoration programs as well as education programs.

NTPC'S BIODIVERSITY POLICY 2022

Recently, National Thermal Power Corporation Limited (NTPC) has released Biodiversity Policy 2022.

About:

- NTPC Ltd is India's largest integrated energy producer and has issued a renewed Biodiversity Policy 2022.
- Aim:** To establish a comprehensive vision and guiding principle for conservation, restoration and enhancement of biodiversity.

NTPC's Biodiversity Policy 2022:

- **Purpose:** Given the strategic and tactical importance of biodiversity, NTPC's Environmental Policy incorporates Biodiversity Policy as its integral part.
 - ♦ Its objectives are in tune with NTPC's environmental and sustainability policies.
- NTPC group promotes all the professionals to contribute towards the achievement of the targets in the field of environmental conservation and sustainability.
 - ♦ Hence, a renewed policy is designed to support such professionals in meeting such targets.
- NTPC's policy is also in line with the United Nations Convention on Biological Diversity (CBD) and National Biodiversity Action Plan (NBAP) 2008 which recommends a set of actions towards biodiversity management.
- **Policy Statement:**
 - ♦ NTPC, in all the decision-making processes, has planned to adopt a precautionary approach for sustainable management of biodiversity.
 - ♦ It aims to ensure the protection of Earth's biodiversity in and around the NTPC's business units.
 - ♦ The policy also aims to adopt systematic consideration of local threats to biodiversity beyond the company's business activities.

BIODIVERSITY

- Biodiversity refers to the variety of living species on Earth, including plants, animals, bacteria, and fungi.
- Every single individual lifeform from the smallest bacteria in the soil to the largest whale in the sea, is a component of Earth's biodiversity.
- Each species and organisms in biodiversity work together in ecosystems, like an intricate web, to maintain balance and support life. Biodiversity supports everything in nature that we need to survive: food, clean water, medicine, and shelter.

About NTPC and its Biodiversity Policies:

- NTPC has always been mindful about avoiding operations in areas with the highest biodiversity value and judiciously selecting project sites.
- It seeks to adopt a precautionary approach for sustainable management of biodiversity in all the decision-making processes to ensure the Earth's variety of life in and around the business units of NTPC.
 - ♦ NTPC has the distinction of being the first PSU to issue a Biodiversity Policy in 2018.

- It also became a member of the India Business & Biodiversity Initiative (IBBI) in 2018.
- **Project:** NTPC has signed a five-year agreement with Andhra Pradesh Forest Department for conservation of Olive Ridley Turtles in the coastline of Andhra Pradesh.
 - ♦ NTPC gave a financial Contribution of Rs. 4.6 Crores and ensured increased participation of the community in the project.
 - ♦ NTPC's intervention resulted in 2.25 times increase in the number of hatchlings released in sea water.

Significance:

- Overall conservation will increase with participation from business/firm's side.
- Better practices of conservation will be known and will yield better results.
- Grass root participation will make people feel more connected to the cause.
- Biodiversity offers goods and services that provide the world's natural living infrastructure and are essential for a well-functioning global economy.
- It is estimated that approximately 40% of the world's economy is based on biological products or processes.

CHELONOIDIS PHANTASTICUS

*A surviving member of *Chelonoidis Phantasticus* has been identified recently.*

Chelonoidis Phantasticus:

- It is commonly referred to as Fernandina Island Galápagos giant tortoise.
- It is a giant tortoise which belongs to Galápagos species and was considered extinct for around a century.
- It has an extraordinary morphology of the male specimen, with extreme flaring of its marginal scutes and unusually prominent 'saddlebacking' of the front section of the carapace.

About:

- The last member of the Galápagos species was found in 1906 prior to the present one in 2019 in Fernandina Island in Galapagos archipelago, Ecuador.
- Initially, after it was discovered in 2019, ecologists doubted that it was actually a native Phantasticus tortoise as it differed in appearance from the male historical specimen.
- Though certain scientists were of the opinion that the tortoise stunted growth may have distorted her features.

- **Species Identification:**

- ♦ To determine the species of the tortoise definitively, complete genome sequencing was done and was compared to the genome recovered from the specimen collected in 1906.
- ♦ Researchers have ascertained that the member belongs to the *Chelonoidis Phantasticus* species in the paper 'Nature Communications Biology' recently.

UN RESOURCES FOR CLIMATE DISASTERS ARE INSUFFICIENT

UN cannot provide poor countries enough humanitarian relief to recover from climate disasters as rich donor countries are holding back their finances

About

- In a research published by Oxfam International, it has been mentioned that the United Nations needs eight times as much climate finance today as it did 20 years ago in order to be able to offer humanitarian help to low-income countries amid climate-related disasters.
- Rise in temperature of the earth will lead to multiple devastating disasters like:
 - ♦ 2.5°C of global warming- may increase the frequency of cyclones by twice as often as today.
 - ♦ 1°C of global warming - extreme daily precipitation events may intensify by about 7% .
 - ♦ Heat stress from extreme heat and humidity could annually affect 1.2 billion people by 2100.
 - ♦ Coastal flooding events could threaten assets worth up to 20% of the global GDP by 2100.
 - ♦ By 2030, fire season could be three months longer in areas already exposed to wildfires

Status of Climate Disaster Funding

- The impacts of climate change are already being felt in all regions, but disproportionately so in lower-income countries. This is while a small handful of high-income countries are largely responsible for causing climate change.
- The UN made a request for \$1.6 billion in humanitarian relief in 2000–2002. In 2019–2021, the amount under appeal increased by an extraordinary 819%, averaging \$15.5 billion.
- In the previous five years, wealthy nations have only been able to fulfil 54% of UN pleas, leaving a staggering \$28–\$33 billion imbalance.
- It was made clear in the most recent IPCC 6th Assessment Report that there would be more climate-related catastrophes in the future, and as a result, the loss and harm sustained by

these disadvantaged populations will increase as a result of climate change.

- Further, the Oxfam Report pointed out that for every \$2 needed for the UN's humanitarian aid, rich donor countries provide \$1.

About Climate Finance

- In order to meet the emission -cutting targets and adapting to the already vast impacts of climate change have high costs.
 - ♦ Investments in energy transitions alone are expected to cost an additional US\$830 billion a year if the 1.5-degree Celsius target is to be met.
- In the 2009 Copenhagen Accord (UNFCCC, 2010), and confirmed in the Cancun Decision (UNFCCC, 2011) and Durban Platform (UNFCCC, 2012), developed countries pledged to deliver finance approaching USD 30 billion between 2010 and 2012.
 - ♦ The Paris Agreement reiterated that developed countries should take the lead in mobilising climate finance.
- Over the last three decades, an international climate finance architecture has emerged to channel domestic and international funds towards mitigation and adaptation efforts.
- There are various channels through which funds for climate change are being collected, ex- Green Climate Fund, Global Environment Facility etc.

Loopholes in Climate Finance

- In 2009, during COP15, wealthier countries pledged that by 2020, they would mobilise \$100 billion per year in financing from a variety of sources. So far, however, that promise has gone unfulfilled as financing was still \$20 billion short of the goal in 2018.
- About 70 percent of funding between 2013 and 2018 went to mitigation efforts, while only 21 percent went to adaptation, the most pressing need for developing nations.
- Climate finance has increasingly come in the form of loans rather than grants, posing a daunting hurdle for developing countries. And borrowing often comes at a high cost.

Paris Agreement and Climate Finance

- Countries recognized the need for specific climate financing in the Paris Agreement which calls for "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development."
- Developed countries committed to jointly mobilise US\$100 billion per year by 2020, from a variety of sources, to address the pressing mitigation and adaptation needs of developing countries.

OXFAM INTERNATIONAL

- **Genesis:** It was founded in 1995 Oxfam International is a confederation of nonprofit organisations that focuses on reducing worldwide poverty.
- **Aim:** It aims to maximise efficiency and achieve greater impact to reduce global poverty and injustice. It is based in Nairobi, Kenya.

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

- **Genesis:** The UNFCCC was signed in 1992 at the United Nations Conference on Environment and Development
- **Objective:** It constitutes the foundational climate agreement that has provided the platform for most subsequent international climate agreements.

ABOUT IPCC

- The Intergovernmental Panel on Climate Change (IPCC) is the UN group in charge of evaluating climate change science.
- **Establishment:** The World Meteorological Organisation (WMO) and the UN Environment Program established the IPCC in 1988 (UNEP).
- **Objectives:** Its primary objective is to create methodological studies, special reports, and assessment reports that evaluate the current level of our understanding of climate change.

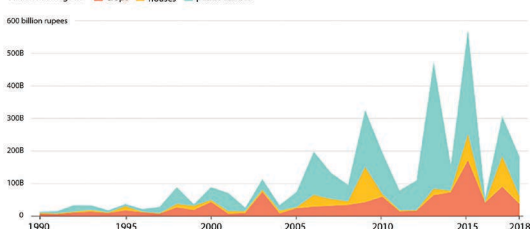
CLIMATE DISASTER: INDIAN PERSPECTIVE

- UN reports document that India is the seventh most climate-change affected country, and major cities like Mumbai and Kolkata are at risk of drowning by 2050. Along with intensifying storms, floods are becoming common.
- A study published by The Lancet Planetary Health concluded that nearly 740,000 excess deaths in India annually could be attributed to abnormal hot and cold temperatures related to climate change.
- As the climate crisis worsens, floods pose a particular danger to the 35% of India's population – roughly 472 million people – who live in urban slums, according to the World Bank.

REPEATED FLOODS HAVE DISRUPTED LIVELIHOODS AND CAUSED CHRONIC DISPLACEMENT AMONG INDIA'S POOR

Between 2014 and 2018, India lost an average of 255 billion rupees (\$3.7 billion) each year in houses, crops and public infrastructure.

Value of damage in: crops houses public utilities



Way Forward:

- Stepped up action by the G20 to reduce greenhouse gas emissions to meet the 1.5-degree target must be a global priority. Preventing and reducing disaster risk needs to be central to these
- Government policies, plans, and programmes must be designed to operate under a range of risk scenarios. Governments need to upgrade climate and disaster risk analytics to better account for systemic risks, knock-on impacts, and the medium to long term effects of various climate scenarios.
- The disaster risk reduction community has decades of experience in managing extreme events and reducing risk related to potential climate-related disasters. Their experience needs to be harnessed for planning and the scaling-up of adaptation actions.
- National Adaptation Plans (NAPs), Nationally Determined Contributions (NDCs), national and local development plans, spatial and sectoral planning processes need to apply comprehensive risk management principles.

HAOR DESTRUCTION

The traditional wetlands (Haors) of Sylhet, in Bangladesh have been destroyed.

About Haors

- Wetlands of Sylhet region are known as the Haors.
- These are bowls or saucer-shaped shallow depressions and are also categorised as backswamp.
- They are located between the natural levees side of Surma and Kushiya river system.
 - ♦ During the monsoon, Haors receive surface runoff from rivers and canals to become vast stretches of water.

About Wetlands

- The Ramsar Convention's definition of wetlands (Article 1) is as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres."
- Wetlands are found from tundra to the tropics and on every continent except Antarctica. Wetlands may support both aquatic and terrestrial species.
- The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes) and promote the development of characteristic wetland (hydric) soils.

RAMSAR CONVENTION

- It is an international treaty to raise awareness about the conservation and protection of wetlands around the world.
- The convention was held on 2nd, february, 1971 in the Ramsar city of Iran. The 2nd february is marked as World Wetland day.
- The Conference of the Contracting Parties (COP), the convention's policy-making body, convenes every three years with representatives from the contracting parties to discuss decisions (resolutions and proposals) that will help the parties better carry out the convention's goals.
- **Ramsar Sites:** India Has 49 Ramsar sites. Khijadia Wildlife Sanctuary in Gujarat and Bakhira Wildlife Sanctuary in Uttar Pradesh are newly inducted Ramsar sites.

The Montreux Record:

- The Montreux Record is a register of wetland sites on the List of Wetlands of International Importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference. It is maintained as part of the Ramsar List
- The Montreux Record was established in 1990 after the recommendation of the Conference of the Contracting Parties (1990).

Benefits of inclusion in Montreux Record:

- It would assist Contracting Parties in their domestic commitment to resolve the adverse changes.
- Highlighting particularly serious cases would be beneficial at national and/or international level.
- Inclusion on the Record would provide guidance in the allocation of resources available under financial mechanisms.
- The Bureau can also provide technical assistance known as Ramsar Advisory Mission, on the request of the Contracting Party.

Montreux Record Sites in India:

- Keoladeo National Park(Rajasthan)
- Loktak Lake(Keibul Lamjao National Park)
- In 1993 Chilka lake was also listed in Montreux record due to the problem of Siltation, But later in 2002, it was removed from the list

- This can help to stabilise, rejuvenate or enrich ecosystems in areas around wetlands.
- Many animals have wetlands as their homes. Birds such as herons, fish and amphibians all make their homes in these sorts of places.
- They offer the perfect place for animals to be safe and hidden from predators – perhaps from the air – as well as providing a great deal of diverse foodstuffs such as grasses, mosses and other plant life.
- They act as water purifiers by filtering the polluted water.
- They are also capable of erosion Control. Riparian wetlands, salt marshes, and marshes located at the margin of lakes protect shorelines and stream banks from erosion.
- The roots of wetland plants hold soil in place and can reduce velocity of stream or river currents.

Causes of destruction of Wetlands:

- Increasing population density in the catchment areas which is the result of rapid urbanisation.
- Wetlands suffer damage when they are drained for agricultural and building purposes.
- Wetland habitats suffer when invasive species are introduced there.
- The flora and fauna of wetland ecosystems are being harmed by pollution of wetlands caused by human activities like the dumping of industry waste.
- Another significant element that poses a threat to wetlands is climate change.
- Dam construction changes the water flow to wetlands, which affects how healthy they are.
- The wetlands are harmed by the removal of sand and shells.

Wetlands (Conservation and Management Rules) 2017:

- The Ministry of Environment, Forest and Climate Change (MoEF&CC) has notified Wetlands (Conservation and Management) Rules, 2017 under the provisions of the Environment (Protection) Act, 1986 as the regulatory framework for conservation and management of wetlands in India.
- This is a significant step to conserve, manage and maintain the ecological character of the wetlands without restricting the wise use.

Salient Features of Rules:

- State Wetland authority was set up in every state and Union territory.
- A comprehensive list of activities will be developed to be regulated and permitted within the notified wetlands and their zone of influence.

Importance of Wetlands:

- They prevent flooding by releasing water back into waterways and surrounding areas – although they do so slowly.
- The releasing of vegetative matter also provides an essential in the amount of nutrients, seeds and other matter going into streams and rivers, not to mention other creatures.

- The rules prohibit activities like conversion of wetland for non-wetland uses including encroachment of any kind, setting up and expansion of industries, waste dumping and discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements.
- Mandatory for state authorities to prepare a list of all wetlands and list of wetlands to be notified within six months. Based on it, a comprehensive digital inventory of all wetlands will be created and will be updated every ten years.
- The National Wetlands Committee was set up headed by the Ministry of Environment, Forest and Climate Change (MoEF&CC). This will be headed by the secretary of the Ministry.

BAMBOO-DWELLING BAT

Scientists have discovered a new species of bamboo-dwelling bat in Ri Bhoi district of Meghalaya.

About

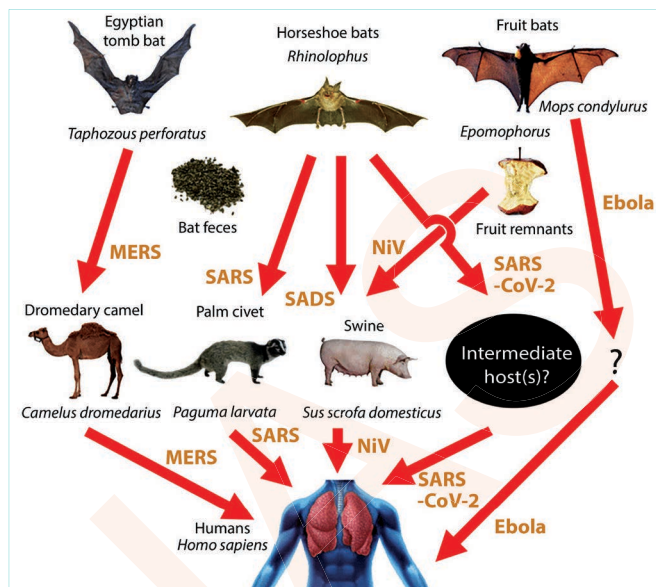
- The species, found near the forested patch of Nongkhylliem Wildlife Sanctuary, has been named *Glischropus meghalayanus*.
- The present discovery is the first report of a thick-thumbed bat not only from India but also from South Asia.
- Thick-thumbed bats of the genus *Glischropus* are currently composed of four recognised species from Southeast Asia.

Bamboo-dwelling bats

- Bamboo-dwelling bats are a particular kind of bats living in the internodes of bamboos with specialized morphological characters that help them to adapt to the life inside a bamboo.
- With this new discovery, the total number of bat species known from India stands at 131.

Ecological Significance of Bats

- Bats are the only mammals with the ability to fly and are essential members of the global ecosystem and humans benefit from their presence in many ways.
- They are involved in seed dispersal and pollination activity
 - ♦ Tropical bats are vital – as an example – in rebuilding cut down forests and in the pollination of wild plants such as bananas, avocados and dates.
- These flying mammals are the major predators of night insects, including crop and human pests.
- Their guano (excreta) is rich in nitrogen, is used as biological fertilizer.



Bats and Human Health

- Zoonoses are human diseases of animal origin.
- Bats are natural reservoir hosts and sources of infection of several microorganisms including viruses and bacteria.
- Bats are recognized as carriers of different families of viruses most of which are emerging as human pathogens - such as Ebola and Marburg viruses, Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) coronaviruses and SARS-Cov-2 (Coronavirus).
- Bats are the leading cause of rabies deaths in people.
- Bat bites can be very small so a person might not always know when they have been bitten by a bat.
- More than 200 viruses have been associated with bats, and almost all are RNA viruses probably owing to their great ability to adapt to changing environmental conditions.

MEGHALAYA: A HEAVEN FOR BATS

- Meghalaya, a State with a small geographical area, harbours the highest bat diversity, about 51% of total bat species, in the country.
- Meghalaya, because of its unique terrain, vegetation and climate condition, was a haven for both flora and fauna.
- The unique caves in the northeastern State provided roosting opportunities for a large number of bats.
- There were a number of cave-dwelling bats species from Meghalaya, the most common being Horseshoe bat and Leaf-nosed bats.

BEDTI-VARADA RIVERS INTERLINKING

The project to link the Bedti and Varada rivers in Karnataka have been criticized by different environmental groups.

About:

- Thousands of people and activists have been protesting against the river interlinking project on account of being termed as 'unscientific' and a 'waste of public money'.
- The activists fear that the project might not ensure water supply to the places meant as intended beneficiaries.
 - It would largely benefit contractors, cement, iron and granite industries and politicians lobbying groups.
- Without the feasibility studies, the project can cause catastrophic damage to the environment.
 - It can cause loss of over 500 acres of forests.
- Since both the rivers are ephemeral, they do not have sufficient water availability to meet the domestic and farming water requirements of surrounding three districts.

About the project

- Genesis:** The Bedti-Varada project was proposed in 1992 by the then government to supply drinking water.
- Recent revival:** Former Karnataka Chief Minister had announced its revival in his budget speech in 2021.
- Interlinking of rivers:** The project is envisaged to link the Bedti river flowing west into the Arabian Sea, with the Varada river, a tributary of the Tungabhadra river, which flows into the Krishna river, which in turn flows into the Bay of Bengal.
- Dams:** As a part of the project, a massive dam will be built at Hirevadatti in Gadag district of Karnataka. One more dam will be built on the Pattanahalla river at Menasagoda in Sirsi, Uttara Kannada district.
- Connecting channels:** These dams will use tunnels of length 6.3 kilometers and 2.2-km to carry water to the Varada river.
 - The water will reach a place called Kengre. Afterwards, through a downward 6.88 km tunnel, the water will go to Hakkalumane joining the Varada river.
- Water redistribution:**
 - The project plans to lift water from the water surplus Sirsi-Yellapur region of Uttara Kannada district to the water deficit arid Raichur, Gadag and Koppal districts.
 - A total of 302 million cubic meters of water from Pattanahalla and Shalmalahalla tributaries of the Bedti and Varada rivers.
 - Also, 222 million cubic meters of water will be drawn from the Suremane barrage built against the Bedti river.

Concerns related to the project:

- Feasibility issues:** The National Water Development Agency (NWDA) has given the project plan. However, activists claim it is not as straightforward as it is projected.
 - To pull the water to Gadag, 61 megawatts of power is needed.
 - It is not clear if the water would reach Gadag as planned.
 - It is difficult to redirect a westward-flowing river to flow eastward.
- Non-perennial nature:** In early summer, the Bedti and Varada rivers begin to dry up.
 - Both the rivers are not perennial, making government scientists plan to interconnect them difficult to implement.
- Expert inputs not incorporated:** Activists are criticizing that the irrigation department detailed project report (DPR) was prepared without assessing the water availability.
 - Also, observation of the NWDA report on the interconnection of the Bedti-Aghanashini and Varada rivers was not incorporated.
- Biodiversity Threat:** The International Union for Conservation of Nature (IUCN) has designated the Bedti river valley as an active biodiversity zone.
 - The valley area is home to 1,741 types of flowering plants, 420 species of birds and animals.
 - The river nutrients sustain fish stocks, especially in the Bedti's estuary in Dedi.
 - The river valley acts as a corridor for 35 different animal species.
 - Therefore, the project will cause significant damage to the flora and fauna.
- River dependence:**
 - The Bedti is known as Gangavali in the estuary region.
 - Thousands of farmers in the Malenadu region (the foothills of the Western Ghats) and fishing communities along the coast are dependent on the Bedti and Varada rivers for irrigation and livelihood.
- Previous experience:**
 - The environmentalist groups claim that none of the 30 river-linking projects completed in the last 20 years were operational.
 - For example, the project to bring thousand million cubic feet of water from Yettinaholey to Kolar.

Way Forward:

- The project experts claim that the river interlinking project will ensure enough water supply for the arid districts, after the dams and weirs are built.
- However, actual work on the project should be started only after the Environmental Impact Assessment (EIA), Detailed Project Report (DPR) with NWDA findings are completed transparently.

A NEW SPECIES OF GECKO FOUND IN ANDHRA & ODISHA

Scientists have recently discovered a new species of leopard gecko (genus Eublepharis) living in the forests of the Indian states of Odisha and Andhra Pradesh.

About:

- Eublepharis, also known as the Painted Leopard Gecko, is a small genus in the lizard family Eublepharidae.
 - Eublepharidae contains 44 species in six genera.
- The genus was first described in 1827 and is currently represented by seven species of which five are known from India.
 - Researchers had initially identified the specimen as an East Indian Leopard Gecko (*Eublepharis hardwickii*).
- Eublepharis pictus* is strictly nocturnal and has been observed actively foraging along trails in the forest after dusk. While foraging, the species has been observed licking surfaces as it moves, likely the tongue is used as a sensory organ.

Conservation Status:

- IUCN - Near Threatened (NT)

Habitat:

- The newly-discovered species, *Eublepharis pictus*, prefers dry evergreen forests mixed with scrub and meadows. Geographically the two species appear to be separated by the Brahmani River.
- Distributed in parts of North and Central America, West and East Africa, Middle East, South Asia and the Malayan Archipelago.

Threats:

- According to the researchers, *Eublepharis pictus* occurs outside protected areas.
- Most leopard geckos are killed when encountered and awareness about the species being harmless would be beneficial for the species.

GREEN JOBS

Recently, the Prime Minister lauded India's consistent efforts to combat climate change on the occasion of the World Environment Day.

About:

- The PM praised India's efforts to create 'green jobs' w.r.t responsible environmental decisions and effectiveness.

- Green Jobs are a class of jobs having a direct positive impact on the planet and contribute to the overall environmental welfare.
- They help in reducing the negative environmental impact of various sectors of the economy by improving energy and raw material efficiency.
- Such jobs also promote the process of creation of a low-carbon economy or decarbonisation to maintain a sustainable economy.
- These include jobs in renewable energy, conservation of resources, ensuring energy efficient means.

Indian Scenario:

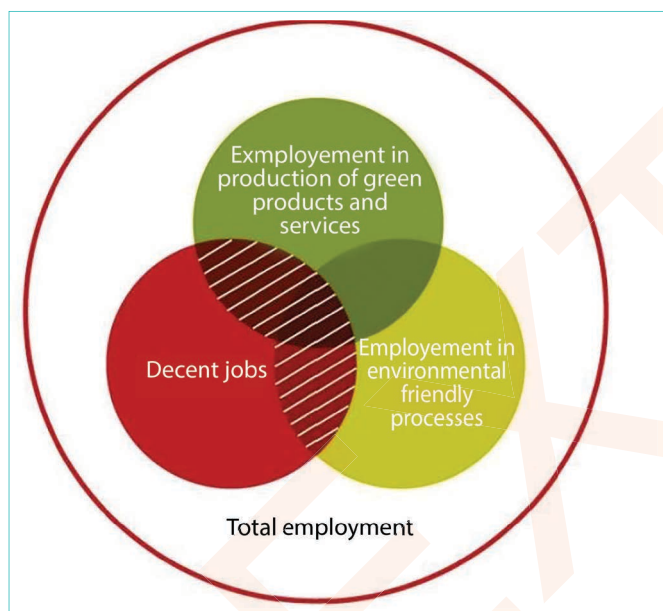
The Skill Council for Green Jobs: It was launched by the Government on October 1, 2015.

- It is aligned to the National Skill Development Missions.
- It was set up to be a not-for-profit, independent, industry-led initiative.
- It is promoted by the Ministry of New and Renewable Energy (MNRE) and the Confederation of Indian Industry (CII).
- The council's mandate is to help India's manufacturers and other service providers in 'green business' sector to implement industry-led, collaborative skills.
- This will enable India to realize the true potential and significance of 'green jobs'.
- The council advocates that awareness and training individuals on green jobs skills will help to:
 - Limit greenhouse gas emissions.
 - Minimizing waste and pollution.
 - Protect and restore ecosystems.
 - Support adaptation to the effects of climate change.
- International Labor Organisation (ILO):** As per ILO data:
 - India's shift to a green economy in the next decade has the potential to create about 3 million jobs in the renewable energy (RE) sector.
 - In 2017, this sector created around 47,000 new jobs and accounted for a 12% growth in one year.
- Growth vs. Development:** In India, the pursuit of an inclusive growth strategy for poverty reduction balanced with environmentally sustainable developmental paths are key concerns in the country's development.

Global Scenario

- The United Nations Environment Programme's Emissions Gap report 2019:
 - Paris Agreement Targets (2020-2030):** The report highlights the necessity to fulfill the target of reduction in greenhouse gas emissions by 7.6% per annum.
 - Failure in meeting these targets will be a failure to effectively combat global warming.

- ♦ Therefore, a decarbonised economy can ensure a greener, safer, healthier and more sustainable planet to inhabit.
- **Green Jobs Initiative:** It was collectively launched in 2008 collectively by:
 - ♦ The International Labour Organisation (ILO)
 - ♦ The International Trade Union Confederation
 - ♦ The United Nations Environment Programme
 - ♦ The International Employers Organisation.
- It supports a concerted effort by the governments, employers and trade unions to promote environmentally sustainable decent jobs in a climate challenged world.
- It aims to facilitate a just transition reflecting the environmental, social and economic pillars of sustainable development.



- **The United Kingdom:** Projected to have around 694,000 green jobs by 2030, reflecting an overall 11% growth every year in the green economy.
- **Cambridge Institute for Sustainability Leadership (CISL):** Observed that normalizing 'green jobs' in an economy needs systemic shifts where multiple organizations work in harmony.

Way Forward:

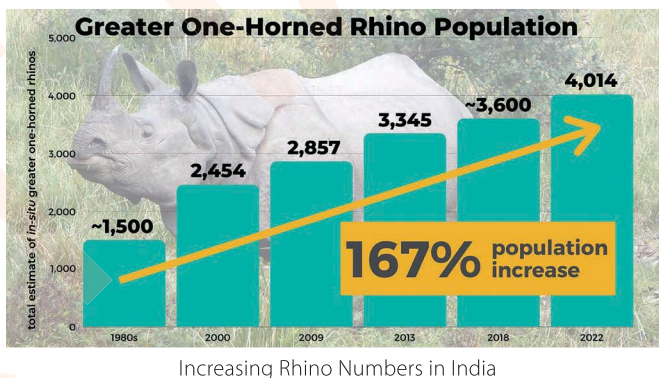
- India can greatly benefit from 'green jobs' in sectors like renewable energy, waste management, green transport and urban farming.
- All these sectors have a great potential to employ a steady supply of a trained workforce.
- To ensure such positive developments; an integrated and systematic approach is needed in policy spheres.

RHINO VISION 2020: CONSERVATION YIELDING RESULTS

Recently released 14th Assam Rhino estimation census indicated successful implementation of conservation measures under captivity.

About:

- Rhino from Manas National Park and Pobitora Wildlife Sanctuary were conserved under captivity in order to protect them from poachers for their horns.
- **Insurgency and illegal wildlife trade:** During the last decade of 20th century and first decade of 21st century, Assam was hit by insurgency due to demand for a separate homeland such as 'Bodoland' for ethnic groups inhabiting the state.
 - ♦ This led to illegal trade of wildlife, organs of wild animals e.t.c. to fund their respective movement.



RHINO VISION 2020

- Rhino Vision 2020 was launched in 2006 by Rhino Task Force constituted in 2005 in order to save Rhinos in wild as well as captivity.
- **Aim:** To increase the population of rhino in the state of Assam to 3,000 across seven protected areas.
- **Elimination Adversaries:** The second aim of this project was to eliminate every population danger that limits the Rhino population such as habitat destruction, poaching activities e.t.c.
- **Method of Conservation:** In this programme, some of the Rhinos were trans-located to comparatively safer habitats and reared till adolescent age while some were hand-reared at the Center for Wildlife Rehabilitation and Conservation at Kaziranga.
- **Considerable achievements:** The time period of vision ended in April, 2021 with the last 22 Rhinos trans-located to protected areas. The vision although successfully conserved a significant number of Rhinos but failed to achieve the target. In 2018, there were 2,413 Rhinos counted across Assam.

State of Rhinos in India

- Out of four species of Rhinos in the world, three are found in Asia and one is found in India. Only One-Horned Rhino is found in India.
- **State wise distribution:** In India, Assam alone has 91% of the Rhino population.
- Apart from it, Rhinos are also found in parts of Uttar Pradesh and West Bengal.
- **Highest Density:** Pobitora National Park in Assam has the highest density of Rhinoceros in India.
- **Highest Number:** Kaziranga National park has the highest number of Rhinoceros in India.
- **IUCN status:** Indian Rhino or Greater one-horned rhino is categorized as 'Vulnerable' by IUCN. It is also found in the Terai region of Nepal.
- Other species of Rhinos include Black rhino, White rhino, Javan rhino and Sumatran rhino, which are found globally. Their IUCN status is:

Rhino Species	IUCN Status
White Rhino	Near Threatened
Black Rhino	Critically Endangered
Javan Rhino	Critically Endangered
Sumatran Rhino	Critically Endangered

- **Wildlife Protection Act, 1972:** Greater one-horned rhino is listed under the Schedule I of the Wildlife Protection Act, 1972.

Important Findings of the Report

- **High Life expectancy:** The Pyramidal age structure of Rhinos of Manas national park has shown high life expectancy. It has been attributed to better conservation efforts during their childhood and adulthood.
- **Improved Sex Ratio:** The sex ratio of Rhinos in the park has been estimated at 1: 1. The report has not considered calves and sub-adults in the population.
 - ♦ The report has underlined the low birth rate as well as low death rate indicating a stable population growth in the park.
- **Anti-Poaching camps:** The improvement in numbers of individuals has been attributed to anti-poaching camps in which local community members are enrolled for protection.
- **Formation of Safe corridors:** The national park has limited the speed of vehicles in its periphery to 40km/hr and has installed speed cameras to prevent vehicles from attaining high speed.
 - ♦ The corridor provides safe passage by making wildlife corridors and will reduce the chances of hitting animals by vehicles with high speed.

Limitations of the census report

- The census was done by 'Total Count' estimation. 'Total count' refers to a method in which a single species is targeted to be counted in a defined and specific area.

- This method assumes detection probability as '1' meaning each and every animal in an area has a 100% chance of being seen and counted for census.
- This assumption is unrealistic as there are chances of missing animals who have escaped the population closure (unit area enclosed for counting numbers).

THE NEW DELHI DECLARATION ON ASIAN RHINOS 2019

- The New Delhi Declaration on Asian Rhinos 2019' was signed by the five rhino range nations.
- These nations include Bhutan, Nepal, Indonesia and Malaysia.
- The declaration aims to conserve three subspecies of Asian rhinos viz. Greater one-horned, Javan Rhino and Sumatran Rhino.
- The declaration vows to reassess the condition of Asian Rhinos every four year and the need for joint actions to secure their future.

Way Forward

- The 'Rhino Vision 2020' has resulted in higher life expectancy and increase in numbers of Rhinos in the wild.
- It has successfully trans located orphaned Rhinos and reintroduced them after captive raising at conservation projects.
- India must envisage better policy formulations to increase and stabilize numbers of Rhinos.

LIFE MOVEMENT

Recently, the Prime Minister launched a global initiative 'Lifestyle for the Environment (LiFE) Movement' on World Environment Day.

Key Takeaways from PM's address

- The PM stressed on the need of the hour to solve the challenge faced by our planet using human-centric, collective efforts and robust action that further sustainable development.
 - He asserted that the vision of LiFE is to live a lifestyle that is in tune with our planet and does not harm it while recalling Mahatma Gandhi talked about zero-carbon lifestyle.
- India's forest cover is increasing and so is the population of lions, tigers, leopards, elephants and rhinos.
- India's commitment to reach 40% of installed electric capacity from non-fossil fuel-based sources has been achieved, 9 years ahead of schedule.
- The target of 10% ethanol blending in petrol has been achieved 5 months ahead of the November 2022 target. This is a major accomplishment given that blending was hardly 1.5% in 2013-14 and 5% in 2019-20.
 - The PM reiterated that renewable energy has a very high focus in the government.

About LiFE Movement

- It is a global initiative to solve the challenge faced by planet earth using human-centric, collective efforts and robust action that further sustainable development.
- Aim:** to utilise the power of collective action and nudge individuals across the world to undertake simple climate-friendly actions in their daily lives.
- Vision of LiFE:** The movement promotes an environmentally conscious lifestyle that focuses on 'mindful and deliberate utilisation instead of 'mindless and wasteful consumption'.
 - It aims to replace 'use-and-dispose' economy with a 'circular economy', which would be defined by mindful and deliberate utilisation.
 - Those who live such a lifestyle are called 'Pro-Planet People'.
- Mission:** LiFE borrows from the past, operates in the present and focuses on the future.
 - It nudges to fuse concepts of 'Reduce, Reuse and Recycle' into our lifestyle.
- Objectives:** The movement seeks to leverage the strength of social networks to influence social norms surrounding climate.
 - The Mission plans to create and nurture a global network of individuals, namely 'Pro-Planet People' (P3), who

will have a shared commitment to adopt and promote environmentally friendly lifestyles.

- Through the P3 community, the Mission seeks to create an ecosystem that will reinforce and enable environmentally friendly behaviours to be self-sustainable.
- It was proposed by the Indian Prime Minister in 2021 at COP26 of the United Nations Climate Change Conference in Glasgow, U.K.
- 'LiFE Global Call for Ideas and Papers' Initiative:** Within the LiFE framework, the initiative has been put forth for inviting individuals, universities, think tanks, non-profits from across the world to submit measurable and scalable behavior change solutions that can drive climate-friendly behaviors among individuals, communities and organisations.

ABOUT EAST FRAMEWORK

- It is the framework that India has been using so far for behavioural change, social engineering and nudging the public's psychology in connection with the environment and climate.
- The acronym expands as follows:**
 - E- Easy (For conveying message in simple way)
 - A- Attractive (To make policies more worthy of public's time)
 - S- Social (Taking advantage of bandwagon effect)
 - T- Timely (Rolling out the policy when public is most receptive of the cause)

PM MODI'S 'PANCHAMRIT' ON CLIMATE CHANGE

India will reach its non-fossil energy capacity to 500 GW by 2030.

Indian will meet 50 per cent of its energy requirements from renewable energy by 2030.

India will reduce the total projected carbon emissions by one billion tonnes from now to 2030.

By 2030, India will reduce the carbon intensity of its economy to less than 45 per cent.

By 2070, India will achieve the target of Net Zero.

MANDATORY ECO-SENSITIVE ZONE

Recently, the Supreme Court (SC) mandated that every protected area across the country to have a mandatory eco-sensitive zone (ESZ).

Highlights of the Judgment

- **Minimum 1 km ESZ:** The SC directed that every protected forest, national park and wildlife sanctuary across the country should have a mandatory eco-sensitive zone (ESZ) of a minimum one km starting from their demarcated boundaries.
- **Responsible Trustee:** The apex court opined that the government should not only act as a facilitator of economic activities but also as a responsible trustee of the natural resources for sustainable development.
- **Mining Prohibited:** The Court directed that mining within the national parks and wildlife sanctuaries shall not be permitted.
- **Existing Buffer Zone:** In case, any protected forest already has a buffer zone extending beyond one km then it would prevail.
 - ♦ In cases, where the extent of the buffer zone was pending a statutory decision, then the court's direction to maintain the one-km safety zone would be applicable until a final decision is arrived at under the law.
- **Listing existing structure:** The Principal Chief Conservator for each State and the Union Territory has also been directed to make a list of subsisting structures within the ESZs and submit reports to the apex court in three months.
- Compliance held the Principal Chief Conservator of Forests and Home Secretaries of States responsible for the compliance of the judgment.

About Eco-Sensitive Zones (ESZs)

- ESZ refers to sensitive and fragile areas around protected forest, national park and wildlife sanctuary meant for protecting them.
- The zone is notified by the Ministry of Environment, Forests and Climate Change (MoEFCC) under the Environment Protection Act, 1986.
- **Objective:**
 - ♦ To create some kind of shock absorbers to the protected areas by regulating and managing the activities around such areas.
 - ♦ To create transition zones from areas of high protection to areas involving lesser protection.
- **Extent of ESZ:**
 - ♦ The ESZ can go upto 10 kms and even beyond as per MoEFCC guidelines depending on the topography, sensitivity of the region and other factors such as man-animal conflict, nearby line communications.
 - ♦ Furthermore, the width of ESZ around a Protected Area need not be uniform and should be need based.
- **Activities in ESZ**
 - ♦ **Prohibited Activities:** Commercial mining, setting of saw mills and industries causing pollution, commercial use of firewood, major hydro-power projects.

- ♦ **Regulated Activities:** Felling of trees, drastic change in agriculture systems, commercial use of natural water resources, including groundwater harvesting and setting up of hotels and resorts.
- ♦ **Permitted Activities:** Ongoing agriculture and horticulture practices by local communities, rainwater harvesting, organic farming, adoption of green technology and use of renewable energy sources.

Significance of ESZ

- ♦ It minimises the impact of anthropogenic activities on fragile Protected Areas.
- ♦ It reduces the man-animal conflict thus maintaining harmonious relations between the two.
- ♦ The zone strictly prohibits certain activities while regulating others thereby propagating sustainable development.
- ♦ It helps in In-Situ conservation of native species and their habitats.

KEIBUL LAMJAO NATIONAL PARK

Recently, protests have emerged against the government's decision to shift the heritage park site in Manipur.

About:

- Earlier, the State government of Manipur had announced that a heritage park would come up near the Keibul Lamjao National Park (KLNP) in Bishnupur district.
- Manipur Chief Minister had announced the heritage park will provide traditional thatched houses for the different communities.
- For effective in-situ conservation of Sangai (Brow-Antlered Deer), Forest Department of Manipur in collaboration with Wildlife Institute of India has developed a plan to reintroduce Sangai in the adjoining area having similar habitat.
- People and activists from villages surrounding the KLNP are protesting against relocation of the site to a place six km away from the KLNP.

Reasons for the protests:

People do not want the government to shift the proposed heritage park from the earlier government-approved site, because:

- They asserted that the people of the new proposed site are not associated with steps for the protection of the endangered Sangai in the KLNP.
- Whereas, the people around KLNP villages have been actively celebrating 'Sangai festival' every year for the creation of awareness and tourists attraction.
- People of Manipur are socially, economically, culturally and ecologically connected with the Loktak Lake and Keibul Lamjao National Park.

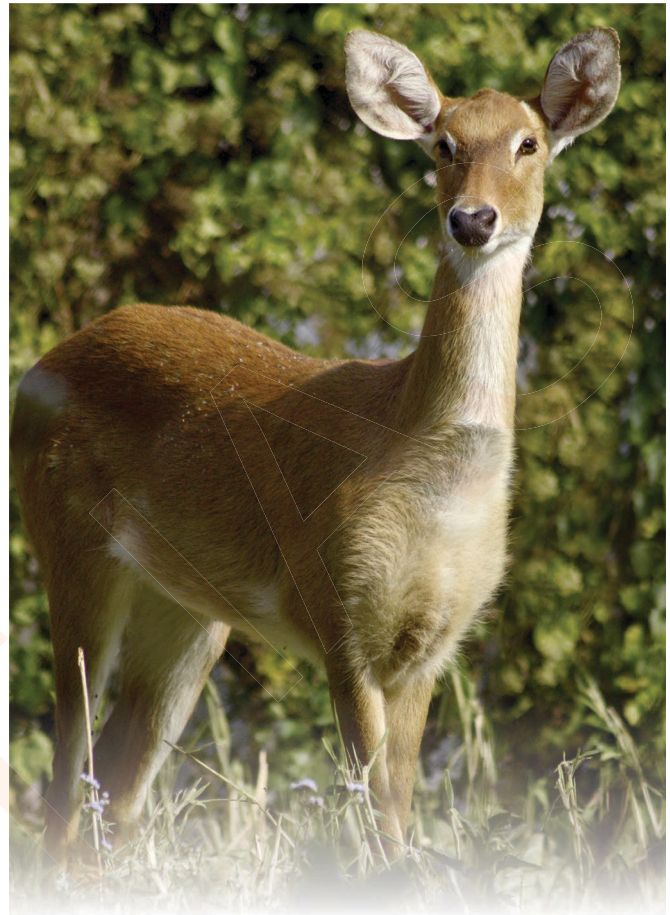
- The proposals were to set up the museum of the Indian National Army near the Loktak lake, where the first Indian flag of Independence was hoisted and the heritage park.
 - ♦ Both these would have attracted domestic and international tourists.

ABOUT KEIBUL LAMJAO NATIONAL PARK (KLNP)

- It is the natural habitat of the KLNP and is the only floating National Park in the world.
- It is located in the south western side of the Loktak Lake.
- It is the last natural habitat of the brow-antlered deer ('Sangai') or the dancing deer of Manipur.
- It also hosts other wildlife species like hog deer, otter, wild boar and a host of waterfowl and migratory birds.

About Brow-Antlered Deer (Dancing Deer)

- Also called as Sangai, it is the state animal of Manipur.
 - ♦ **Scientific Name:** Rucervus eldi eldi
- It is referred as dancing deer because while walking on phumdis, Sangai's hooves sink in the spongy and moist ground, giving a dancing appearance from a distance.
 - ♦ Phumdis are circular land masses made of vegetation, soil, and organic matter (at various stages of decomposition) which thickens into a solid form.
 - ♦ Phumdi is a Manipuri word meaning floating mats of soil and vegetation.
- **Conservation Status:**
 - ♦ **IUCN status:** Endangered.
 - ♦ **Wildlife (Protection) Act, 1972:** Schedule-I.
 - ♦ **CITES:** Appendix I.
- **Habitat Threats:** Its population is less than 300 and is further declining due to:
 - ♦ **Degeneration of phumdis:** Due to constant inundation and flooding by a multipurpose project built on the confluence of the Imphal river, Khuga river and its tributary, the Ungamel channel.
 - ♦ **Declined water quality** and nutrient supply due to pollution caused by sewage flow by Imphal and Nambul rivers.
 - ♦ **Inbreeding depression:** Genetic disorders.
 - ♦ **Poaching:** Poachers disguised as fishermen exploit the drifting of loose phumdi vegetation and Sangai, wild boar that are strayed away with it.
 - ♦ Invasion of non-native plants like Paragrass.
 - ♦ Livestock diseases.
 - ♦ Overfishing and unregulated grazing.



About Loktak Lake:

- It is the largest freshwater lake in northeast India. It is a valuable source of drinking water, irrigation and hydroelectricity generation in Manipur.
- It is fed by the manipur river and its tributaries. Ungamel channel or Ithai barrage is its only outlet.
- Due to its ecological importance, it was designated as a wetland of international importance under the Ramsar convention in 1990.
- Loktak Lake has been referred to as the 'lifeline of Manipur'.
- It is also known as 'floating lake' as it hosts unique floating islands called phumdis. Phumdis float on the lake's surface due to decay or decomposition from the bottom.

Way Forward:

- The Manipur government should adopt a consultative approach while deciding upon heritage site location.
- Local communities should be treated as an important stakeholder to maintain ecological balance in the region as their life and livelihood is dependent on it.

SPINY HORNTAIL

Spiny Horntail has been recently discovered in Kottiyoor forests of Kerala.

About

- Spiny Horntail Dragonfly (or *B. chaukulensis*) belonging to the genus Burmagomphus, was discovered in Maharashtra earlier this year.
- This species is known to be endemic to the Western Ghats and all other species of the genus are found in the Western and Eastern Himalayas.
- Prior to the recent discovery, the dragonfly genus Burmagomphus was represented by three species namely *B. cauvericus*, *B. pyramidalis* and *B. laidlawi*.
 - B. laidlawi* is found throughout the Western Ghats,
 - B. cauvericus* is more restricted in its distribution.
 - B. pyramidalis* is found in the Western Ghats as well as in Peninsular India.

About Dragonfly

- Characteristics:** Two species namely Dragonfly and damselflies belong to the Odonata order of flying insects.
 - Odonates comprises more than 180 species in the western ghat region.
 - Dragonfly species (Anisoptera) are characterized by long bodies and are instantly recognizable by their four long (2 pairs) and horizontal wings.
 - They can reach speeds of up to 60 km per hour and Some dragonflies are known to migrate over large distances among all the insect species.
 - They are classified as Invertebrates (i.e. species without a backbone or bony skeleton) and Insectivores.
 - They have membranous wings, which are generally transparent but in some cases have coloured markings.
- Habitat :** Odonates are found near freshwater bodies and accompanying wetlands.
 - Western Ghats Hotspot are reported to have a high diversity and many instances of endemism of odonates.
 - They are found on every continent except Antarctica
- IUCN Status:** Least Concern
- Ecological Significance:** Dragonflies are important to their environments both as predators (particularly of mosquitos) and as prey to birds and fish.
- These insects require stable oxygen levels and clean water, scientists consider them reliable bioindicators of the health of an ecosystem.

ECOLOGICAL SIGNIFICANCE OF WESTERN GHATS

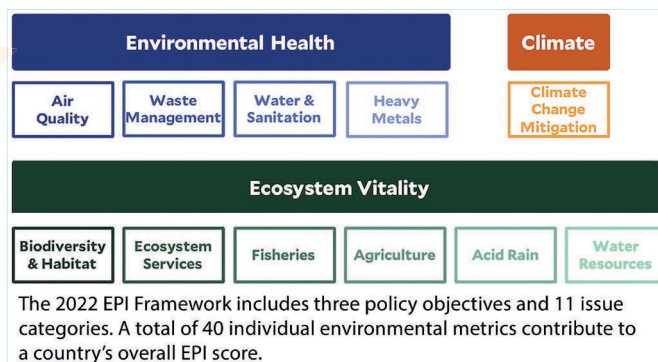
- Western Ghats are a chain of mountains running parallel to India's western coast, approximately 30-50 km inland.
- The Ghats are spread over the States of Kerala, Tamil Nadu, Karnataka, Goa, Maharashtra and Gujarat.
- Their characteristic montane forest ecosystems influence the Indian monsoon weather patterns that mediate the warm tropical climate of the region.
- Western Ghats is a Biodiversity Hotspot and is also a UNESCO World Heritage Site.

ENVIRONMENT PERFORMANCE INDEX, 2022

India secured the last position among 180 countries in a biennially released Environment Performance Index.

About:

- The Environment Performance Index is released by the World Economic Forum (WEF) in association with Yale and Columbia Universities.
- The publication of the report was started in 2002 as Environmental Sustainability Index and the report is a biennial in nature.
- This year 180 countries were assessed as per set standards.



Key Findings of the report:

- Assessment Indicators:** The index assesses countries of the world across 40 performance indicators across 11 issue categories.
 - Broadly, the ranking is based on climate change performance, environmental health, and ecosystem vitality.
- Overall Ranking:** The index was led by Denmark which topped the chart with a score of 77.90.
- It was followed by the United Kingdom (77.70), Finland (76.50) and Malta (75.20).

- **India's Ranking:** India ranked 180th among 180 countries which were assessed across various indicators with a score of 18.9.
 - ♦ In the last assessment year, India was ranked 168th with a score of 27.6.
 - ♦ India has performed worse than countries like Vietnam, Pakistan, Myanmar and Bangladesh.

Reasons cited for India's worse performance in the Index

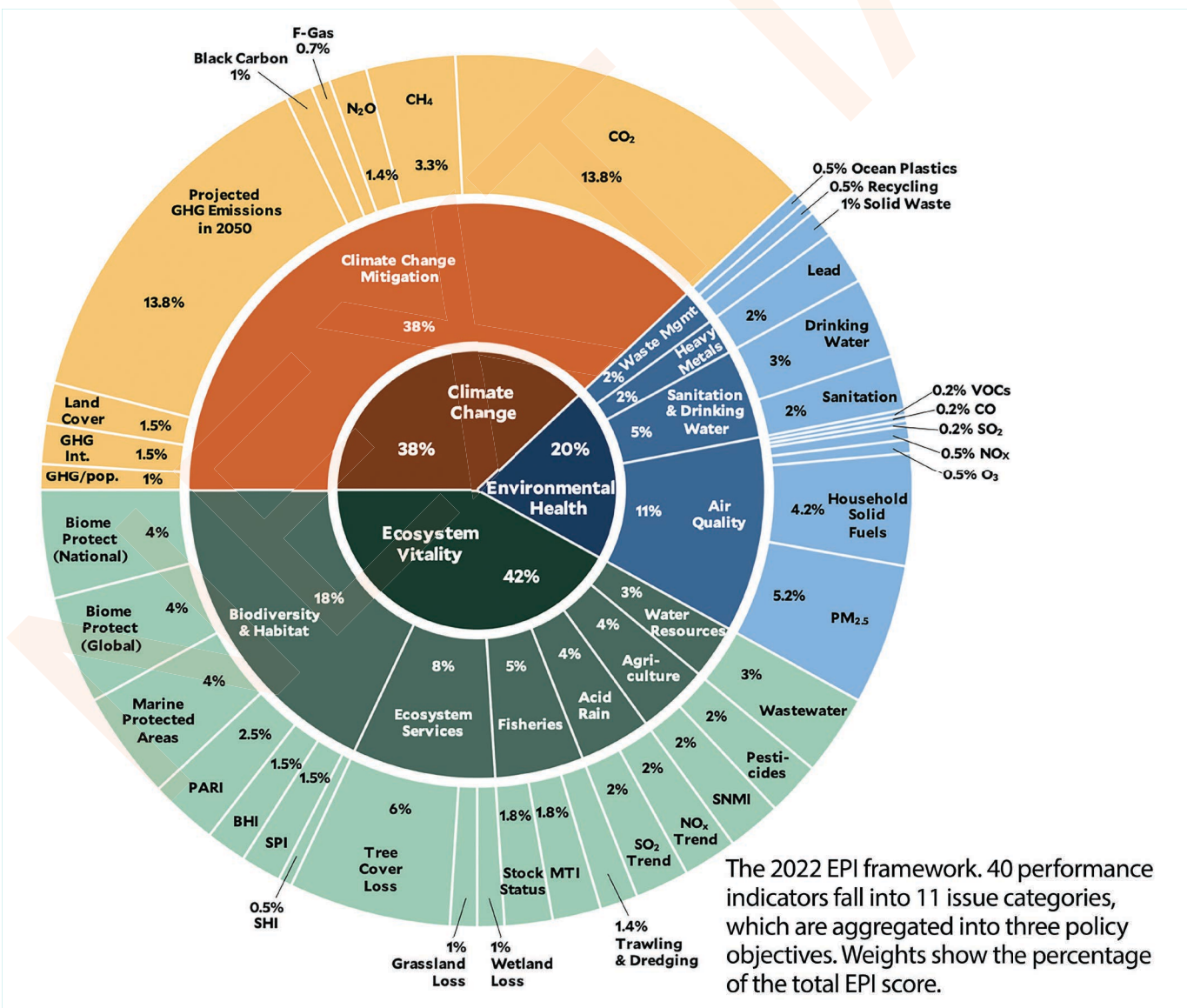
- **Bad Performance in Some of the Indicators:** India has performed badly in some of the indicators such as Biodiversity (179th), Ecosystem Vitality, Biodiversity Habitat Index (170th), Projected GreenHouse Emission (171st), PM (2.5) (174th), Species Protection Index (175th) e.t.c.
- **Baseline of Net-Zero Emission:** India has set a net zero target for 2070 unlike developed nations that have set 2050 for net-

zero emission.

- The report has considered 2050 as a baseline which has reduced India's score in respective parameters.

Significance of the Environment Performance Index

- **Reflection of Sustainable Development:** EPI and its calculation with the help of 40 indicators and assessment of separate indicators will provide government assessment of their efforts towards sustainable development and achievement of Intended Nationally Determined contributions.
- **Reflection of 'Quality of Life':** The report includes parameters such as 'Air Quality Indicator', 'Rule of Law', 'Control of Corruption' and 'Government Effectiveness' signifies the quality of life in respective countries.
 - ♦ These factors help in development of 'tourism' and other industries in the country.



- **Assessment of conservation measures:** The index contains certain parameters such as Species Protection index, Biodiversity, Sustainable Pesticide Use e.t.c. provides an overview of protection measures adopted by different countries.
- **Good Practices by developed Countries:** The report has appreciated good practices which have led to improvement in certain indicators of developed countries.
 - ♦ It includes connecting efficient administrative policy with per capita income.
 - ♦ The policies include sustainable development and effective follow up of global climate deals.
- Similarly, rapidly rising greenhouse gas emissions in countries like China, India, and Russia has impacted their ranking respectively.
- **Decrease in weightage:** India's score in black carbon emission has increased from 38 in 2020 to 100 in 2022.
- Hence, India has performed well in black carbon emission but its weightage has been changed from 0.0038 in 2022 from 0.018 in 2020.
- **Flaws in computation of certain indicators:** Although, the report has taken into account the essential indicators but it has flawed computation modeling.
 - ♦ **For Example,** it takes into account 'Extent of Protected Areas' but does not assess quality of protection enjoyed by them.
 - ♦ Similarly, in the 'Biodiversity' indicator, it does not take into account the management effectiveness of protected areas.
- Indicators such as agro-biodiversity. Soil health, food loss and wastage has not been considered by the index despite the fact that these are important indicators of biodiversity in agro-based economies like India and other developing countries.

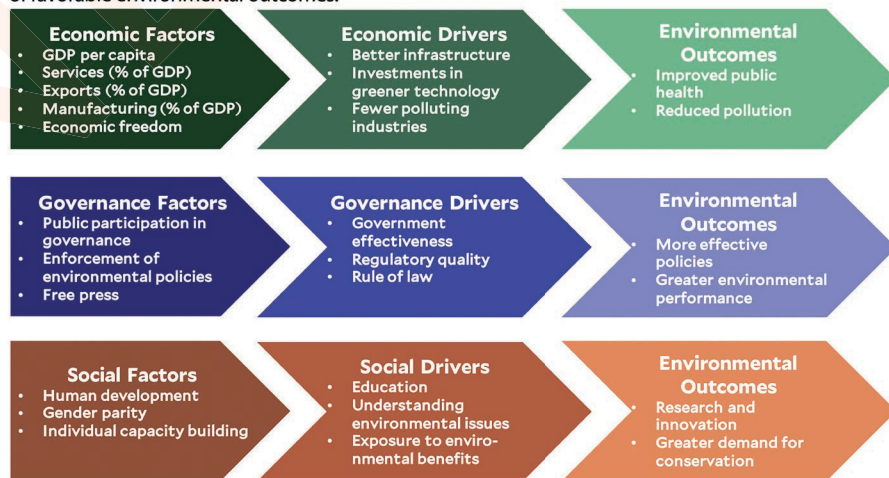
Limitations and Criticism of the report

- **Tampered and modified for emission calculation modeling:** The report has taken data of the last 10 years for calculating 'Greenhouse Gas Emission'.
- The government of India has objected to this move as it does away the larger perspective.
- It has done away with a broad model which included a longer time period, extent of renewable energy and capacity use by different countries, creation of additional carbon sinks, energy efficiency e.t.c.
- **Ignoring Emission Trajectory:** The index has ignored India's low emission trajectory historically as compared to developed nations which have very high emission trajectory.
- **Low Weightage to certain indicators GHG emission:** India has one of the lowest per-capita GreenHouse Emissions among different countries of the world.
 - ♦ Currently, India's per capita greenhouse gas (GHG) emission is around 1.96 tCO₂e (tonnes of carbon-di-oxide equivalent).

Way Forward

- Although the assessment by EPI has arguably tried to track improvement by different countries, it lacks 'equity' and 'ethical' factors.
- But, the report is skewed towards developed countries as it has ignored historical carbon emission and per-capita carbon emission.
- Further, it has tried to balance 'developing' and 'developed' countries by ignoring certain social, political and economic indicators.

The framework of the 2022 EPI drivers analysis. Economic, governance, and social factors enable drivers of favorable environmental outcomes.



ELECTRIC VERTICAL TAKEOFF AND LANDING (eVTOL)

Recently, The Union Civil Aviation Minister stated that the Government of India is exploring the possibility of inviting manufacturers of Electric Vertical Takeoff and Landing (eVTOL) aircraft to set up bases in India.

About:

- **Electric power:** An eVTOL is an aircraft that uses electric power to hover, take off, and land vertically.
- **Distributed electric propulsion technology:** Most eVTOLs also use distributed electric propulsion technology which means integrating a complex propulsion system with the airframe.
- **Urban air mobility (UAM):** This is technology that has grown on account of successes in electric propulsion based on progress in motor, battery, fuel cell and electronic controller technologies and also fuelled by the need for new vehicle technology that ensures urban air mobility.
- There are multiple motors for various functions to increase efficiency and to also ensure safety.

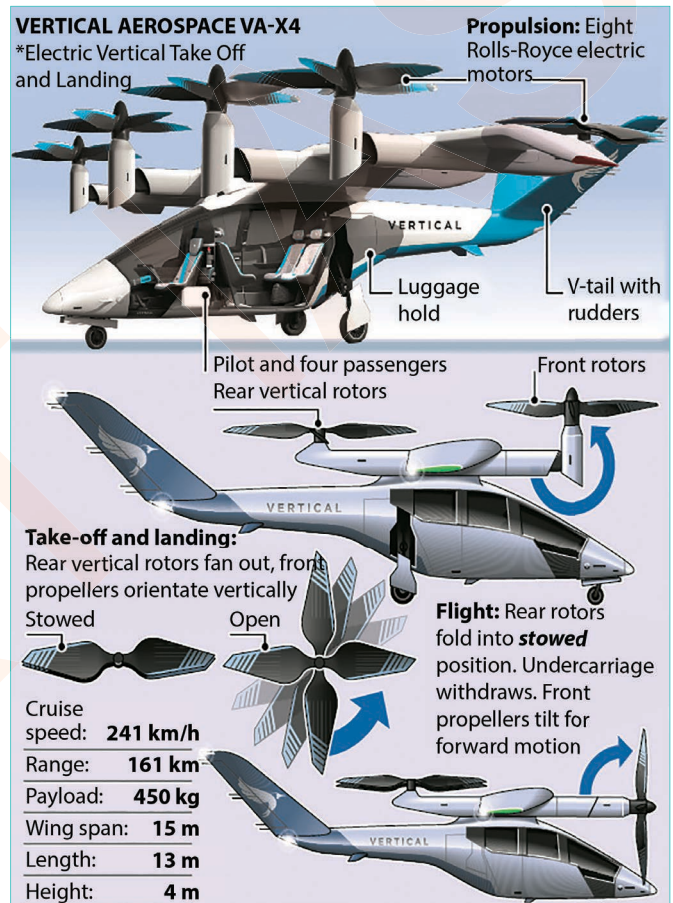
FACTS/DATA

- **Mark D. Moore:** The eVTOL world is moving forward based on the spark provided by NASA researcher Mark D. Moore who came up with the concept of a personal (one man) air vehicle.
- **The global market for eVTOLs** was put at \$8.5 million in 2021 and is to grow to \$30.8 million by 2030.

Challenges/Issues:

- **Need of crash prevention systems:** As the technology so far is a mix of unpowered and piloted aircraft, the areas in focus include crash prevention systems.
 - ♦ These use **cameras, radar, GPS** (global positioning system) and **infrared scanners**.
- **Power failure:** There are also issues such as ensuring safety in case of powerplant or rotor failure.
- **Cyberattack:** Aircraft protection from cyberattacks is another area of focus.
- **Navigation and flight safety:** It is not yet a safe option while operating in difficult terrain, unsafe operating environments and also bad weather.

- **EVTOL certification is also complex** because of planned operations within urban areas, new battery systems and the need for higher levels of automated redundancy.



Certification Issues:

- **Dual certifications:** Some companies have concepts that are aimed at dual certifications by regulatory agencies in the western world.
- **Need to maintain high standards:** Various aviation bodies highlighted the need to maintain very high safety standards in certification.
- **Existing regulatory frameworks:** eVTOL technology is to use existing regulatory frameworks despite being in the form of new and emerging technologies.
- **Emerging powered-lift models:** It plans to use a special class process to oversee the unique features of emerging powered-lift models.

- **New battery systems:** eVTOL certification is also complex because of planned operations within urban areas, new battery systems and the need for higher levels of automated redundancy.

Significance:

- **Solution to transportation needs:** eVTOL as being a runway independent technological solution for the globe's transportation needs.
 - ♦ This is because it opens up new possibilities which aircraft with engines cannot carry out in areas such as **manoeuvrability, efficiency and even from the environmental point of view.**
- **Third wave in an aerial revolution:** eVTOLs have been likened to a third wave in an aerial revolution; the first being the advent of commercial flying, and the second, the age of helicopters.

Future of this Technology in India:

- **Connecting India:** It is planned as an urban air mobility company that aims to connect places that are heavily congested and also not well connected by air services.
- **Vertical aircraft:** The concept of 'Advanced Air Mobility' comes in, i.e., connecting places through vertical aircraft and thus skipping road travel. This is being done now by helicopters, but eVTOLs will step into this space.
- **Environmental friendly:** eVTOLs are noise free, have a zero carbon footprint and are more affordable.
- **Need of regulation:** Formulating regulations for pilotless vehicles, airworthiness certifications, and the need for a pilot's licence is the need of the hour.
- **Infrastructure bottleneck:** Implementing efficient energy management systems, onboard sensors, collision detection systems and advanced technologies such as artificial intelligence; having in place infrastructural support such as take-off and landing zones, parking lots, charging stations and what are called vertiports; creating a robust air traffic management system that is integrated with other modes of transportation, and putting in place a database to ensure operational and mechanical safety.

Way Forward:

- **Hybrid technologies:** There are some experts who are questioning the use of only batteries and are looking at hybrid technologies such as hydrogen cells and batteries depending on the flight mission.
- **Global players:** Such as the **Volocopter VC1 from Germany** and the **Opener BlackFly from the U.S.** The top aircraft manufacturers, Airbus and Boeing, have also joined the race.
 - ♦ **Airbus** unveiled its prototype, **Vahana Alpha One** or the **Airbus Vahana** at the Paris Air Show in 2017.

- ♦ **China, Israel and the U.K** too have programmes to look out for.
- **Advanced Air Mobility concept:** means connecting places through vertical aircraft and thus skipping road travel. This is being done now by helicopters, but eVTOLs will step into this space.
- **New mode:** The demand will be on account of green energy and noise-free aircraft, cargo carrying concepts and the need for new modes of transport.

BARCODES AND RADIO-FREQUENCY IDENTIFICATION

Delhi's Indira Gandhi International Airport would be the first of its kind in the country where Baggage tags equipped with radio-frequency identification (RFID) will soon be available.

About:

- **Nature:** RFID is a technology that uses radio waves to automatically identify various tagged objects.
 - ♦ The RFID reader continuously sends radio waves of a specific frequency in the RFID system.
 - ♦ If the object to which the RFID tag is attached is within the range of the radio waves, it provides feedback to the RFID reader, which then identifies the object based on the feedback.
- **Wireless tracking method:** It is a wireless tracking method that uses tags and readers to track objects.
- **Components:** Transponder, receiver, and transmitter are the three components of an RFID system.
- **Bands used:** The Low Frequency, High Frequency, and Ultra-High Frequency bands are used by RFID systems.

Different kinds of RFID:

- **Three types of RFID tags:** Passive tags, semi-passive tags, and active tags are the three types of RFID tags that are commercially available.
 - ♦ **Passive tags:** There is no power supply for passive tags. They acquire their power from the readers' incoming radio waves. Passive RFID tags do not have a battery and are powered by the reader.
 - ♦ **Semi-passive tags:** It comprise of an internal circuit with a power source, but rely on the radio waves received from the reader to transmit the response.
 - ♦ **Active tags:** The internal circuit of active tags is powered by a power source. Batteries are being used to power active RFID tags.

ABOUT BARCODE

- A barcode is a printed series of parallel bars or lines of varying width used for entering data into a computer system.
- The bars are black on a white background and vary in width and quantity depending on the application.
- The bars represent the binary digits zero and one, which represent the digits zero to nine processed by a digital computer.
- These barcodes are scanned using special optical scanners known as barcode readers, which come in a variety of shapes and sizes.
- The majority of these codes use only two different widths of bars, however some use four.
- The numbers that make up a barcode are also printed at the bottom.
- One of the most well-known examples of a barcode is the QR code.

- **Greater security:** RFID allows for greater security than barcodes.

Disadvantages of RFID:

- **Material:** RFID's accuracy may be compromised if the tags are applied to metals or liquid.
- **Data protection issues:** RFID frequencies can be transmitted over greater distances than barcode frequencies; there is also concern that RFID technology raises data protection issues, resulting in personal information becoming accessible without consent.
- **Accuracy:** Sometimes not as accurate or reliable as barcode scanners.
- **Cost:** RFID readers can be 10 times more expensive than barcode readers.
- **Difficult:** Implementation can be difficult & time consuming.

RAMSAY HUNT SYNDROME

Recently, a famous singer from Canada has been diagnosed with Ramsay Hunt Syndrome that has temporarily paralysed one side of his face.

About:

- Ramsay Hunt Syndrome is neurological disease in which a virus, Varicella Zoster, causes inflammation of the nerves involved in facial movements.
- When the nerves get inflamed, they lose their ability to function, leading to temporary facial palsy or paralysis.
 - ♦ It means that facial muscles in the infected person cannot receive necessary signals to function properly.
- There are 12 cranial nerves in the body. Ramsay Hunt Syndrome is the viral infection impacting the 7th cranial nerve that is involved in facial movements.
- The disease is not contagious but can lead to chickenpox in those not vaccinated for the disease.

Symptoms:

- The symptoms include painful, red rash and blisters in and around the ear, and facial paralysis on the same side.
- Patients also report hearing loss in the ear that has been impacted apart from Tinnitus or ringing sounds.
- It causes weakness of one side of the face and causes difficulty in closing one eye and eating as food falls off from the affected side.
- Initially, the patient may complain of facial weakness and little difficulty in closing one eye.
- The disease fully manifests in a matter of two to three days.

RADIO-FREQUENCY IDENTIFICATION (RFID) VS BARCODES

Radio-Frequency Identification (RFID)	Barcodes
RFID uses radio waves to communicate data from RFID chips to readers that do not require line of sight in order to obtain the data.	Barcodes use light to read the black-and-white pattern printed on the sticky tag.
An RFID tag can communicate with a powered reader even when the tag is not powered.	When printed on paper or sticky labels, barcodes are more susceptible to wear and breakage, which can affect their readability.
RFID tags, on the other hand, are sometimes placed in plastic labels or into the object itself, making them more durable than barcodes.	Barcodes are simple and easy to copy or counterfeit.
RFID scanners can process dozens of tags in a single second.	Barcodes must be in line of sight.
RFID tags are expensive compared to barcodes.	Barcodes are cheaper as compared to RFID.

Advantages of RFID:

- **Efficiency:** It can scan multiple items at once.
- **Durability:** It can handle exposure to sun & rain.

Treatment of the Syndrome:

- It is treated using antiviral drugs, steroids and physiotherapy. Steroids and antiviral drugs are the cornerstone of the treatment.
 - ♦ Prompt treatment after diagnosis can speed up the recovery and reduce chances of severe nerve damage.
- Facial exercises are very important. Patients need to protect their eyes.
- When one eye doesn't close, there is a chance of developing corneal aberration. Patients must use tear drops and use eye protection.
- They should wear glasses when they go out, and tape the eye that has been impacted when they sleep at night.
- The disease is reversible. Patients get cured within 15 days to three months of starting the treatment.

About the Varicella Zoster Virus (VZV):

- The Varicella Zoster Virus (VZV) is the same virus that causes chickenpox and shingles.
- According to the US Center for Disease Control and Prevention, this virus belongs to the herpesvirus group and can stay in the body as a latent infection.
- The virus can stay dormant in a person's body and can reawaken to attack the nerves. According to doctors, VZV can get reactivated due to weakening of the immune system.
- Stress is also considered a trigger, according to some studies, as it depresses the immune system.
- Some reports also suggest that T-cell dysfunction caused by coronavirus infection can reactivate VZV.

ANTIMICROBIAL RESISTANCE

Health ministers from the Group of Seven (G7) countries recently recognised that antimicrobial resistance was a bigger threat to Low-and Middle-Income Countries (LMIC).

About:

- The G7 health ministers met in Berlin recently to discuss global healthcare challenges.
- The G7 committed to establish new international integrated surveillance systems and improve existing ones to monitor AMR and antibiotics use among humans, animals and plants and the effect on the environment.
 - ♦ The aim is to enhance the scientific basis to inform risk assessments and identify opportunities for mitigation.
- The group also committed to promote prudent and appropriate use of antimicrobials through 2023 by defining

national measurable targets on AMR in line with domestic authorities, including antibiotic usage in human health (both volume and appropriateness, whenever possible).

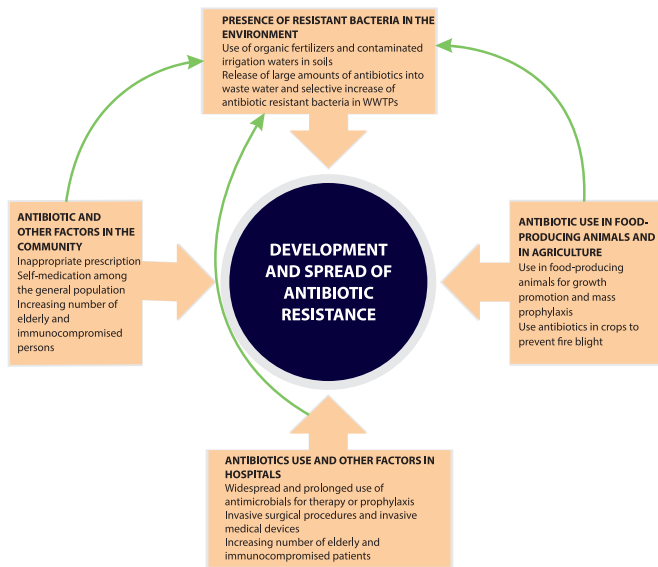
- The G7 will try to expedite implementation of existing strategies to ensure a sustainable market for antibiotics and to take additional specific and appropriate steps in domestic markets and health systems.
- The health ministers called on WHO to develop guidance on a cost core package of AMR interventions that all countries, especially LMICs could include to strengthen primary healthcare initiatives.
- The ministers also pledged other actions to mitigate climate change and for healthcare.

SOME FACTS RELATED TO AMR

- Antimicrobial Resistance (AMR) is responsible for nearly 700,000 deaths every year.
- According to a 2017 report titled "Drug-Resistant Infections: A Threat to Our Economic Future" the death toll due to AMR can reach up to 10 million by year 2050.
 - ♦ According to the report AMR can also downgrade the GDP of the world by 3.8 percent annually.

Antimicrobial Resistance (AMR) and its developments:

- Antimicrobials – including antibiotics, antivirals, antifungals and antiparasitics – are medicines used to prevent and treat infections in humans, animals and plants.
- Antimicrobial resistance is a natural phenomenon that occurs when microorganisms such as bacteria, viruses, fungi and parasites change over time, usually through genetic changes, and no longer respond to medicines.
- It makes infections harder to treat and increases the risk of disease spread, severe illness and death.
- The infections can spread from person to person or between people and animals, including from food of animal origin.
- **The main drivers of antimicrobial resistance include:**
 - ♦ the misuse and overuse of antimicrobials
 - ♦ lack of access to clean water, sanitation and hygiene (WASH) for both humans and animals
 - ♦ poor infection and disease prevention and control in health-care facilities and farms
 - ♦ unregulated use of antibiotics for livestock
 - ♦ poor access to quality, affordable medicines, vaccines and diagnostics
 - ♦ lack of awareness and knowledge; and lack of enforcement of legislation.



Major concerns with the Antimicrobial Resistance:

- The emergence and spread of drug-resistant pathogens that have acquired new resistance mechanisms, leading to antimicrobial resistance, continues to threaten the ability to treat common infections.
- The spread of multidrug resistant bacteria (also known as superbugs) makes infections hard to treat with the available existing antimicrobial medicines such as antibiotics.
- A lack of access to quality antimicrobials remains a major issue. Antibiotic shortages are affecting countries of all levels of development and especially in health-care systems.
- It also has a significant impact on gender equity and countries' human capital as it affects people's lives through loss of time at school or at work, increased healthcare spending, and reduction in health facilities' ability to quickly manage a patient's health condition.

Addressing the Antimicrobial Resistance:

- Improving hand hygiene in healthcare settings.
- Increasing awareness and knowledge of the significant and negative impacts of AMR can help limit demand for antibiotics where they are not relevant or appropriate.
- Improving quality of veterinary medicinal products and their use under supervision by veterinarians.
- Working with farmers, veterinarians, para veterinarians and other stakeholders to support behavior change away from the use of antimicrobials in animal production can help to increase the prudent use of antimicrobials.
- Strengthening systems to ensure that facilities, particularly hospitals, health centers and schools, have access to clean water and sanitation reduces the spread of infection and disease.
- Advanced treatment technologies can help reduce the spread of antimicrobial residues and antibiotic-resistant bacteria into the environment.

Global Initiative to Tackle the Antimicrobial Resistance:

- A record number of countries (163) responded to the latest annual global survey of implementation of the Global Action Plan on addressing antimicrobial resistance (AMR) administered jointly by WHO, FAO and OIE (the "Tripartite").
- UNEP is increasing its coordinated activities with the Tripartite organizations in different areas promoting and strengthening the capacity of countries to implement the environmental dimensions of the 'One Health' approach and enhancing and broadening the multi-stakeholder involvement in AMR collective work.
- The latest country to unveil a national action plan to tackle the spread of antimicrobial resistance using a "one health" approach is Kenya, which launched its national AMR policy and action plan this week.
- The World Bank is financing 56 projects across 35 countries. These investments are aimed at strengthening and developing agricultural, health and water and sanitation systems, which are critical to preventing the emergence and spread of resistance.
- India launched the National Action Plan on Antimicrobial Resistance (NAP-AMR) focusing on One Health approach in 2017 with an aim of involving various stakeholder ministries/departments.

D2M TECHNOLOGY

The Department of Telecommunications (DoT) and Prasar Bharati are exploring the feasibility of a technology for broadcast.

About:

- The new technology will allow the broadcast of video and other forms of multimedia content directly to mobile phones, without needing an active internet connection.
- The technology is called 'Direct-To-Mobile' (D2M) broadcasting and it promises to improve consumption of broadband and utilisation of spectrum.
- Public service broadcaster Prasar Bharati had last year announced a collaboration with IIT Kanpur to test the feasibility of the technology, called 'Direct-to-Mobile' (D2M).
- The Department of Telecommunications (DoT) has set up a committee to study the feasibility of a spectrum band for offering broadcast services directly to users' smartphones.
 - ♦ Band 526-582 MHz is envisaged to work in coordination with both mobile and broadcast services. DoT has set up a committee to study this band.
 - ♦ At the moment, this band is used by the Ministry of Information & Broadcasting across the country for TV transmitters.

About D2M Technology:

- The technology, called 'direct-to-mobile broadcasting', is based on the convergence of broadband and broadcast, using which mobile phones can receive terrestrial digital TV.
- Using D2M, multimedia content can also be beamed to phones directly.
- The technology promises to improve consumption of broadband and utilization of spectrum.

Significance of D2M Technology:

- The D2M network has the ability to converge with traditional mobile networks and provide additional data pipes to the mobile operator which can help decongest their network from heavy bandwidth consumption during peak traffic periods.
- It can possibly be used to directly broadcast content related to national interest on citizens' information.
- It can be used to counter fake news, issue emergency alerts and offer assistance in disaster management, among other things.
- It will allow the end user to access unlimited video – educational or infotainment – and data content, without any buffering while not consuming any data at a nominal fixed monthly price.

Consumer and Business Impact:

- **For Consumers:**
 - ♦ The consumer will be able to access any multimedia anywhere and anytime through Video on Demand (VoD) or Over the Top (OTT) without exhausting their mobile data.
 - ♦ The service will be provided at a nominal rate.
 - ♦ The technology will also allow people from rural areas, with limited or no internet access, to watch video content.
- **For Business:**
 - ♦ The telecom service providers will be able to offload video traffic from their mobile network onto the broadcast network. This will help them to decongest the mobile spectrum.
 - ♦ This will also **improve usage of mobile spectrum and free up bandwidth** which will help reduce call drops, increase data speeds etc.

Possible Challenges to the technology's Rollout:

- While still at a nascent stage, bringing key stakeholders like mobile operators onboard will be the "biggest challenge" in launching D2M technology on a wide scale.
- A mass roll out of the technology will entail changes in infrastructure and some regulatory changes.

ADDITIONAL INFORMATION

Prasar Bharti

- The Prasar Bharati is an autonomous body established under the Prasar Bharati Act of 1997.
- Though autonomous in nature, the Company comes directly under the regulation of the Ministry of Information and Broadcasting, Government of India.
- The company runs the numerous channels of Doordarshan, the public service broadcaster of the country as well DD News, the news channel.

Spectrum Band:

- Spectrum is a range of electromagnetic radio frequencies used for transmission of voice, data and images.
- Mobile telecom operators send and receive frequencies to enable communication between two phones. The defence services and railways also use the spectrum.
- Assignment of spectrum is governed by the national frequency allocation plan (NFAP) and the International Radio Regulations of the International Telecommunications Union (ITU).
 - ♦ The Wireless Planning and Coordination (WPC) wing of the department of telecom (DoT) performs spectrum management functions in India.
 - ♦ The Standing Advisory Committee on frequency allocation formulates and reviews the NFAP and evolves technical criteria equipment standards.

LIQUID-MIRROR TELESCOPE

The International Liquid-Mirror Telescope (ILMT) has been set up at Devasthal Observatory campus in Nainital, Uttarakhand.

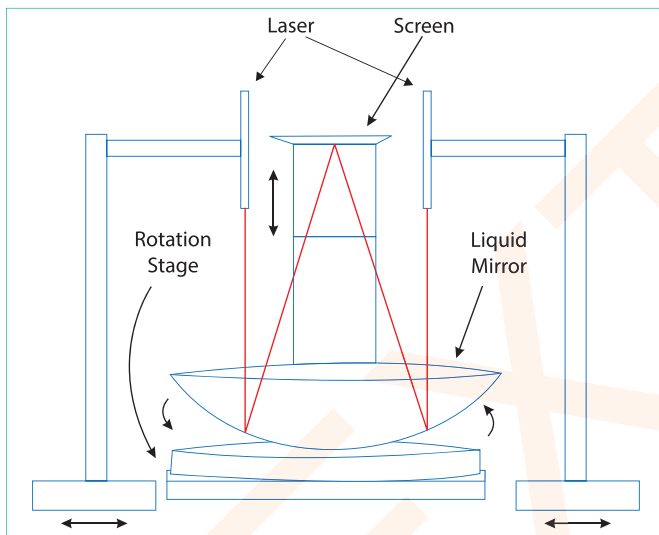
About:

- It became the world's first liquid-mirror telescope to be commissioned for astronomy.
- The Telescope will observe asteroids, supernovae, space debris and all other celestial objects from an altitude of 2,450 meters in the Himalayas.
- The ILMT is set to commence full-scale scientific operations in October this year.
- To protect it from moisture during monsoon, the ILMT will remain shut for operations between June and August.
- It will work along with the 3.6-metre Devasthal Optical Telescope (DOT), the largest telescopes operating in India (of the 4-meter class).
- The telescope will also be operating at the location of the 1.3-metre Devasthal Fast Optical Telescope (DFOT) inaugurated in 2010.

Working of the ILMT:

- It employs a 4-meter-diameter rotating mirror made up of a thin film of liquid mercury to collect and focus light.

- A pool of mercury, a reflective liquid, is spun so that the surface curves into a parabolic shape which is ideal for focusing light.
- A thin transparent film of mylar protects the mercury from wind.
- The reflected light passes through a sophisticated multi-lens optical corrector that produces sharp images over a wide field of view.
- A large-format electronic camera located at the focus records the images.
- The rotation of the earth causes the images to drift across the camera, but this motion is compensated electronically by the camera.
- This mode of operation increases observing efficiency and makes the telescope particularly sensitive to faint and diffuse objects.



Difference between ILMT and conventional telescopes:

- Conventional telescopes have highly polished glass mirrors — either single or a combination of curved ones — that are steered in a controlled fashion to focus onto the targeted celestial object on specific nights. The light is then reflected to create images.
 - ♦ As opposed to this, the liquid-telescope is made up of mirrors with a reflective liquid, mercury — a metal which has a high light-reflecting capacity.
 - ♦ About 50 liters (equal to 700kgs) of mercury filled into a container will be rotated at a fixed constant speed along the vertical axis of the ILMT.
 - ♦ During this process, the mercury will spread as a thin layer in the container forming a paraboloid-shaped reflecting surface which will now act as the mirror. Such a surface is ideal to collect and focus light.
 - ♦ The mirror has a diameter of 4 meter.

- A conventional telescope is steered to point towards the celestial source of interest in the sky for observations. The liquid-mirror telescopes, on the other hand, are stationary telescopes that image a strip of the sky which is at the highest at a given point of time in the night.
 - ♦ In other words, a liquid-mirror telescope will survey and capture any and all possible celestial objects — from stars, galaxies, supernovae explosions, asteroids to space debris.
- While conventional telescopes observe specific stellar sources for fixed hours as per the study requirement and time allotted by the respective telescope time allotment committee, ILMT will capture the sky's images on all nights — between two successive twilights — for the next five years.

Countries involved in ILMT's development:

- India, Belgium, Canada, Poland and Uzbekistan are the main countries who have collaborated to set up the ILMT.
- The telescope was designed and built at the Advanced Mechanical and Optical Systems Corporation and the Centre Spatial de Liège in Belgium.
- Along with ARIES, the other international institutes involved in the development process include the
 - ♦ Institute of Astrophysics and Geophysics, Liège University, Belgium;
 - ♦ Canadian Astronomical Institutes from Vancouver, University of British Columbia;
 - ♦ University of Montreal, University of Toronto, University of Victoria, York University, Laval University, Poznan Observatory, Poland;
 - ♦ Ulugh Beg Astronomical Institute of Uzbek Academy of Sciences
 - ♦ National University of Uzbekistan.

Data Generated through ILMT and its uses:

- It is capable of generating massive volumes of data -- around 10 to 15GB per night and is expected to work for the coming five years starting October 2022.
- The data generated by a new telescope facility will be cleaned, maintained and archived at either of the host/ participating institutes.
- For an initial stipulated period, the data will be open only for researchers from these participating institutes. At a later stage, the data will be accessible to all global scientific communities.
- In order to sieve, process and analyze the large datasets, the ILMT will deploy the latest computational tools, like Artificial Intelligence, Machine Learning and big data analytics.

Significance of the Telescope:

- It will help in surveying the sky making it possible to observe several galaxies and other astronomical sources just by staring at the strip of sky that passes overhead.
- The liquid mirror-telescope will work along with the other telescopes in India.
- The reflected light passes through a sophisticated multi-lens optical corrector that produces sharp images over a wide field of view.
- The large data set can be used to select data that can be culled out as base data which can then be followed-up for further focused studies using spectrographs, near-Infrared spectrograph mounted on the in-house DOT.

5G TECHNOLOGY

The Union Cabinet gave its nod for the auction of spectrum that can be used to offer 5G services.

About:

- A total of 72,097.85 MHz (or 72 Ghz) of spectrum with a validity period of 20 years will be put on sale during the auction.
- The auction will be held for spectrum in various frequency bands namely:
 - ♦ Low (600 MHz, 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz)
 - ♦ Mid (3300 MHz)
 - ♦ High (26 GHz).
- It is expected that the Mid and High band spectrum will be utilized by telecom service providers (TSPs) to roll-out 5G services.
 - ♦ Under 5G the internet speeds would be 10 times higher than what is possible through the current 4G services.

Issues Associated with the Auction:

- The two issues that the industry has highlighted with regards to the upcoming auctions are:
 - ♦ High reserve prices for the spectrum.
 - ♦ Direct allotment of spectrum to enterprises for setting up captive private networks.

About the 5G Technology:

- 5G or fifth generation is the latest upgrade in the long-term evolution (LTE) mobile broadband networks.
- 5G mainly works in 3 bands, namely low, mid and high frequency spectrum — all of which have their own uses as well as limitations.
 - ♦ **Low band spectrum:** It has shown great promise in terms of coverage and speed of internet and data exchange,

the maximum speed is limited to 100 Mbps. The low band spectrum may not be optimal for specialized needs of the industry.

- ♦ **Mid-Band Spectrum:** It offers higher speeds compared to the low band, but has limitations in terms of coverage area and penetration of signals. This band may be used by industries and specialized factory units for building captive networks that can be molded into the needs of that particular industry.
- ♦ **High-Band Spectrum:** It offers the highest speed of all the three bands, but has extremely limited coverage and signal penetration strength. Internet speeds in the high-band spectrum of 5G have been tested to be as high as 20 Gbps.
- The 5G network can also function as multiple separate networks at the same time by using the network slicing technology where slices of the network can be designed for a specific purpose and can act as an independent network.

Roll-out of the 5G:

- The 5G deployment is likely to start from August-September this year, and service should commence in about 20-25 cities by the year-end.
- Experts and analysts expect a gradual roll-out of 5G across the country in a phased manner over the next two to three years, with roll-outs beginning from the second half of the current year.

Need for speed

A look at how 5G compares to previous technologies. 5G's maximum data speed is 10 times higher than the presently used 4G

Year	Generation	Maximum data speed
1979	1G	none (voice only)
1991	2G	14.4 Kbps
2000	2.5G	53.6 Kbps
2001	3G	384 Kbps
2010	4G	100 Mbps
2020	5G	1 Gbps



Significance of the 5G Technology:

- 5G is the next generation cellular technology that will provide faster and more reliable communication with ultra low latency.
 - ♦ As per the set standards, with 5G, the peak network speeds are expected to be in the range of 2-20 Gbps as opposed to about 25 Mbps on current 4G networks.
 - ♦ Latency is the amount of time data takes to travel between its source and destination.

- It is expected that with 5G technology, consumers will be able to download data heavy content such as 8K movies and games with better graphics in just a few seconds.
- 5G is expected to form the backbone of emerging technologies such as IoT and machine to machine communications, thereby supporting a much larger range of applications and services, such as tele-surgery and real time data analytics.
- 5G is expected to create a cumulative economic impact of \$1 trillion in India by 2035.
- Other beneficiaries from the 5G technology will include healthcare, public safety, electric and autonomous vehicles, education etc. among others.

TELECOM REGULATORY AUTHORITY OF INDIA (TRAI)

- **Need:** The entry of private service providers brought with it the inevitable need for independent regulation.
- **Establishment:** In 1997 by an Act of Parliament, named the Telecom Regulatory Authority of India Act, 1997.
- **Mandate:** It was made to regulate telecom services, including fixation/revision of tariffs for telecom services which were earlier vested in the Central Government.
- **Aim and Objectives:** To create and nurture conditions for growth of telecommunications in the country in a manner and at a pace which will enable India to play a leading role in emerging global information society.
 - ♦ One of the main objectives of TRAI is to provide a fair and transparent policy environment which promotes a level playing field and facilitates fair competition.
- The TRAI Act was amended by an ordinance, effective from 24 January 2000, establishing a Telecommunications Dispute Settlement and Appellate Tribunal (TDSAT) to take over the adjudicatory and disputes functions from TRAI.

- **Web 2.0:** It refers to the second stage of World Wide Web which is marked by user-generated content, usability, and interoperability for end users.
 - ♦ It is also referred to as the participative social web.
 - ♦ **Significance:** Web 2.0 is seen as a continuum of Web 1.0 with little modification in a way that users can put content on the web and are not mere passive consumers.
- **Web 3.0:** It refers to the next generation of World Wide Web which would take over from Web 2.0 which is more centralised and focused on user-created content.
 - ♦ **Significance:** The idea of Web 3.0 is a decentralised web that challenges the dominance of tech giants by giving the power and data in the hands of the internet users rather than big tech corporations.
 - ♦ In Web 3.0, user data is distributed across networks and no single entity owns the information.



EVOLUTION OF INTERNET

Recently, the former CEO of Twitter has announced the conception of Web 5.0 which would take further the already evolving Web 3.0

About:

- **Web 1:** It refers to the first stage of the World Wide Web evolution when there were only a few content creators with numerous users who were passive consumers of content.
 - ♦ Under Web 1.0 personal web pages were common consisting of static pages hosted on ISP-run web servers.
 - ♦ **Significance:** Users were able to passively harness the vast ocean of information on the internet.

Conception of Web 5.0:

- Web 5.0 is developed by The Block Head (TBH), one of the Bitcoin business units.
- It has been conceptualised by former Twitter CEO Jack Dorsey.
- **'Web 2 plus Web 3' concept:** It takes the best of what Web 2.0 and Web 3.0 offers.
 - ♦ Users putting content from Web 2.0.
 - ♦ Decentralised data from Web 3.0.
- **Platform:** It leverages blockchain technology and currently is in its nascent stage.
- **Significance:** Web 5.0 brings decentralized identity and data storage to individuals' applications.

- ♦ It lets consumers have ownership of their data and identity in addition to control over all their interactions over the internet.

Challenges associated with Web 5.0:

- **Regulations:** The decentralised nature of Web 5.0 would be tough to regulate for the sovereigns. The Internet should be free and open but Government's regulation is necessary to check its misuse.
- **Concerns of security agencies:** The cases of terror funding and cyber crime would be tough to intercept because of the decentralised nature of Web 5.0.
- **Question of control, operations:** Who would be controlling it is yet to be ascertained. The Internet might be free from the clutches of tech giants with increased decentralisation but 'who would be controlling and operating it' remains unclear as of now.

ABOUT WORLD WIDE WEB (WWW)

- The World Wide Web (WWW) commonly known as the **Web**, is the world's dominant software platform.
- It is an information space where documents and other web resources can be accessed through the Internet using a web browser.
- It is the primary tool billions of people use across the world to interact on the Internet.
- It was invented by Tim Berners in 1989 and opened to the public in 1991.

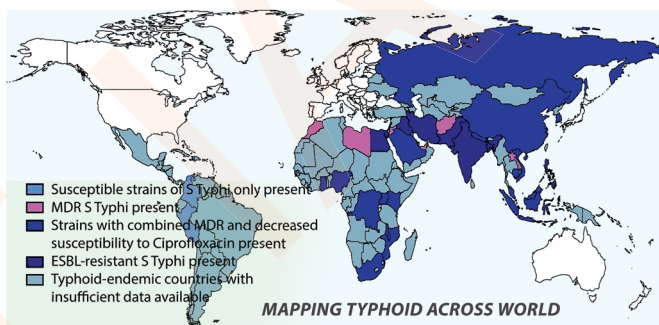
DRUG-RESISTANT TYPHOID STRAINS

As per The Lancet Microbe Study, South Asia accounts for 70% of the global Typhoid burden.

About:

- **Emergence of Resistant Strains:** As per genome sequencing study of the bacteria Salmonella Typhi, the effectiveness of antibiotics for typhoid fever is threatened by the emergence of resistant strains.
- **Multi Drug Resistant (MDR):** Certain strains were classified as MDR as they had genes giving resistance to antibiotics ampicillin, chloramphenicol and trimethoprim/sulfamethoxazole.
- **Extensively Drug Resistant (XDR):** Recent years have seen increasingly resistant strains that are threatening to leave without effective antibiotics against this bacterium.
 - ♦ While there are strains for which there is only a single oral antibiotic remaining. These strains are termed as XDR typhoid.

- **Origination:** The genome analysis also reveals that resistant strains, almost all originating in South Asia, have spread to other countries 197 times since 1990.
 - ♦ Much of the drug-resistance in typhoid has evolved within India.
- **Infection and Mortality:** Typhoid fever causes 11 million infections and more than 100,000 deaths per year.
 - ♦ South Asia accounts for 70% of the global disease burden.
- **Other observations:** Since 2000, multi-drug-resistant (MDR) S Typhi has declined steadily in Bangladesh and India, remained low in Nepal and increased slightly in Pakistan.
 - ♦ However, these are being replaced by strains resistant to other antibiotics.



About Typhoid Fever:

- Typhoid fever is a bacterial infection that can spread throughout the body, affecting many organs.
- It is carried by humans only, no other animal carrier has been found.
- **Cause:** It is caused by a bacterium called Salmonella typhi, which is also responsible for salmonella food poisoning.
- **Spread:** Typhoid fever is highly contagious. An infected person can pass the bacteria through urination and faeces.
 - ♦ Without prompt treatment, it can cause serious complications and can be fatal.
- **Incidence:** Typhoid fever is most common in parts of the world that have poor sanitation and limited access to clean water.
 - ♦ It mostly occurs in developing countries of the world.
- **Symptoms:** The symptoms of typhoid include Persistent high fever that gradually increases, Headache, General aches and pains, Extreme tiredness (fatigue), Cough, Constipation.
- **Treatment and Precautions**
 - ♦ Typhoid fever requires prompt treatment with antibiotics such as ampicillin, chloramphenicol, azithromycin and trimethoprim.
 - ♦ More severe typhoid fever usually requires admission to hospital.
 - ♦ The control measures for the disease must encompass early diagnosis, surveillance and vaccine to protect against the disease.

- Typhoid vaccine shows 50-70% of effectiveness.
- Sanitation and hygiene play a major role in reducing the burden of enteric diseases as well.

Steps taken by India:

- India's Health Ministry is going to introduce new typhoid conjugate vaccines into the national immunisation program.
- In addition, two WHO-prequalified vaccines have been developed in India by Bharat Biotech and Biological E.

NUCLEAR FUEL

Rosatom State Corporation of Russia has supplied the first batches of nuclear fuel to India for the Units 1 & 2 of Kudankulam Nuclear Power Plant (KNPP).

Advantage of the new fuel TVS-2M, over the existing fuels:

- The rigidity of a fuel bundle makes it more efficient and more vibration-resistant.
- The new fuel has increased uranium capacity - one TVS-2M assembly contains 7.6% more fuel material as compared to the earlier fuel bundles.
- The special feature of the Kudankulam fuel in particular is the new generation anti-debris filter protecting bundles from debris damage, which may be caused by small-sized objects in the reactor core.
- Operation in longer fuel cycles also enhances economic efficiency of a plant, as reactors have to undergo stoppage and refueling less frequently, so the power units produce more electricity.
 - ♦ A result of which the power plant needs to purchase less fresh fuel resulting in savings.

Reasons for India's dependence on other countries for its nuclear fuel:

- India's domestic uranium reserves are small and the country is dependent on uranium imports to fuel its nuclear power industry.
- Currently, a major portion of the domestic production of uranium comes from Jaduguda mines of Jharkhand, which are "old" and the ore is found at "great depths."
- Moreover, the high extraction cost makes it "unviable" as compared to imported uranium.
- Uranium is extracted from the Tummalapalle mines in Andhra Pradesh, Meghalaya, Andhra Pradesh, Rajasthan, Haryana, Karnataka and Tamil Nadu.
- Due to decreasing domestic uranium reserves, electricity generation from nuclear power in India declined by 12.83% from 2006 to 2008.

India's steps to reduce dependence on nuclear fuel imports:

- India has been making advances in the field of thorium-based fuels, working to design and develop a prototype for an atomic reactor using thorium and low-enriched uranium, a key part of India's three stage nuclear power programme.
- In order to fulfill the requirement of Uranium to fuel nuclear power plants, the Department of Atomic Energy will achieve a nearly ten-fold rise in uranium production in the next 15 years (by 2031-32).

Kudankulam Nuclear Power Plant (KKNPP):

- Kudankulam Nuclear Power Plant is situated in Kudankulam in the Tirunelveli district of Tamil Nadu.
- Kudankulam is the highest-capacity nuclear plant in India, with 2,000 MW currently installed and 2,000 MW under construction. Once completed, the plant will have a capacity of 6,000 MW.
- It is also the only nuclear plant in India that uses pressurized water reactors (PWR) based on Russian technology and is aimed to ensure the energy security of the country.
- Russia is building the KNPP under an Inter-Governmental Agreement (IGA) of 1988 and follow-on agreements in 1998 and 2008.

Types of Nuclear Fuel used for Power Generation:

- Uranium is the most widely used fuel by nuclear power plants for nuclear fission. Nuclear power plants use a certain type of uranium—U-235—as fuel. Although uranium is about 100 times more common than silver, U-235 is relatively rare at just over 0.7% of natural uranium.
- Plutonium-239 is produced and used in reactors (specifically fast breeder reactors) that contain significant amounts of uranium-238. It can also be recycled and used as a fuel in thermal reactors.
- Current research is being done to investigate how thorium-232 can be used as a fuel.

INDIA'S IMPORT OF NUCLEAR FUEL

- Currently, India imports uranium fuel from Russia, Kazakhstan, Uzbekistan, France and Canada.
- During the fiscal 2021-22, no nuclear fuel was imported by India.
- On the other hand, during FY21, 999.82 tonne natural uranium ore concentrate was imported from Kazakhstan for Rs 572.44 crore and 1,000.479 tonne was imported from Canada for Rs 618.95 crore.
- India will be importing 100 tonnes of natural uranium and 133 units of fuel assemblies next fiscal year.

GI TAG SOUGHT FOR GAUMUKH GANGA JAL

Recently, demand for a GI tag was put forward for Gangajal, collected near Gaumukh.

About:

- Gaumukh is the origin point of the Gangotri Glacier which is situated at a height of 13200 ft above the sea level.
- The water originating from Gomukh is pure and contains vital unique properties which make it eligible to be granted GI tag.

Properties of 'Goumukh Gangajal'

- **Neutral PH range:** The PH value of 'Gangajal' is 7.18 which is near the 'Neutral' category and can be considered best for 'potable' water.
- **Unique Properties:** 'Gangajal' has some unique anti-bacterial and self-cleaning properties.
 - ♦ This fact was proven by a study commissioned by the Union Water Resources Ministry.
- **High density of the Bacteriophages:** The study conducted by NEERI claimed that the water significantly has a higher proportion of organisms with antibacterial properties.
- It has three times more bacteriophages than other rivers such as Narmada and Yamuna.

BACTERIOPHAGES AND THEIR IMPORTANCE

- The bacteriophages are used in biological wastewater treatment.
- These organisms have the potential to control environmental wastewater problems such as foaming in activated sludge plants, and pathogenic bacteria and also protect functionally important microbial populations.

About Geographical Indications (GI) tag:

- Geographical indication (GI) is essentially a sign which is used on products that have a specific geographical origin.
 - ♦ It is regulated under the WTO agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).
- Such products possess specific qualities or bear a reputation related to the place of their origin'.
- A GI right enables those who have the right to use the indication to prevent its use by a third party whose product does not conform to the applicable standards.
- However, a protected geographical indication does not enable the holder to prevent someone from making a product using the same techniques as those set out in the standards for that indication.

- ♦ Protection for a geographical indication is usually obtained by acquiring a right over the sign that constitutes the indication.
- Currently, the GI tags are granted for the following categories of products:
 - ♦ Agricultural Products,
 - ♦ Foodstuffs,
 - ♦ Wine and Spirit drinks,
 - ♦ Handicrafts, and
 - ♦ Industrial Products.

GI tags in India:

- At present, India has 370 GI-certified products under different categories.
- Karnataka has been granted the highest number of GI tags. It has been granted GI tags for forty-seven products.
- **Regulation:** In India, GI tags are regulated by the 'Office of the Controller General of Patents, Designs & Trademarks' which works under the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry.
- **Validity of Certification:** The validity of certification for the Geographical Indication tag is ten years, which can be revised.

NEW DRUG FOR CANCER TREATMENT

Recently, a 'drug research' showed astonishing results in curing initial stage cancer.

About:

- A drug research trial sponsored by drug company GlaxoSmithKline, was done on 18 patients who were suffering from 'rectal cancer'.
- The results of the trial showed 100% recovery of every patient involved in the trial.
- It was the first time in medical history of cancer therapy that has shown such a recovery rate.

Conventional procedure of curing Cancer

- Conventionally, chemotherapy, radiation therapy, and surgery are used in elimination of cancer cells.
- **Chemotherapy:** It literally means treatment using chemical substances. The procedure involves use of drugs either to check the further growth of cancer cells or kill the infected cells.
 - ♦ It includes delivery of drugs either by mouth, injection into body, infusion or by absorption by applying on skin.
- **Radiation Therapy:** It uses high doses of radiation such as X-Rays to shrink tumors by killing cancer cells.
- **Surgery:** This medical procedure directly cures cancer cells or tissues by operating on a patient's body with the help of medical instruments.

STATUS OF CANCER IN INDIA

- According to a recent study by the World Health Organization, one in every ten Indians will develop cancer during his lifetime while one in 15 will die of the disease.
- **Breast Cancer:** It is the most common cancer and accounts for 10% of all cancer patients and causes the most cancer related mortality among women.
- **Cervical Cancer:** It develops in the cervix of women and is the second most common type of cancer causing mortality in India.
 - ♦ This cancer starts with human papillomavirus (HPV) infection transmitted sexually and can spread to other parts of the body.
 - ♦ It can also be transmitted to children from mothers during pregnancy.
- **Oral cancer:** It is caused on lips, mouth, tongues up to the pharynx. Chewing of tobacco and other associated products are major causes of such cancer.

State of Cancer in India

- **Mortality:** Cancer accounts for more than 9% of the total number of deaths in India.
- **Distribution of cancer patients across gender:** 94.1 per 100,000 males in India suffer from cancer while 103.6 per 100,000 women in India suffered from cancer in 2020.
 - ♦ In males, lung cancer is most prevalent while in females breast cancer dominates.
 - ♦ One in every 68 males suffers from lung cancer while one in 29 women suffer from breast cancer.

Difference between the new drug and the previous drugs

- The new drug applies the concept of conventional chemotherapy but with a different strategy.
- **First stage cancer patients:** The process included only those patients who had an early stage of cancer and had insignificant clinical complications.
- **Use of 'Immune Checkpoint Inhibitors':** These patients were treated with checkpoint inhibitor called 'pembrolizumab' for up to two years.
- **Mechanism involved:** 'Checkpoint Inhibitors' are those drugs which are used to block checkpoint proteins to bind with their partner proteins.
 - ♦ It allows the T cells to kill cancer cells because the 'negative stimulation signals' are prevented from being sent by cancer cells.
 - ♦ While a drug acts on any cell, proteins such as PD-1 and PDL1 often bind with the cell to check their destruction by T-cells.

- ♦ The 'Checkpoint Inhibitor' cells combine with the cancer cells and check 'negative stimulus signals' to be sent to proteins thus making it easy for T-cells to kill cancer cells.

Significance of the new drug Trial

- **No or Minimum Side Effects:** The patients involved in the trial had side effects of conventional 'checkpoint inhibitors' such as dostarlimab.
 - ♦ These drugs often unmask the cancer cells which lead to muscle weakness and difficulty swallowing and chewing.
 - ♦ During the trial these patients did not show any sign of side-effects to the new drug.
- **Checking life threatening surgery:** Patients who suffers from rectal cancer often undergo life changing surgery leading to bowel, urinary and sexual dysfunction.
 - ♦ The new trial will check the massive cost of treatment and need of large scale surgery.

Limitations of the New Cancer Drug

- **Old Methodology:** Although the drug has shown a promising effect, it uses old methodology of chemotherapy and use of 'Immune Checkpoint Inhibitors'.
 - ♦ The process of chemotherapy is itself a painful process.
- **Limited application:** The tested drug is only helpful in elimination of first stage cancers and only to those patients who do not have clinical complications.
 - ♦ Hence, it limits the use of drugs on patients who have developed later stage cancers.

MEDICAL PROCEDURES ASSOCIATED TERMS

- **Endoscopy:** It is a procedure which involves detection of deformities and abnormalities of internal organs of the body using biomedical instruments.
- **PET scans:** Positron Emission Tomography (PET) scan is a medical procedure which involves the detection of metabolic or biochemical function of tissues and organs.
 - ♦ It uses a 'radioactive drug' called tracer injected in the body and abnormalities detected through computerized tomography (CT) and magnetic resonance imaging (MRI).
- **MRI Scans:** Magnetic resonance imaging (MRI) is a medical procedure which involves use of magnetic field and computer-generated radio waves.
 - ♦ This technique is used to create images of internal organs to micro-level up to tissues and cellular deformities.
- **T-Cells:** T cells or T-lymphocytes are part of the immune system. These cells are developed from stem cells in the bone marrow and help to protect the body from infection and fight cancer.

ETHICS OF ARTIFICIAL INTELLIGENCE (AI)

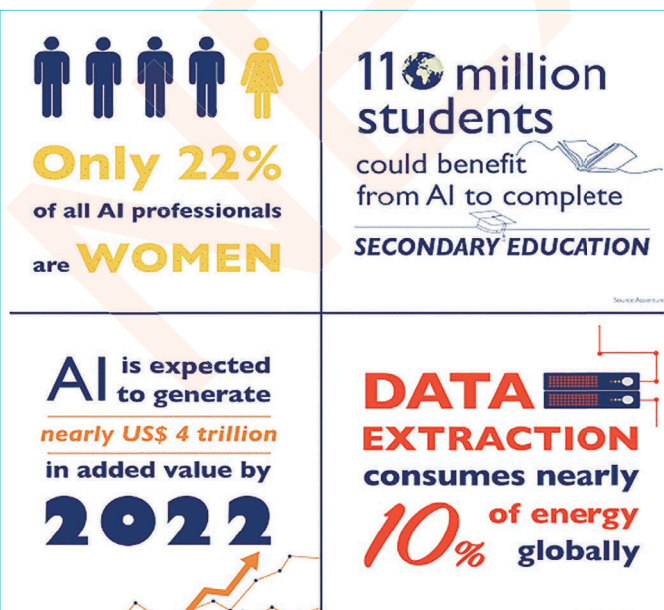
Due to widespread growth and applications of Artificial Intelligence (AI), demands have emerged for a new global standard on AI Ethics.

About:

- AI ethics is a system of moral principles and techniques intended to inform the development and responsible use of AI technology.
- In the last 5-10 years, AI has become integral to several products and services. Thus, organizations and countries have started to develop AI ethics.

Potential of AI:

- Presence of AI has become widespread in human lives and their interactions with others in digital space.
 - ♦ For example, nowadays social media platforms are able to provide customized user preferences and data to ensure a better consumer experience.
- AI algorithms have also helped the global community in managing complex data of clinical trials and thereby contributing to vaccine development. This ensured global solidarity in the fight against the COVID-19 pandemic.
- AI technology can be said to be a part of applied ethics in several fields of human endeavor.



Ethical issues associated with AI:

- 21st-century societies are confronting the legal and ethical issues arising from AI. Thus, AI technology can rightfully be called a double-edged sword.
- **Bias or Discrimination:** Data feed into AI does not represent societal (national or global) diversity completely, thus producing biased outcomes.
 - ♦ For example, though India and China hold a third of the world's population, they form only 3% of images used in ImageNet.
 - ♦ **Gender bias:** Only 1 out of 10 software developers worldwide is female.
- **Privacy and surveillance:** Facial recognition technologies having access to people's phones, bank accounts, and apartments are being employed by law enforcement authorities to identify women and darker-skinned people.
- **Tampering with democracy:** AI based algorithms and big data applications can be used to alter voting decisions. E.g. Cambridge Analytica.
 - ♦ It serves as a grave reminder and potent warning to individuals and societies to safeguard themselves against the unethical impacts of AI business models and applications.
- **Behavior manipulation:** AI use of collected information to manipulate users' behavior online and offline undermines autonomous rational choice.
 - ♦ E.g. The blue whale game challenge induced suicidal tendencies amongst teenagers.
- **Tech Addiction:** Consumers are vulnerable to "nudges", manipulation, and deception due to their intense interaction with data systems and the deep knowledge about individuals thus provided.
 - ♦ For example, the PUBG game was banned in India due to its ability to inflict self harm and aggressive behavior in players.
- **Opacity:** AI systems' use of automated decision support and predictive analytics raise huge concerns about the lack of due process, accountability, community engagement, and auditing.
 - ♦ They create a power structure where decision-making processes constrain and limit opportunities for human participation.
- **Technological singularity:** The idea of AI surpassing human intelligence (superintelligence), as a theme of many SCI-

FI movies, is not likely in the near future. However, such autonomous and emerging technologies raise the question of accountability.

- ♦ **For example**, there is debate among civil society about who will be held responsible for accidents and deaths in self-driving cars.
- **Human-robot interactions:** AI can be used to drive robots that are problematic if their processes or appearance involves deception, threaten human dignity, or violate the Kantian requirement of "respect for humanity".
- **Employment loss:** AI and robotics automation are causing "job polarization".
 - ♦ The highly skilled technical jobs are in demand and they are highly paid as well.
 - ♦ The low-skilled service jobs are in demand and badly paid.
 - ♦ But, the majority of the mid-qualification jobs in factories and offices are under pressure and reduced as they are relatively predictable and thus can be automated.
 - ♦ However, with the advent of every disruptive technology, the market demand for jobs shifted.
 - ♦ E.g. Automobile manufacturer GM shifted to electric motors to align with green initiatives.

Need for AI Ethics:

- Human beings exhibit cognitive biases such as recency and confirmation biases through their behaviors and through their data.
- Since data is the foundation for all machine learning algorithms, structuring experiments and algorithms of artificial intelligence is just as it has the potential to amplify these human biases at an unprecedented rate.
- With technological advances in Big Data, AI, and Machine learning, innovation is outpacing government regulation. Thus, the government needs to develop expertise to formulate AI protocols for companies and compel them to avoid any infringements on human rights and civil liberties.

Steps taken to develop AI Ethics:

India:

- **National Strategy on Artificial Intelligence by NITI Aayog in 2018:** It highlighted the huge potential of AI in solving complex social challenges faced by Indian citizens across areas like agriculture, health, education, etc.
 - ♦ It also accounted for the significant economic returns generated by the AI related technologies.
- **NITI Aayog's #AIForAll campaign:** Through this, India made huge progress in the development of responsible and ethical AI governance. Also, several corporate strategies are adopted to ensure that AI is developed with common, humanistic values at its core.

- **Global Partnership on Artificial Intelligence (GPAI):** GPAI was launched in June 2020. It has 25 member countries including India.
 - ♦ **Aim:** To provide a mechanism for sharing multidisciplinary research and identifying key issues among AI practitioners, with the objective of facilitating international collaboration, reducing duplication, acting as a global reference point for specific AI issues, and ultimately promoting trust in and the adoption of trustworthy AI.
- **RAISE 2020:**
 - ♦ The Responsible AI for Social Empowerment (RAISE 2020) was India's first global AI Summit organized by the Government of India in partnership with Industry & Academia.
 - ♦ **It talked about equitable AI:** Bias in Algorithms, Ethical AI: Regulatory Hurdles, Human Centric Design and Ethical Ecosystem Awareness.
- **AI governance with a "whole of society" approach:**
 - ♦ It will help in the development of broad-based ethical principles, cultures, guidelines and codes of conduct.
 - ♦ This in turn will promote the exercise of harm-mitigating measures and incorporation of audit and review mechanisms in the design, development and deployment phases.
 - ♦ It will inculcate the values of ethical governance like transparency, accountability, inclusion and societal trust in AI systems and its breakthroughs.

World:

UNESCO's Recommendation on the Ethics of Artificial Intelligence

- Last year, 193 member countries of UNESCO agreed on how AI should be designed and used by governments and tech companies.
- This was preceded by online consultations with people from a diverse range of social groups.
- Its objective is to shift the balance of power amongst people, businesses, and governments developing AI.
- While developing any technology, ethics and human interface needs to be given primary consideration.
 - ♦ If the centrality of human interests is ignored, it leads to inequality; causes a conflict of human values, and disturbs the delicate ethical balance in societies.

Measures to strengthen ethics of AI:

- For ethical AI governance a set of right incentives need to be established in the national and subnational policies of UNESCO member countries.
 - ♦ Probity should be maintained in the management of AI governance.
- Governments should formulate policies based on affirmative action to promote fair representation of women, differently-abled, and minority groups in AI design and applications.

- Dedicated funds should be established in annual public budgets to support inclusion programmes with education, and awareness generation through information dissemination.
- Personal data control needs to be in the hands of users. The system in place should empower them to access and delete personal information as needed. E.g. GDPR legislation by the EU in 2016.
- Governments must ensure that adequate safeguards are devised to process sensitive data with prompt accountability and integrity.
 - ♦ There should be a citizen's charter or an effective grievance redressal mechanism in case of violation of consent or harm.
- Member states of UNESCO should undertake psychological and cognitive impact studies to understand how AI systems can impact the attitude and behavior of children, youth, and the old aged.
- **AI Aptitude:** Member states need to invest in and promote not only digital, media, and information literacy skills, but also socio-emotional and AI ethics skills.
 - ♦ It will strengthen critical thinking, emotional intelligence, and AI competencies in the digital era.
- **Rule of law:** AI systems and technologies should be effectively regulated to prevent the scope of their misuse by anti-social elements, cyber-terrorists, etc.
 - ♦ This will ensure transparency, objectivity, and rule of law in AI operations. E.g. 2017 AI Strategy of Finland.

ADDITIONAL INFORMATION

- **Ethics** is a set of moral principles which help us discern between right and wrong.
- **Artificial intelligence (AI)** is the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.
- **Belmonte report for AI:** It is a means to guide ethics within experimental research and algorithmic developments in AI. It has given 3 principles:
 - ♦ **Respect for persons:** It respects individual autonomy and expects researchers to protect it under circumstances like illness, age restriction, mental disability, etc. It gives primary importance to consent.
 - ♦ **Beneficence:** It is regarding healthcare ethics where doctors take an oath not to do any harm. It can be applied to AI to prevent algorithm development from amplifying biases around race, gender, political leaning, age, ethnicity, nationality, etc.
 - ♦ **Justice:** It deals with ideals of fairness and equality. There can be 5 ways to distribute benefits or burdens of AI, which are equal share, individual need, individual effort, social contribution, and merit.

ETHICS OF PROTEST

Recently, the widespread protests against the Agneepath scheme took a violent turn.

About:

- The Government of India had recently announced the Agniveer Scheme for tri-services recruitment.
- **Short tenure:**
 - ♦ Under the scheme, soldiers will be recruited for four-year tenure.
 - ♦ Only 25 % of the total annual recruits will be allowed to continue for 15 more years under permanent commission.
- **Grievances of aspiring youth:** Aspirants for defense services have been protesting against the short tenure of jobs, lack of pension benefits and concerns regarding long-term job security.
- **Anger Management:** Feelings of mistrust, anger and alienation resulted in aspirants to indulge in rioting and destruction of public property across many cities and states.

An account of Past Losses due to Violent Protests:

- Public agitations in the recent past have caused damage to public property and there has been little or no recovery of cost. These incidents can be reflective of general loss of civic values in the public sphere.
- **Political mobilisations for vested interests:**
 - ♦ 2016 Haryana Jat stir damaged public and private property worth 1800-2000 crore.
 - ♦ 2015 Patidar agitation vandals torched more than 660 government vehicles and 1,822 public buildings.
 - ♦ Gujar community's quota stir in Rajasthan.
- **Hurt religious sentiments and perceived threat to long held beliefs:** During Sabarimala protests in 2018, 49 State-owned buses were damaged.
- **Sensitive historic cultural group pride:** Rajasthan witnessed incidents of vandalism and arson during the Padmavat controversy.
- **Citizenship related issues:** In West Bengal alone, Indian Railways lost an estimated 80 crores worth of property in four days during CAA protests, due to perceived loss of citizenship related dignified residence.

Law and Ethics: The Right to Protest:

- **Article 19 of the Indian Constitution** provides the Right to Protest. It gives the right to freedom of speech and expression, the right to assemble peaceably and without arms, and the right to form associations and unions.

- **Supreme Court in Mazdoor Kisan Shakti Sangathan vs Union Of India, held:**

- ♦ The right of people to hold peaceful protests and demonstrations etc. is a fundamental right guaranteed under Articles 19(1)(a) and 19(1)(b) of the Constitution.
- ♦ "Freedom of speech, right to assemble and demonstrate by holding dharnas and peaceful agitation are the basic features of a democratic morality.

Reasonable restrictions on the Right to protest:

- **Democratic morality:** Democracy is a rule of the people, by the people and for the people. Thus, it is the bedrock of empowered citizenry by ensuring their participation in governance.
 - ♦ However, the Indian Constitution offers freedom to its citizens rather than absolute liberty.
- **Constitutional Morality:** Rights under article 19 can be curbed in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality or in relation to contempt of court, defamation or incitement to an offense.
- **Administrative Ethics:** Under Section 144 of CRPC, a magistrate is supposed to pass an objective order putting restrictions on movement, carrying arms, and unlawful assembly.
 - ♦ An assembly of three or more people becomes prohibited under Section 144.

Legal provisions and court rulings on the destruction of public property:

- The threat of sanction or punishment is required for a set of individuals who are not bound by principles of self-restraint and a personal code of ethics.
- **The Prevention of Damage to Public Property Act, 1984** has provisions regarding punishment for the destruction of public property. It has provisions of a jail term of up to five years and a fine or both.
- **Section 425 in The Indian Penal Code** also has provisions for the destruction of public property.
- **The Supreme Court:**
 - ♦ To fulfill demands, agitators cannot vandalize public property and hold everything to ransom.
 - ♦ Framed guidelines based on the recommendations of 2 committees headed by Justice K T Thomas and Fali Nariman, to protest peacefully and abjure violence.

Ethics of Protest:

- **Fundamental Duties:** Citizens have a fundamental duty to safeguard public/private property and to avoid violence during the protests.

- Following the ideals of the freedom struggle is also a fundamental duty which should be inculcated in children, youth and adhered to by every citizen of India.
- India is a land of peaceful coexistence, tolerance and non-violence as propagated by Gandhi, Buddha, Sant Kabir, Guru Nanak.
 - ♦ **For example,** Gandhi always followed a path of ahimsa (non-violence) against the mighty yet unjust and morally corrupt British empire.
- **Unethical actions:** Hooliganism and Vandalism have no space in a democratic society with a better civic sense.
 - ♦ **Martin Luther King Jr** said that use of violence and intimidation against perceived injustice or oppression would only create an obstacle in the way of creating a just and loving community.
- **An ethical balance:** There needs to be a fine balance between the theory of natural rights and duties towards the State and the society at large.

For example:

 - ♦ Farmers' protests though lasted for a longer time, were largely peaceful and resulted in repeal of the farm laws by the government.
 - ♦ Chipko Andolan was a huge success in keeping the spirit of ecological restoration alive amongst the local populace.
- **India's ethical and moral compass:**
 - ♦ We advocate the ethical tenets of Atithi Devo Bhava, Sarve Sukhino Bhavantu and Incredible India on global platforms.
 - ♦ However, the pervasive culture of violence and destruction threatens India's image as a Vishwa Guru and affects credibility of its soft power status.

Way Forward:

- Peaceful protests are the hallmark of any functioning democracy.
- The government intends to inculcate patriotism in youth aspirants to ensure new recruits are a source of ethical values like teamwork, military skills (right aptitude) and energy (proper conduct and behavior).
- As said by Swami Vivekananda, youth of the nation should task themselves with promoting ideals of humanity, fortitude and integrity in themselves.
- Youth should foster the spirit of brotherhood, humanity and become emotionally intelligent citizens of 21st century India.

SAINT KABIR

The President of India recently paid tribute to the Bhakti saint Kabir on his 650th birth anniversary.

About:

- The President inaugurated the Sant Kabir Academy and Research Center Swadesh Darshan Yojana at Maghar (Uttar Pradesh) on the occasion.
 - ♦ According to legends, Kabir is said to have departed from the mortal world in Maghar.
- The President also mentioned that the life of Kabir is an epitome of human virtue and his teachings are relevant today even after 650 years.
 - ♦ He also said that Kabir's life was an ideal example of communal solidarity.

About Sant kabir:

Early Life:

- He was born in Varanasi and lived between the years 1398 and 1448, or till the year 1518 according to popular belief.
- He was from a community of 'lower caste' weavers of the Julaha caste.

Saint Kabir and Bhakti Movement:

- Kabir was a prominent Nirguna bhakti saint. His beliefs were deeply radical, and he was known for his intense and outspoken voice which he used to attack the dominant religions and entrenched caste systems of the time.
 - ♦ He composed his verses orally and is generally assumed to be illiterate.
- He is also believed to be a disciple of the famous guru Ramananda, a 14th century Vaishnava poet-saint.
- Kabir did not only target the rituals and practices of both Hinduism and Islam, but also dismissed the sacred authority of their religious books, the Vedas and the Quran.
- Kabir did use the name Rama in his poems, but he clarified that he was not referring to the avatar of Vishnu, but a formless and general Hindu name for the divine. Author Manu S Pillai writes that he even combined Allah and Ram.
- Instead of God being an external entity that resided in temples or mosques, Kabir argued that God existed inside everyone.
- Kabir's revolt against the caste system also sought to do away with the complex rituals and ceremonies performed by the Brahmins.

- ♦ He, like the other prominent saints of his time, argued that it was only through bhakti, intense love or devotion to God could one attain salvation.
- In many of his verses, Kabir proclaimed that people of all castes have the right to salvation through the bhakti tradition.

BHAKTI MOVEMENT

- The Bhakti movement began in the 7th century in South India, and spread across north India in the 14th and the 15th centuries.
- The movement was characterized by popular poet-saints who sang devotional songs to God in vernacular languages., with many preaching for the abolishing the Varna system and some kind of Hindu-Muslim unity.
- The movement emphasized an intense emotional attachment with God.
- Some prominent saints of Bhakti movement are Shankaracharya, Ramanuja, Tulsidas, Chaitanya, Surdas, Meera, Namadeva, Sant Eknath, Tukaram, Ramdas.

Kabir's Work

- Kabir's composition style was earthy and pithy, interspersed with imagery and surprise.
- Being illiterate, Kabir expressed his poems orally in Hindi, using dialects such as Avadhi, Braj, and Bhojpuri, which were spoken in the area. His Hindi was straightforward, as were his philosophies.
- A major part of Kabir's work was collected by Guru Arjan Dev, the fifth Sikh guru, who incorporated them into the Sikh scripture, Guru Granth Sahib.
 - ♦ Kabir's works consist mostly of two-line couplets, known as 'Kabir ke Dohe'.
- His greatest work is the Bijak (the 'Seedling'). This collection of poems explains how Kabir viewed spirituality.
- His vocabulary may be replete with words such as Brahman, karma and reincarnation, which are Hindu spiritual concepts, Kabir is known for his vehement opposition to dogmas, both in Hinduism and Islam.
- He would often ask his followers to leave aside the Quran and the Vedas, and simply follow the Sahaja path, which he described as the simple or natural way to God.
- He believed in the Vedantic concept of atman, but rejected the Hindu custom of idol worship, showing clear belief in both Bhakti and Sufi philosophies.

- **Literary Work of Kabir:** Some of the great writings of the Kabir Das are Bijak, Kabir Granthawali, Anurag Sagar, Sakhi Granth, etc.

Legacy:

- Kabir's own humble origins and his radical message of egalitarianism fostered a community of his followers called the Kabir Panth.
- A sect in northern and central India, many of their members are from the Dalit community.
- Today, the sect exists as a large and distinct community, with various sects under different spiritual leaders. However, all regard Kabir as their guru and treat the Bijak as their holy scripture.
- The Bijak contains works attributed to Kabir and is argued by historians to have been written in the 17th century.
- Today, most of the followers continue to reject idol worship and are discouraged from praying at Hindu temples, according to the historian David Lorenzen.
- The main festival of most branches is Kabir Jayanti, the birthday of Kabir which is celebrated every summer with collective feasts at the maths.

BABA BANDA SINGH BAHADUR

Martyrdom day of Baba Banda Singh Bahadur was celebrated on 25th June, 2022.

About:

- Martyrdom Day of Baba Banda Singh Bahadur was celebrated at Shahidi Sthal, Shri Guru Singh Sabha Gurudwara, Mehrauli, New Delhi.

About Baba Banda Singh Bahadur:

Childhood and early life:

- He was born on Kartik Sudi 27th of October, 1670 at Rajouri in the Punchh district of western Kashmir and in childhood, he was known as Lachhman Dev.
- In his youth, he was very energetic and had developed hobbies of wrestling, horse riding, shooting and hunting.
- After a hunting incident, he changed his outlook on life. He left his home and became a recluse. Soon, he met a Bairagi Sadhu, Janaki Das and became his disciple and was named as Madho Das by his teacher.
- He travelled through Northern India in the company of the Sadhus and eventually settled in Nanded (in present-day Maharashtra) in central India which is situated on the bank of the river Godavari.

Meeting with Guru Gobind Singh:

- In September 1708, Guru Gobind Singh had come to the Deccan along with the Mughal Emperor, Bahadur Shah.
- He met Madho Das and encouraged him to give up his recluse lifestyle and the lonely way of living.
- Guru Govind Singh asked him to resume the duties of a true warrior to fight for righteousness and justice before God.

Issues with Mughals:

- Guru Gobind Singh had hoped that Emperor Bahadur Shah would fulfill his promise and do justice in the Punjab.
- He expected the emperor to punish the Governor of Sirhind, Nawab Wazir Khan for crimes against the common people including the deaths of the Guru's mother, Mata Gujri and his two younger sons, Sahibzada Zorawar Singh and Sahibzada Fateh Singh.
- But after the reluctance of the emperor, the Guru deputed Madho Das Bairagi under the leadership of five Sikhs, to end Mughal persecution of innocents in Punjab.
- Guru Gobind Singh held a darbar and on 3 September 1708 and baptised Madho Das with Khanda di pahal and conferred on him the title of Banda Singh.
- He appointed him as his military lieutenant and entrusted him with full political and military authority as his deputy to lead the Punjab campaign against the exploitative Mughal administration and to punish Nawab Wazir Khan and his accomplices.
- Banda Singh Bahadur was offered five gold tipped arrows and a nagara (drum) as symbols of authority. He was also given an advisory council of five devoted Sikhs (Hazuri Singhs), who would assure the Sikhs in Punjab that he was the Guru's nominee and deputy.
- He was authorized to organize people under his leadership, in order to lead an expedition against Sirhind.

Achievements of Baba Banda Singh Bahadur:

- He was a great Sikh warrior and a commander of the Khalsa army. He defeated the Mughals and liberated a large part of North India from oppressive Mughal rule and established the Khalsa rule in Punjab.
- He abolished the Zamindari system and granted property rights to the tillers of the land, as Sikhs were mostly from the agricultural classes.
- He was a Noble ruler who introduced the Nanak Shahi coins.
- He promoted the fire of independence ignited by Guru Gobind Singh. He created a will in the ordinary masses to resist tyranny and to live and die for a common or national cause.
- He was captured by Mughal ruler Farrukhsiyar and his martyrdom took place in Mehrauli where a monument stands in his memory.

ARCHAEOLOGICAL EXCAVATIONS IN DUM DUM

Recently, the excavations were carried out by the Kolkata Circle of the Archaeological Survey of India (ASI) at a mound outside Clive House.

Findings at the excavation site:

- The new finds include 12 cultural layers of habitations over virgin soil.
- Various types of potteries belonging to various periods (Gupta, post-Gupta, Kushan, Islamic, early medieval, medieval)
- Coins including some with punch marks and some of copper and broken parts of terracotta figurines
- Copper antiquities such as hairpin and iron nail; fish hooks, stone beads etc.

Importance/ Significance of the findings

- **First century CE:** Archaeological excavations in Dum Dum dating back as far as the first century CE have provided further evidence of human habitation in Kolkata from centuries before the time British administrator Job Charnock was said to have founded the city.
- **History before colonial era:** There is definitely a history of this place which predates the colonial era.
 - ♦ Even before the zamindari of Sabarna Roy Choudhury and others, the place had settlements.
- **Human settlement:** It indicates that there was human settlement in this area dating back to first and second centuries CE.
- **Clive House:** which itself stands on a mound, is one of the oldest buildings in Kolkata.
 - ♦ It is named after Robert Clive, the first British Governor of Bengal Presidency, who used it as a country house.
- **Pre-Mauryan to the Pala periods:** It is close to a site called Chandraketugarh, where excavations in the 1950s and 1960s revealed an almost continuous sequence of habitations from six periods from the pre-Mauryan to the Pala periods.
- **Evidence of floods:** The recent excavations at the mound have given us evidence of floods with layers of soil deposits we can be sure that there was some kind of continuous settlement.

JOB CHARNOCK

- He worked for the East India Company.
- He has historically been credited with founding the city in 1690 when the Company was consolidating its trade business in Bengal.
- The date of Charnock's arrival in the city (August 24) was considered Kolkata's birthday.

Controversy

- **Calcutta High Court:** The view about Charnock being the founder was challenged and in 2003, Calcutta High Court declared that Charnock ought not to be regarded as the founder.
 - ♦ It ordered the government to purge his name from all textbooks and official documents containing the history of the city's founding.
- **Report from an academic committee:** The court found that a highly civilised society and an important trading centre had existed on the site long before Charnock established his settlement.
- **Kalikatah:** The committee found that a place called Kalikatah was an important religious centre adjacent to Kalighat village with its Kali temple.
 - ♦ The site is mentioned in Bipradas Pipilai's Manasa Mangala (1495) and Abul Fazl's Ain-I-Akbari (1596).

THE SANT TUKARAM TEMPLE

Recently, the Prime Minister inaugurated the Sant Tukaram Shila Mandir in the temple town of Dehu in Pune district.

The Shila Mandir

- Shila refers to a rock that is currently on the Dehu Sansthan temple premises.
- It has been the starting point of Wari, the annual pilgrimage to Pandharpur for centuries.
- The Bhakti saint Sant Tukaram had sat on this piece of rock for 13 continuous days when challenged about the authenticity of the Abhyangs he had written.
- The very rock where Sant Tukaram Maharaj sat for 13 days is pious and a place of pilgrimage for the Warkari sect.
 - ♦ Sant Tukaram and his work are central to the Warkari sect spread across Maharashtra.

Warkari Sect

- Warkari/Varkari is a school of Bhakti based on Bhagavata Dharma, the main deity worshipped being Vithoba or Vitthal.
- It is geographically associated with the Indian states of Maharashtra and northern Karnataka.
- In the Marathi language of Maharashtra, vari means 'pilgrimage' and a pilgrim is called a varkari. Every year, Varkari walks hundreds of miles to the holy town of Pandharpur, gathering there on ekadashi (the 11th day) of the Hindu lunar calendar month of Aashaadha. Another pilgrimage is celebrated on the ekadashi of the month of Kartik.
- Varkaris worship Vithoba (also known as Vitthal), the presiding deity of Pandharpur.
- Vithoba is a form of Krishna, an avatar (incarnation) of Vishnu. Because of this association with Vishnu, Varkari is a branch of Vaishnavism.

- The teachers responsible for establishing and supporting the movement through its history include Dnyaneshwar, Namdev, Tukaram, Chokhamela.

About Sant Tukaram:

- He was a prominent Maharashtrian saint and religious poet.
- He was born in Dehu, a town close to Pune in 17th century CE and lived there for most of his life.
- Tukaram was a devotee of Lord Vittala (or Vithoba) an incarnation of Lord Krishna, who in turn, is considered to be an incarnation of Lord Vishnu.
- He is quite renowned for his contribution to the Bhakti Movement of Maharashtra.
- Like Namdev, Janabai, and Eknath, Tukaram wrote in archaic Marathi a large number of devotional poems identified in Marathi as abhang.
- A collection of 4,500 abhang known as the Gatha is attributed to Tukaram.
- It is believed that he was a contemporary of Shivaji Maharaj.
- Tukaram puts bhakti at the centre of his spiritual life.
- Statement of his philosophy of religion:** "God has no form, nor any name, nor any place where he can be seen; but wherever you go, you see God."
- Tukaram embraced male and female disciples and devotees alike.
- Tukaram's psychology, theology, and theodicy are never systematic.
 - He alternates between a Dvaitist [Vedanta] and an Advaitist view of God and the cosmos, leaning now toward a pantheistic system of things and now toward a specifically providential one, and he does not harmonise them.
- Social movement:** He preached about a society without caste and turned away from rituals, which led to a social movement.
- Wari pilgrimage:** Sant Tukaram is credited with starting the Wari pilgrimage where devotees of Lord Vitohba, an avatar of Lord Vishnu, walk 250 kilometres from Dehu (also the birthplace of the saint) to the Shri Vitthal-Rukmini Mandir in Pandharpur over 21 days.

- Region:** The art is based in the eastern Indian states of Odisha, West Bengal and parts of Bangladesh. People in Odisha practice this art to this day.
- Etymology:** It is a Sanskrit word. When broken down into its two parts, Patta means cloth, and Chitra means picture. Hence, Pattachitra is a picture painted on a piece of cloth.
- Painting process:** Traditionally the painters are known as chitrakars. Chitrakars follow a traditional process of preparing the canvas.
 - A gauze-like fine cotton cloth is coated with white stone powder and gum made out of tamarind seeds.
 - This makes the canvass ready to accept the paint, made of natural colors.
 - The gum of the kaitha tree is the chief ingredient, used as a base for making different pigments by adding available raw materials.
 - Following completion of a painting, the canvas is held over a charcoal fire and lacquer is applied to the surface.
 - In recent days Chitrakars have also painted on palm leaves and Tussar silk and have created wall hangings and showpieces.

Significant features of the Pattachitra Paintings:

- Pattachitra is predominantly icon painting.
- A floral border is a must around the paintings, and so is the use of natural colors.
- The paintings are executed primarily in profile with elongated eyes. Generally, there are no landscapes, perspectives, and distant views.
- The dress style has Mughal influences.
- Some of the popular themes of this religious art are:
 - The Badhia (a depiction of the temple of Jagannath);
 - Different "Vesas" of Shri Jagannath, Balabhadra and Subhadra.
 - Krishna Lila (an enactment of Jagannath as Lord Krishna displaying his powers as a child);
 - Dasabatara Patti (the ten incarnations of Lord Vishnu); and Panchamukhi (a depiction of Lord Ganesh as a five-headed deity).



PATTACHITRA PAINTING

Recently, the Chief Minister of Odisha gifted the Pattachitra painting to Pope Francis in Vatican City.

About:

- Origin:** This form of art is closely related to the cult of Shri Jagannath and the temple traditions in Puri. It is believed to have originated as early as the 12th century.

HANS ISLAND

Recently, Denmark and Canada have decided to share the tiny uninhabited Hans Island after almost decades of conflict over it.

About:

- **Location:**
 - ♦ It is in the center of the **Kennedy Channel** of **Nares Strait**.
- **Geological Features:**
 - ♦ It is a small, uninhabited, barren, lifeless little knoll.
 - ♦ The exposed portion of Hans Island consists of 195 m (640 ft) of **Silurian limestone**.
 - The Silurian Period, in geologic time, is the third period of the **Paleozoic Era**.
 - ♦ Hans Island is the smallest of **three islands in Kennedy Channel**:
 - ♦ The others are Franklin Island and Crozier Island.
 - ♦ **Nares Strait**—
 - This strait separates Ellesmere Island from northern Greenland and connects Baffin Bay with the Lincoln Sea.
- The island is named after **Hans Hendrik**, an Arctic traveler and translator (1853 to 1876).

LA REUNION ISLAND

Recently, the navies of India and France concluded their second joint patrolling in the South-Western Indian Ocean (La Reunion Island).

About:

- **Location:**
 - ♦ It is an **island in the Indian Ocean** that is an overseas department and **region of France**.
 - ♦ Réunion also holds the **status of a region of France** and is an **integral part of the French Republic**.
 - ♦ Réunion is an **outermost region of the European Union** and is **part of the eurozone**.



- **Borders:** It is located approximately 950km east of the **island of Madagascar** and 175 km southwest of the **island of Mauritius**.



TAJIKISTAN

A fully-fledged 50-bedded hospital "India-Tajikistan Friendship Hospital (ITFH)" was recently handed over to the government of Tajikistan.

About:

- **Political Boundaries:** It is a landlocked country in Central Asia. It is separated narrowly from Pakistan by **Afghanistan's Wakhan Corridor**.
 - ♦ **North:** Kyrgyzstan
 - ♦ **East:** China
 - ♦ **South:** Afghanistan
 - ♦ **West:** Uzbekistan
- **Capital:** Dushanbe

Geographical Features:

- It is covered by mountains of the Pamir range.
 - ♦ **Pamir Mountains:**
 - It is a mountain range between Central Asia, South Asia, and East Asia.
 - It is located at a junction with other notable mountains, namely the Tian Shan, Karakoram, Kunlun, Hindu Kush, and the Himalayas mountain ranges. They are among the world's highest mountains.



KATCHATHEEVU ISLAND

Recently the Chief Minister of Tamil Nadu demanded the retrieval of Katchatheevu island in India.

About:

- **Location:**
 - ♦ It is a small uninhabited island in **Palk Strait**, that connects the **Bay of Bengal to the Arabian Sea**.

- ♦ It is located between **Neduntheevu, Sri Lanka, and Rameswaram, India.**



History:

- It is a disputed territory between Sri Lanka and India, claimed until 1976 by India, and administered by Sri Lanka at the moment.
- In 1974, the then Prime Minister Indira Gandhi signed four **Maritime Boundary Agreements** between 1974-76 with her counterpart Srimavo Bandaranaike, Sri Lankan President, and **ceded Katchatheevu Island to Sri Lanka**.
- But, the Tamil Nadu government refuses to accept this agreement and demands retrieval of the island from Sri Lanka.
- According to the agreement between the Indian and Sri Lankan governments, the citizens of India are not required to possess an Indian passport or Sri Lankan visa for visiting Kachchatheevu.

BARACK VALLEY

Recently, the overflowing of river Barak has led to a massive flood in the Barak valley of Assam.

About:

- The valley is located in the **southern region** of the Indian state of **Assam**.
- The region is named after the Barak river.
- The Barak valley consists of three administrative districts of Assam - namely **Cachar, Karimganj, and Hailakandi**.

Geographical Features:

- The main city of the valley is **Silchar**.
- **Barail** is the only wildlife sanctuary in the Barak valley region.

- The **Patharia hills reserve forest** of Karimganj is the habitat of many mammals.
- **Barack River system:**
 - ♦ The Katakhal, Jiri, Chiri, Modhura, Longai, Sonai, Rukni, and Singla are the main tributaries of the river.
 - ♦ The tributaries are mainly rainfed and cause flood problems when precipitation occurs.
 - ♦ The Barak sub-basin drains areas in **India, Bangladesh and Myanmar.**

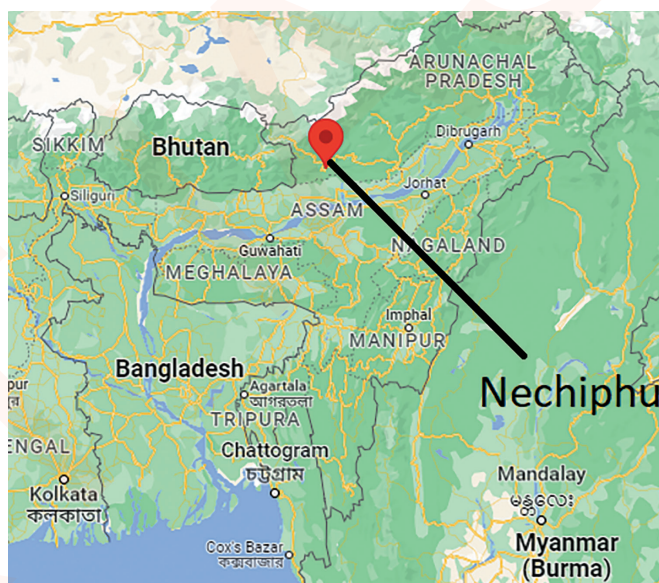


NECHIPHU TUNNEL

Recently, excavation work of Nechiphu tunnel in Arunachal Pradesh was completed. It has been excavated under 'Project Vartak'.

About:

- It is located on the **Balipara-Charduar-Tawang (BCT) Road** in **West Kameng District**.
- **It will connect:** Balipara in Assam to Tawang in Arunachal Pradesh.



- **Characteristics:** It is a unique D-shaped, Single Tube Double Lane Tunnel.
- **Significance:**
 - ♦ It will bypass the extreme foggy conditions around the Nechiphu Pass, this tunnel was planned.
 - ♦ It will also cut down the travel time of military vehicles moving towards forward base near China.

MARTIN ENNALS AWARD

Annually the Martin Ennals Foundation gives out an award for people who have secured Human Rights.

About:

- The Martin Ennals Foundation decided to posthumously pay homage to Father Stan Swamy, a Jesuit priest and tribal rights activist from Jharkhand.
- The Martin Ennals Foundation, based in Geneva, Switzerland, gives out an award that is regarded as the Nobel Prize for human rights defenders.
 - ♦ Three people were selected for the award this year.
- Swamy worked closely with Adivasi communities to safeguard their land, forest and labour rights.

ABOUT STANLEY SWAMY'S CONTRIBUTION

- Father Stan Swamy was a Jesuit priest and a tribal rights activist based in Jharkhand.
- He had worked in the state for over three decades on various issues of the adivasi communities on land, forest and labour rights.
- His work includes questioning the non-implementation of the Fifth Schedule of the Constitution, which stipulated setting up of a Tribes Advisory Council with members solely of the adivasi community for their protection, well-being and development in the state.
- Swamy's work also involved opposition to the setting up of "land banks", which he argued would free up land belonging to the community to set up small and big industries.

About Martin Ennals:

- Ennals was a British activist who spent his life working to secure human rights across the world.
- He was Secretary-General of Amnesty International from 1968 to 1980. Ennals also co-founded several organisations, such as Article 19, International Alert and Huridocs and formed "the binding force between them".
- Ennals argued that "We criticise universally because human rights are universal even if they are universally disregarded."

- He argued that there are double standards and double talk and there will always be an infringement of human rights. The work we are doing is part of the overall package of human development whatever the political system, country or cultural background is".
- Ennals died in 1991 and, in his memory, the Martin Ennals Award for Human Rights Defenders is given to "individuals and organisations that have shown exceptional commitment to defending and promoting human rights, despite the risks involved".

STATE FOOD SAFETY INDEX

Recently the fourth State Food Safety Index award was announced by the Food Safety and Standards Authority of India (FSSAI).

About:

- FSSAI releases the State Food Safety Index (SFSI) annually for each financial year.
- The award was started in 2018-19 and this year marks the fourth State Food Safety Index award.
- **Aim:** The award aims to create a competitive and positive change in India's food safety ecosystem.

Ranking under State Food Safety List 2022:

- **Larger states:** Tamil Nadu topped the list among larger states, followed by Gujarat and Maharashtra, in the State Food Safety Index awards announced by the Union Health Minister on the occasion of World Food Safety Day.
- **Smaller states:** Goa was the winner, followed by Manipur and Sikkim.
- **Union Territories:** Jammu and Kashmir emerged top followed by Delhi and Chandigarh.

About the Food Safety Index:

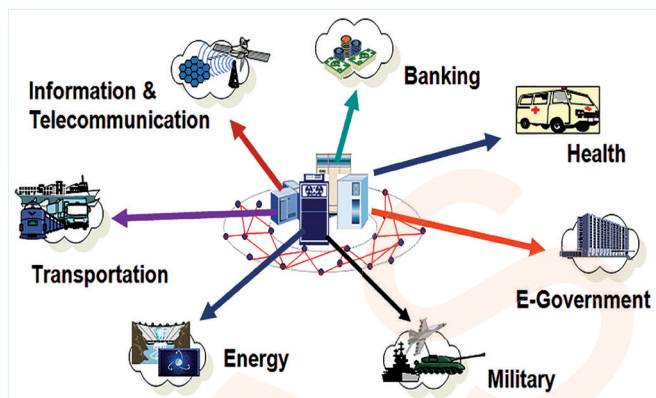
- The Index is a dynamic quantitative and qualitative benchmarking model that provides an objective framework for evaluating food safety across all States/UTs.
- The food safety Index is launched to encourage the States/UTs to improve their performance and establish a proper food safety ecosystem in their jurisdiction.

THE FOOD SAFETY STANDARDS AUTHORITY OF INDIA (FSSAI)

- **Nature:** FSSAI (Food Safety and Standards Authority of India) is a premier government body that underpins standards for the selling, packaging, or storage of food items in India.
- **Mandate:** To ensure utmost food safety, the FSSAI has mandated every food business operator to secure an applicable food license.
- **Statutory Backing:** FSSAI outlines various guidelines and standards in accordance with the Food Safety and Standards Act, 2006.
- **Administered by:** Ministry of Health and Family Welfare.

Key Functions:

- Outlining rules and regulations pertaining to food safety and awareness
- Granting food licenses to eligible food businesses
- Setting out procedures & norms for food testing labs
- Facilitating recommendations to GOI in outlining new policies
- Collecting data related to contaminants in food articles
- Identifying the potential risks in the food sector or supply chain of food
- Conducting an on-site inspection of the premises dealing with food processing or manufacturing
- Leveraging rapid alert system for speedy detection of problems with food items available to masses
- FSSAI has underpinned a stringent operating framework for proprietary food units as most of them operate without any regulations.



Need for CII Classification and Protection:

- IT resources form the backbone of countless critical operations in a country's infrastructure and given their interconnectedness, disruptions can have a cascading effect across sectors.
- An information technology failure at a power grid can lead to prolonged outages crippling other sectors like healthcare, and banking services.
- Recent incidents of cyber attacks on civilian and defence establishments.

National Critical Information Infrastructure Protection Centre (NCIIPC):

- Created in January 2014, the NCIIPC is the nodal agency for taking all measures to protect the nation's critical information infrastructure.
- It is mandated to guard CIIs from "unauthorized access, modification, use, disclosure, disruption, incapacitation or distraction".

Reasons behind the increase in Cyber Attacks:

- Adverse relations with China
- Asymmetric and covert warfare, unlike conventional warfare.
- Increasing dependency on technology

Government steps to ensure Cyber Security:

- National Cyber Security Council as well as Computer Emergency Response Team – India (CERT-In).
- Banning of potentially unsafe apps (Chinese origin)
- Personal Data Protection Bill & National Cyber Security Policy 2013.
- Upcoming Cyber Security Strategy: 3 Phases (Pre attack or Preparatory Phase, During the Attack, Post-Attack Phase).

Challenges with Cyber Security:

- Low digital literacy among the general public
- Vulnerable loopholes in the system
- Lack of robust digital infrastructure

CRITICAL INFORMATION INFRASTRUCTURE (CII)

Recently, the MeitY has declared IT resources of ICICI Bank, HDFC Bank and UPI managing entity NPCI as 'critical information infrastructure (CII)':

About:

- The IT Act of 2000 defines CII as a "computer resource, the incapacitation or destruction of which shall have a debilitating impact on national security, economy, public health or safety".
- To declare any data, database, IT network or communications infrastructure as CII to protect that digital asset.
- Any person who secures access or attempts to secure access to a protected system in violation of the law can be punished with a jail term of up to 10 years.

DATA RECAP

STATE OF ENVIRONMENT REPORT 2022

- India dumps 72% of its sewage waste without any treatment.
- Coastline erosion:** Between 1990 and 2018 over 1/3rd of the coastline has faced some degree of erosion.
 - Rate of coastline erosion in descending order: West Bengal (60.5%), Kerala (46.4%), Tamil Nadu (42.7%), Gujarat (27.06%).
- Ocean Health:** India is generating about 3.5 million tonnes of plastic waste each year. India's per-capita generation of plastic waste has almost doubled in the past five years.
- Forest cover:** Between 2017 and 2021, India's total forest cover has increased by over 0.5%. India has lost 19% of its total tree cover. While 2.8% of forests were cut due to deforestation, wildfires contributed to 18,000 sq. km. loss of forest area every year.

UNICORN STARTUPS

- India is the third-largest ecosystem in the world having more than 9000 startups.
- In 2021, 44 unicorns were established and in 2022 14 more were formed.
- Between 2015 and 2021 India's startup ecosystem showed a nine-time increase in the number of investors.

AIR QUALITY LIFE INDEX (AQLI)

- Life Expectancy:** Air pollution shortens the average life expectancy in India by 5 years. Pollution would cut 7.6 years of life expectancy of 40% of Indians who live in Indo-Gangetic plains. 44% of the world's increase in pollution has come from India since 2013.
 - Delhi, the most polluted capital, will tend to lose 10 years of life expectancy if the particulate emission continues at the current pace.
 - A permanent nationwide reduction of 25%, the midpoint of NCAP's target range, would increase India's average national life expectancy by 1.4 years and 2.6 years for residents of the national capital territory of Delhi.
- PM 2.5:** Since 1998, India's average annual particulate pollution (PM 2.5) has increased by 61.4%, and currently, it stands as the world's second most polluted country after Bangladesh.

EXCEPTIONAL WARMING IN ARCTIC REGION

- Extreme weather:** Exceptional warming of the Arctic could lead to more extreme weather in North America, Europe, and Asia.

- The Arctic warming has been linked to the heatwaves experienced in March, April, May, and June across northwest and central India.
- It has also been linked to the unusual and deadly dust storms that killed around 500 people across north India.
- Increase in temperature:** In the last two decades, the average temperature northeast of the Norwegian archipelago of Svalbard has increased by more than five degrees Celsius.

BIO-ECONOMY AND INDIA

- Globally:** India is among the top 12 destinations for biotechnology globally and the 3rd largest biotechnology destination in the Asia Pacific region. The share of bioeconomy grew to 2.7% in 2020.
 - India ranks 1 in Global Innovation Index in the Central & Southern Asia region.
- Biosimilars:** India is one of the leading producers of biosimilars with one of the most biosimilars approved in the domestic market.
 - It is estimated that the biosimilars industry in India will grow at a CAGR of 22% to become \$ 12 Bn by 2025.

INDIA'S PATENT REGIME

- India is a signatory to The Berne Convention 1886, The Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purpose of Patent Procedure 1977, The Paris Convention for the Protection of Industrial Property 1883, and The Patent Cooperation Treaty (PCT) 1970.

INDIA-VIETNAM RELATIONS

- Bilateral trade stands at US\$ 11.12 billion. India is one of few countries with which Vietnam conducts naval exercises. India has ongoing oil exploration projects with PetroVietnam.
- Vietnam is a key partner in India's Act East Policy, as well as in its wider Indo-Pacific vision.

I2U2 INITIATIVE

- The I2U2 initiative is a new grouping of India, Israel, the USA, and the UAE. 'I2' stands for India and Israel, whereas 'U2' stands for the USA and the UAE.
- It had also been sometimes referred to as the 'West Asian Quad' in the past.

INDIA-BANGLADESH RELATIONS

- **Rail Connectivity:** Maitree Express, Bandhan Express, The Mitali Express.
- **Economic:** Bangladesh is India's biggest trading partner in the South Asian region and India is the second biggest trade partner of Bangladesh.
- **Power Sector:** Bangladesh imports 1,160 Megawatts of power from India to meet its domestic demand.
- **Shared forums:** Indian Ocean Rim Association (IORA), SAARC, BIMSTEC.
- **Major Disputes:** Rohingya refugees issue, Cross-border trafficking, Teesta water sharing, and CAA and NRC.

RIGHT TO ABORTION

- **Medical Termination of Pregnancy act:** The pregnancy can be terminated up to 24 weeks of gestational age after the opinion of two registered medical practitioners under these conditions —
 - ♦ If the woman is either a survivor of sexual assault or rape or incest.
 - ♦ If she is a minor.
 - ♦ If her marital status has changed during the ongoing pregnancy (i.e. either widowhood or divorce).
 - ♦ If she has major physical disabilities or is mentally ill.
 - ♦ On the grounds of fetal malformation incompatible with life or if the child is born, it would be seriously handicapped.
 - ♦ If the woman is in a humanitarian setting or disaster, or emergency situation as declared by the government.
- **Beyond the 24-week** gestational age, termination of pregnancy can be done on the grounds of fetal abnormalities if a four-member Medical Board gives permission to do so.

MIGRATION IN INDIA

- **Migration rate:** The all-India migration rate was 28.9 percent in 2020-21, nearly 26.5 percent in rural areas and 34.9 percent in urban areas.
- **Gender wise:** Females have recorded a higher share of migration rate of 47.9 percent, with 48 percent in rural areas and 47.8 percent in urban areas.
 - ♦ The migration rate for males was seen at 10.7 percent, with 5.9 percent in rural areas and 22.5 percent in urban areas.

SIPRI ON NUCLEAR ARSENAL

- **Globally:** The total number of nuclear weapons has declined slightly between January 2021 and January 2022 around the globe.

- ♦ There are currently nine nuclear-armed states namely the United States, Russia, the United Kingdom, France, China, India, Pakistan, Israel, and the Democratic People's Republic of Korea.
- ♦ Russia and the USA together possess over 90 percent of all nuclear weapons.
- **Increase in Nuclear weapons:** All 9 nuclear-armed states continue to modernize their nuclear arsenals and hence the number of nuclear weapons will probably increase in the next decade.
 - ♦ From January 2021 to January 2022, India's nuclear stockpile increased from 156 to 160.

PLFS REPORT 2020-21

- **The unemployment rate** in India slowed down to 4.2% in 2020-21 from earlier 4.8% in 2019-20.
 - ♦ The unemployment rate (UE) has been reducing consistently since the first annual PLFS was conducted in 2017-18 when UR was 6.1%.
- **Gender wise:** In rural areas, the unemployment rate was higher for males (3.9%) than their female counterparts (2.1%).
 - ♦ In urban areas, the unemployment rate was higher for females (8.6%) than their male counterparts (6.1%).

THE FINANCIALLY STRESSED STATES

- **The average GFD-GDP ratio** (gross fiscal deficit to nominal GDP ratio) of the states remained modest at 2.5% during 2011-12 to 2019-20. This is lower than the Fiscal Responsibility Legislation (FRL) ceiling of 3%.
 - ♦ The fiscal conditions among states in India are showing signs of financial stress.
 - ♦ Punjab, Kerala, West Bengal, Rajasthan, and Bihar have been identified as highly stressed states on fiscal parameters.
- **Reasons:** Gujarat, Punjab, and Chhattisgarh spend more than 10% of their revenue expenditure on subsidies.

GOLD RECYCLING IN INDIA

- India's gold refining capacity increased by 1500 tonnes i.e. 500% to 1800 tonnes from 2013 to 2021.
- India has been ranked fourth, only behind China, Italy, and the U.S. in global gold recycling in 2021.
- In last five years, old gold provided 11% of the country's gold supply.
- The share of overall imports in gold scrap has risen from just 7% in 2013 to around 22% in 2021.



Test Yourself

Multiple Choice Questions

1. Consider the following countries:

- | | |
|------------|-------------|
| 1. Belarus | 2. Ukraine |
| 3. Romania | 4. Bulgaria |
| 5. Italy | |

Which of the above countries lies enroute Druzhba Pipeline?

- | | |
|---------------------|----------------------|
| (a) 1 and 2 only | (b) 2, 3 and 4 only |
| (c) 1, 2 and 5 only | (d) 1, 2, 3, 4 and 5 |

2. With reference to the India-Israel Defence relations, consider the following statements:

1. India is the largest market of military equipments from Israel.
2. India has inducted the S-400 Missile Defence System in its military from Israel.

Which of the statements given above is/are correct?

- | | |
|------------------|---------------------|
| (a) 1 only | (b) 2 only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

3. With reference to the Gig Economy, consider the following statements :

1. Mushrooming of technology enabled platforms has given a momentum to the gig economy.
2. It is characterised by flexible jobs of short term nature.

Which of the statements given above is/are not correct?

- | | |
|------------------|---------------------|
| (a) 1 only | (b) 2 only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

4. With reference to the D2M Technology, consider the following statements:

1. This technology will allow the broadcast of video and other forms of multimedia content directly to mobile phones.
2. The technology promises to improve consumption of broadband and utilization of spectrum.

Which of the statements given above is/are correct?

- | | |
|------------------|---------------------|
| (a) 1 only | (b) 2 only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

5. With reference to the largest plant in the world, consider the following statements:

1. The plant has been discovered in the World Heritage Area of Shark Bay.
2. The plant is a polyploid.
3. The plant is estimated to be 4500 years old.

Which of the statements given above is/are correct?

- | | |
|------------------|------------------|
| (a) 1 and 2 only | (b) 2 and 3 only |
| (c) 1 and 3 only | (d) 1, 2 and 3 |

6. With reference to the GeM Portal, consider the following statements:

1. It was launched by the Ministry of Finance in 2016.
2. The portal is maintained and managed by NITI Aayog.

Which of the statements given above is/are correct?

- | | |
|------------------|---------------------|
| (a) 1 only | (b) 2 only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

7. With reference to the Eco-Sensitive Zone (ESZ), consider the following statements :

1. It is notified by the Ministry of Environment, Forests and Climate Change under the Wildlife Protection Act, 1972.
2. It is a transition zone from areas of high protection to areas involving lesser protection.

Which of the statements given above is/are not correct?

- | | |
|------------------|---------------------|
| (a) 1 only | (b) 2 only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

8. With reference to the Air Quality Life Index (AQLI), consider the following statements :

1. It is released by the World Health organisation.
2. It helps to measure the gain in life expectancy the country can experience if their community met World Health Organization guidelines.

Which of the statements given above is/are correct?

- | | |
|------------------|---------------------|
| (a) 1 only | (b) 2 only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

9. With reference to the LiFE Movement, consider the following statements :

1. It is a global initiative with an aim to solve the challenges faced by visually impaired people.
2. It was proposed by the World Health Organisation.

Which of the statements given above is/are correct?

- | | |
|------------------|---------------------|
| (a) 1 only | (b) 2 only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

10. Consider the following statements regarding the Mekong-Ganga Cooperation (MGC):

1. MGC is an initiative of six countries.
2. It was launched in the year 2000.
3. The 1st MGC Ministerial Meeting was held in Vientiane, Lao PDR

Which of the statement given above is/are not correct?

- | |
|-------------------------------|
| (a) Only one of the statement |
| (b) Two of the statements |
| (c) All of the statements |
| (d) None of the statements |

11. Which of the following investments/structures have been made by India in Afghanistan?

1. Zaranj Delaram highway
2. Afghan Parliament
3. Chabahar Port

Select the correct answer from the options given below:

- (a) 1 and 3 only (b) 2 and 3 only
(c) 1 and 2 only (d) 1, 2 and 3

12. With reference to the Bio-Economy, consider the following statements :

1. India has the third largest bio-economy in the world after U.S.A and China.
2. The share of bioeconomy in India's National Income stood at 6.5 percent in 2021.

Which of the statements given above is/are not correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

13. With reference to the rice production and exports from India, consider the following statements :

1. China has emerged as the top buyer of both normal and broken rice from India in 2021-22.
2. India is the largest producer and exporter of rice in the world.

Which of the statements given above is/are not correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

14. Consider the following statements:

1. The United States, United Arab Emirates, and Bahrain signed the historic Abraham Accords in 2021.
2. Egypt, Sudan and Morocco have also joined the Abraham Accords.

Which of the statement/s given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

15. With reference to Analytical Support and Sanctions Monitoring Team of United Nations (UN), consider the following statements:

1. It assists the United Nations Security Council (UNSC) Sanctions Committee .
2. India is currently the chair of the UNSC Sanctions Committee.

Which of the statement(s) given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

16. Consider the following:

1. Lead
2. Iron
3. Nickel
4. Cadmium
5. Arsenic
6. Chromium
7. Copper

Which of the heavy metals given above are responsible for river pollution in India?

- (a) 1, 4, 5 and 6 only (b) 2, 3 and 7 only
(c) 1, 3, 6 and 7 only (d) 1, 2, 3, 4, 5, 6 and 7

17. Which of the following state(s) does not border Bangladesh?

1. Assam
2. Mizoram
3. West Bengal
4. Tripura

5. Meghalaya
6. Sikkim

Select the correct answer using the codes given below:

- (a) 6 only (b) 1 and 2 only
(c) 1, 2 and 5 only (d) 1, 2 and 6 only

18. In the context of the Indian economy, which of the following statements best describes the term 'Unicorns'?

- (a) Privately held startups with venture-capital investment and valuation of \$ 1 billion based on future growth potential
- (b) Publicly held startups with significant participation in the Initial Public Offerings (IPO)
- (c) A private limited company with a valuation of more than USD10 billion
- (d) A public limited company averse to domestic and global economic headwinds

19. Consider the following Geographical entity of India:

1. Mangrove forests of the Sundarbans
2. Foothills of the Himalayas along Ganga valley
3. Marshlands of Brahmaputra in Assam
4. Western Ghats

In which of the areas given above are fishing cats likely to be found in their natural habitat?

- (a) 1 only (b) 4 only
(c) 2 and 3 only (d) 1, 2, 3 and 4

20. With reference to NTPC's Biodiversity Policy 2022, consider the following:

1. NTPC became the first PSU to issue a Biodiversity Policy in 2022
2. This policy aligns with the United Nations Convention on Biological Diversity (CBD) and National Biodiversity Action Plan (NBAP) 2008 objectives

Which of the statement(s) given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

21. Which of the following are likely favorable factors for wider adoption of liquid nano urea in place of conventional urea?

1. Direct absorption by plants
2. Better nitrogen utilization
3. Liquid nano urea is highly subsidized.

Select the correct answer using the codes given below:

- (a) 1 and 2 only (b) 1 and 3 only
(c) 2 and 3 only (d) 1, 2 and 3

22. Consider the following statements regarding the nuclear arsenal:

1. Russia and the USA together possess over 90 percent of all the nuclear weapons
2. There was a decrease in the nuclear warheads in the year 2021

Which of the statement/s given above is/ are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

23. With reference to the mandate of the Chief of Defence Staff (CDS), consider the following statements:
1. First CDS acted as a Secretary of the Department of Military Affairs
 2. It has recommended the formation of three integrated theatre commands
- Which of the statement(s) given above is/are correct?
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2
24. With reference to Organisation of Islamic Cooperation (OIC), consider the following statements:
1. OIC is the second-largest organisation after UN, in terms of membership.
 2. India has been granted the observer status to the OIC.
- Which of the statement/s given above is/are correct?
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2
25. The Air Sports Federation of India (ASFI), an autonomous body, works under the aegis of which of the following ministries?
- (a) Ministry of Youth Affairs and Sports
 - (b) Ministry of Communications
 - (c) Ministry of Civil Aviation
 - (d) Ministry of Culture
26. With reference to Fast Radio Bursts (FRB), consider the following statements:
1. All FRB discovered till now exhibit different characteristics
 2. Magnetars are the probable sources of FRB
 3. China's Five-hundred-meter Aperture Spherical radio Telescope (FAST) discovered the latest FRB in 2019
- With the presence of scientific developments, which of the statement(s) given above is/are correct?
- (a) 1 only
 - (b) 3 only
 - (c) 1 and 3 only
 - (d) 2 and 3 only
27. Which of the following agreements are covered under the ambit of World Trade Agreement?
1. Trade-Related Aspects of Intellectual Property Rights (TRIPS)
 2. General Agreement on Trade in Services (GATS)
 3. Trade-Related Investment Measures (TRIMs)
- Select the correct answer using the codes given below:
- (a) 1 and 3 only
 - (b) 2 and 3 only
 - (c) 1 and 2 only
 - (d) 1, 2 and 3
28. With reference to IPR-related international conventions, consider the following:
1. Beijing Treaty
 2. Berne Convention
 3. Paris Convention
 4. Patent Law Treaty
 5. Rome Convention
 6. Budapest Treaty
- India is not a signatory to which of the conventions given above:
- (a) 1 and 2 only
 - (b) 1 and 5 only
 - (c) 3 and 6 only
 - (d) 1, 3, 5 and 6 only
29. With reference to the International Liquid-Mirror Telescope, consider the following statements:
1. The telescope has been developed to serve India in its military purposes.
 2. It makes use of a thin film of liquid mercury to collect and focus light.
 3. The telescope is steered to point towards the celestial source of interest in the sky for observations.
- How many statements given above is/are correct?
- (a) Only one statement
 - (b) Only two statements
 - (c) All three statements
 - (d) None of the them
30. Which of the following are likely to have bearing on the Green Jobs in India?
1. Shift to electric vehicles
 2. National Skill Development Mission
 3. National Policy on Biofuels
 4. Green Hydrogen
- Select the correct answer from the code given below:
- (a) 1 and 2 only
 - (b) 2 and 3 only
 - (c) 3 and 4 only
 - (d) 1, 2, 3 and 4
31. With reference to the Global Status Report, consider the following statements :
1. It is the flagship publication of the United Nations Environment Programme (UNEP).
 2. It reported that India ranked second in renewable energy installations after China in 2021.
- Which of the statements given above is/are not correct?
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2
32. With reference to the Chelonoidis Phantasticus tortoise, consider the following statements :
1. It is a giant tortoise which belongs to the Galápagos species.
 2. It is native to the Mediterranean region.
- Which of the statements given above is/are correct?
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2
33. Consider the following:
1. Macquarie plate
 2. Capricorn plate
 3. Juan de Fuca plate
 4. Aegean plate
 5. Iranian plate
- Which of the tectonic microplates given above are discovered recently?
- (a) 1 and 2 only
 - (b) 2 and 3 only
 - (c) 3 and 4 only
 - (d) None of the above
34. Consider the following statements regarding the United Nations Security Council (UNSC)-
1. Non-permanent members of the UNSC are chosen for a 3-year term.
 2. India has been a non-permanent member of the UNSC a total of eight times.
- Which of the statement/s given above is/are correct?
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2

35. Consider the following statements regarding the BRICS organization:
1. The 1st BRIC summit was held in Yekaterinburg.
 2. South Africa was accepted as a full member of BRICS in 2008.
- Which of the statement/s given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
36. Consider the following statements:
1. The Seti Gandaki River is a left tributary of the Trishuli River.
 2. Ghaghara River rises as The Karnali river in Nepal.
- Which of the statement/s given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
37. With reference to the evolution of Web, consider the following statements :
1. Under Web 2, the users are able to harness the information only in a passive manner.
 2. Web 3 offers decentralisation of personal information to its users.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
38. Which of the following are associated with Loktak lake?
1. Brow-antlered deer
 2. Meitei fishermen
 3. Phumdi vegetation
 4. Nambul river
 5. Keibul Lamjao National park
- Select the correct answer from the codes given below:
- (a) 1 and 3 only (b) 3 and 5 only
(c) 1, 2 and 3 only (d) 1, 2, 3, 4 and 5
39. With reference to the Typhoid Fever, consider the following statements:
1. It is a disease caused by the virus.
 2. Africa accounts for 70 percent of the global typhoid burden.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
40. With reference to the India-Australia Defence relations, consider the following statements :
1. Both the countries share a Comprehensive Strategic Partnership agreement.
 2. India has inducted the S-400 Missile Defence System in its military from Australia.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
41. With reference to the BRICS Business Forum, consider the following statements :
1. It was established at the fifth BRICS Summit in Durban, South Africa in 2013.
 2. This year's Forum was held in Sao Paulo, Brazil.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
42. With reference to the Goods and Services Tax (GST), which of the following statements is not correct?
- (a) It is a multistage, destination-based consumption tax
 - (b) It exempts certain goods from its ambit but any service is not exempted
 - (c) GST compensation cess timeline has been extended till March 2026
 - (d) GST Council is a constitutional body under Article 279A
43. Consider the following:
1. Triple Talaq
 2. Talaq-e-Hasan
 3. Talaq-e-Ahsan
 4. Khula
- Which of the above modes of Islamic divorce are valid in India?
- (a) 2 and 3 only (b) 2 and 4 only
(c) 3 and 4 only (d) 2, 3 and 4 only
44. With reference to Astra Mk-1, consider the following statements
1. It is a beyond visual range (BVR), surface-to-air missile.
 2. The missile can travel at speeds more than four times that of sound.
- Which of the given above statements is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
45. Which of the following countries tops globally in gold recycling capacity in 2021?
- (a) India (b) U.S.A
(c) China (d) Italy
46. With reference to the Anti-Defection Law, consider the following statements :
1. It was added to the Constitution in 1985 by the 61st Constitutional Amendment Act.
 2. The law applies to the Presiding Officer of the House if after being elected to the chair, he leaves the primary membership of the political party to which he belonged.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
47. With reference to antimicrobial resistance consider the following statements:
1. Antimicrobial resistance is a natural phenomenon.
 2. It makes infections harder to treat and increases the risk of disease spread, severe illness and death.
 3. They cannot spread from person to person or between people and animals.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

48. With reference to the Ramsay Hunt Syndrome consider the following statements:
1. It is a neurological disease that affects facial movements.
 2. The disease is chronic.
 3. The symptoms include painful, red rash and blisters in and around the ear and facial paralysis on the same side.
 4. The virus that causes the syndrome is the same virus that causes chickenpox and shingles.
- Which of the statements given above is/are correct?
- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 1, 3 and 4 only (d) 1, 2 and 4 only
49. With reference to the Bonn Climate Change Conference 2022, which of the following statements is incorrect?
- (a) It was a precursor to the Conference of Parties 27 (COP 27) meet
- (b) It discussed the fulfillment of objectives given by the Paris Agreement
- (c) It was a platform for developing countries to fulfill the goals set by the earlier Glasgow pact
- (d) Group of 77 and Like Minded Developing Countries (LMDC) held different stands than the U.S. and E.U.
50. With reference to the 5G technology, consider the following statements:
1. 5G will provide faster and more reliable communication with ultra-low latency.
 2. The low band spectrum of 5G is optimal for the specialized needs of the industry.
 3. The 5G network can also function as multiple separate networks at the same time by using the network slicing technology.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3
51. Consider the following sentence:
1. 'Race to Zero' campaign is the initiative of the UN that promotes the goal of zero plastic waste.
 2. Only the members of UNEP are party to it.
- Select the correct statement from the following options:
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) None of them
52. Consider the following statements about recently discovered species of Gecko:
1. It was found in the state of Maharashtra
 2. IUCN recognized it as Vulnerable
- Select the incorrect option from the below:
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
53. Consider the following statements about the corals.
1. Corals reefs are not found in regions of low tides and fewer sediments,
 2. Corals, in India, are found all across the coastline.
- Select the incorrect option from the below:
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
54. Consider the following statements regarding The Chip Chap River
1. The Chip Chap River is a tributary of the Shyok River
 2. It flows from the disputed Aksai Chin region.
- Which of the above statement/s is/are correct?
- (a) 1 only (b) 2 only
(c) both 1 and 2 (d) Neither 1 nor 2
55. With reference to the rivers in Karnataka, consider the following:
1. Bedti
 2. Varada
 3. Tungabhadra
 4. Sharavathi
 5. Kabini
 6. Amravati
- Which of the rivers given above are east-flowing rivers?
- (a) 1, 2, and 3 only (b) 2, 3, and 4 only
(c) 3, 4, and 5 only (d) 2, 3, 5, and 6 only
56. Consider the following statements regarding the medical termination of pregnancy in India-
1. Under the Medical Termination of Pregnancy (MTP) Act, pregnancy can be terminated up to 22 weeks of gestational age after taking the opinion of two registered medical practitioners
 2. Beyond the 24-week gestational age, termination of pregnancy can be done on the grounds of fetal abnormalities if a six-member Medical Board gives permission to do so.
- Which of the above statement/s is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
57. In the context of medieval history, consider the following statements:
1. Banda Singh Bahadur was chosen as a deputy authority by Guru Gobind Singh to fight the oppressive Mughal rule
 2. Banda Singh Bahadur abolished the Zamindari system and introduced the Nanak Shahi coins
- Select the correct answer from the code given below:
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
58. With reference to the Nasha Mukta Bharat Abhiyan (NMBA), consider the following statements:
1. It is being implemented by the Ministry of Youth Affairs and Sports all over India.
 2. The International Day against Drug Abuse and Illicit Trafficking is marked on 26 June every year.
- Select the correct answer from the codes given below:
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
59. Consider the following statements:
1. The National Sample Survey Office (NSSO) was merged with the Central Statistical Office (CSO) to create the National Statistical Office (NSO).

2. The Periodic Labor Force Survey (PLFS) report is released annually by NSO
3. The NSO is headed by the Ministry of Statistics and Programme Implementation (MoSPI)

Which of the statements given above are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

60. With reference to Intergovernmental Panel on Climate Change(IPCC), consider the following statements:

1. It was established by the World Meteorological Organisation and United Nations General Assembly in 1988.
2. The primary objective of IPCC is to create methodological studies, special reports, and assessment reports.

Which of the given above statements/s is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 Only (d) Neither 1 nor 2

61. With reference to the 'Open Network for Digital Commerce (ONDC)', consider the following statements:

1. It is launched by the Indian government to replace non-Indian e-commerce platforms like Amazon.
2. It has been launched as a pilot project in all the metro cities of India

Which of the statement(s) given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

62. 'Recommendation on the Ethics of Artificial Intelligence', as seen in the news recently, is given by which of the following international organizations?

- (a) UNICEF (b) IMF
(c) UNESCO (d) WHO

63. With reference to Dragonflies, consider the following statements:

1. These species are found on all continents and migrate over large distances.
2. These species act as bioindicators reflecting upon the health of an ecosystem
3. These species are important for humans as they predate mosquitoes.

Which of the statements given above are correct?

- (a) 1 and 2 only (b) 1 and 3 only
(c) 2 and 3 only (d) 1, 2 and 3

64. Consider the following statements:

1. Ramsar convention has been signed by all the members of United Nations.
2. At present, there are three Montreux Record Sites in India.

Which of the statement/s given above are correct?

- (a) 1 only (b) 2 only
(c) 1 and 2 both (d) Neither 1 nor 2.

65. Consider the following statements:

1. Bats are the only mammals with the ability to fly.
2. Bats act as the carriers of zoonotic diseases.
3. Bats are involved in seed dispersal and pollination activity.

Which of the statements given above are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

66. With reference to the Agnipath Scheme, consider the following statements:

1. It is a new Human Resource Policy for the recruitment of officers under the Army, Navy, and Air Force.
2. After four years, half of the Agniveers will be recruited back into their respective services.

Which of the statement/s given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

67. Which among the following is/are the impacts of arctic warming on India's weather?

1. Heatwaves experienced in the northern region before the onset of the summer season.
2. Unusual dust storms in the coastal regions all across peninsular India.
3. Increase in events of lightning strikes and frequency of sea storms in the coastal regions.

Select the correct answer using the codes given below:

- (a) 1 only (b) 1 and 3 only
(c) 3 only (d) 1, 2 and 3

68. Global warming has presented another issue called climate change. In this context consider the following statements:

1. Sea level rise is caused by the expansion of warmer seas and melting ice sheets and glaciers.
2. Climate change can influence the transport and distribution of ecotoxins impacting the well-being of both humans and ecosystems.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

69. Which of the following are the part of the Pacific Island Countries?

1. Cook Islands
2. Fiji
3. Republic of Marshall Islands
4. Papua New Guinea
5. Solomon Islands
6. Tonga

Select the correct option

- (a) 1, 2 and 3 only (b) 4, 5 and 6 only
(c) 1, 2, 4 and 5 only (d) 1, 2, 3, 4, 5 and 6

70. The 1972 United Nations Stockholm conference recently completed its 50 years. Consider the following statements regarding this conference:

1. It has marked the beginning of a global level dialogue between industrialized and developing countries.
2. It gave birth to United Nations Framework Convention on Climate Change (UNFCCC).
3. Indira Gandhi was the only head of government other than that of the host country Sweden to attend and speak at the meeting.

Which of the statements given above is/are correct?

- (a) 1 only (b) 1 and 3 only
(c) 2 only (d) None of the above

71. With reference to the Eco Sensitive Zone (ESZ), consider the following statements:

1. These are areas around Protected Areas, National Park and Wildlife sanctuaries.
2. Activities like commercial mining and tourism are permitted in a regulated way in the zone.

Which of the above given statements is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

72. With reference to Electric Vertical Take off and Landing (eVTOL), consider the following statements:

1. It is beneficial for Short Range Urban Transportation.
2. They can take off and land anywhere.
3. They have zero carbon print and are noise free, unlike Helicopters.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

73. State of Environment Report is published by which of the following institution?

- (a) United Nations Environment Programme (UNEP)
(b) Global Environment Facility (GEF)
(c) Global Footprint Network
(d) Centre for Science and Environment (CSE)

74. As recent notifications of the Ministry of Defence, which of the following are eligible for appointment of the Chief of Defence Staff (CDS)?

1. Lieutenant General 2. Vice Admiral
3. Air Chief Marshal

Select the correct answer using the codes given below

- (a) 1 and 2 Only (b) 2 and 3 Only
(c) 1 and 3 Only (d) 1, 2 and 3

75. Which of the following are covered under National Air Sports Policy 2022?

1. Aerobatics 2. Ballooning
3. Drones
4. Gliding and powered gliding

Select the correct answer using the code given below:

- (a) 1, 2 and 3 only (b) 1, 2 and 4 only
(c) 1, 3 and 4 only (d) 1, 2, 3 and 4 only

76. India is a signatory to which of the following Intellectual Property Rights (IPR) related conventions?

1. The Berne Convention which governs copyright,
2. The Budapest Treaty,
3. The Paris Convention for the Protection of Industrial Property

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

77. With reference to Greater One-Horned Rhino, consider the following statements

1. The species is restricted to small habitats in Indo-Nepal terai and northern West Bengal and Assam.
2. It is listed under the Schedule I of Wildlife Protection Act, 1972
3. It is listed as Endangered in the IUCN Red list.

Which of the given above statements is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

78. With reference to Environment Performance Index (EPI), consider the following statements:

1. It is a biennial index started by the United Nations Environment Programme (UNEP).
2. EPI 2022 ranked India at the bottom position among 180 countries.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

79. Consider the following statements regarding collegium system:

1. The provisions related to the collegium system are mentioned in Art. 217 of the constitution.
2. The Supreme Court collegium is headed by the Chief Justice of India.
3. Government can not seek clarification on the collegium's choice of selected judge.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 only
(c) 2 and 3 only (d) 3 only

80. With reference to Web 3.0, consider the following statements:

1. Web 3.0 technology enables people to control their own data.
2. In the Web 3.0 world, there can be blockchain based social networks.
3. Web 3.0 is operated by users collectively rather than a corporation.

Which of the statements given above are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

- 81.** With reference to Agnipath Recruitment Scheme, consider the following statements:
- Under the scheme, soldiers (Agniveers) will be recruited annually at both the level of commissioned and non-commissioned levels.
 - Recruitment will be carried out on an 'All India All Class' basis with the eligibility age ranging from 17.5 to 25 years.
 - Agniveer can not apply for regular employment in the armed forces after completing their fouryear service.
 - There shall be entitlement to gratuity and pensionary benefits for Agniveer.
- Which of the statements given above is/are not correct?
- (a) 1 only (b) 1, 2 and 3 only
(c) 1,3 and 4 only (d) 1,2,3 and 4
- 82.** Recently seen in news, Migration in India Report is released by:
- (a) NITI Aayog
(b) Ministry of statistics and programme Implementation
(c) Registrar General and Census Commissioner of India
(d) Ministry of Home Affairs
- 83.** Which of the following countries are members of the I2U2 initiative?
- Israel
 - Japan
 - India
 - China
- Select the correct answer using the code given below:
- (a) 1 and 3 only (b) 2 and 4 only
(c) 1, 3 and 4 only (d) 2, 3 and 4 only
- 84.** Which of the following is/are provisions of the Medical Termination of Pregnancy (Amendment) Act, 2021?
- It decreases the gestation period of women seeking abortion up from 24 weeks to 20 weeks.
 - It allows unmarried women to terminate a pregnancy in case of failure of the contraceptive method or device.
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 85.** Consider the following statements regarding the World Trade Organization (WTO):
- The Ministerial Conference is the WTO's decision-making body which usually meets every two years.
 - All powers of the WTO are vested in the Board of Governors, who takes all its decisions by consensus.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 86.** Which of the following statements regarding Anti-defection law are correct?
- (a) Anti- defection law is not practiced anywhere else in the world except in India.
(b) A nominated legislator can join a political party anytime without attracting the defection.
(c) The decision of a presiding officer regarding defection can not be challenged in the court.
(d) All are incorrect.
- 87.** With reference to Keibul Lamjao National Park (KLNP), consider the following statements:
- It is located in the south western part of the Wular lake.
 - It is the only floating park of the world.
- Which of the statements given above is/are correct?
- (a) 1 Only (b) 2 Only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 88.** With reference to Gold refining and recycling, consider the following statements:
- India has emerged as the largest recycler in the world.
 - The World Gold Council is an association of the world's leading gold mining companies.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 89.** With reference to Open Network for Digital Commerce (ONDC), consider the following statements:
- It is an initiative of the Ministry of Finance.
 - It aims to promote open networks for all aspects of the exchange of goods and services digitally.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 90.** Which of the following activities are not permitted in Eco Sensitive Zones (ESZ):
- Agricultural or horticultural practices.
 - Tourism
 - Commercial mining
 - Establishment of hotels and resorts
- Select the correct answer using the code given below:
- (a) 1 and 2 only (b) 3 and 4 only
(c) 2, 3 and 4 only (d) 1, 2, 3 and 4
- 91.** Medical Termination of Pregnancy Act 2021 is criticised for which of the following reasons?
- There is no clause for the anonymity of women as she has to register herself in the state medical board.
 - Unmarried women cannot access abortions without the consent of a guardian.
 - There is no clarity on the access to abortions for transgender persons.
- Select the correct answer using the code given below:
- (a) 1 and 3 only (b) 2 only
(c) 2 and 3 only (d) 3 only
- 92.** Consider the following statements regarding a 'Gig economy':
- The gig workers usually receive payment on a task-by-task basis.
 - The gig work often involves connecting with clients or customers through an online platform.
 - The gig worker is a full time employee of the company with fixed work hours.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 1 and 2 only
(c) 3 only (d) 1, 2 and 3

93. With reference to Goods and Services Tax Council consider the following statements:
1. It is a joint forum of the Centre and the states which was set up by the President as per Article 286 of the Indian Constitution.
 2. Governor of Reserve Bank of India is chairperson of the council.
- Which of the statements given above is/are correct?
- (a) 1 Only (b) 2 Only
(c) Both 1 and 2 (d) Neither 1 nor 2
94. With reference to GST Council, consider the following statements
1. It is considered as a federal body where both the centre and the states get due representation.
 2. Both the Union and the State have equal voting weightage in decision making.
 3. Council's decisions are recommendatory in nature.
- Which of the given above statements is/are correct?
- (a) 1 and 3 only (b) 2 only
(c) 3 only (d) 1, 2 and 3
95. Which among the following are minor tectonic plates of Earth?
1. Pacific plate
 2. Nazca plate
 3. Caroline plate
 4. Antarctica plate
- Select the correct answer using the codes given below:
- (a) 1 and 4 only (b) 2 and 3 only
(c) 1 and 3 only (d) 2 and 4 only
96. With reference to Renewable Energy Policy Network for the 21st Century (REN21), consider the following statements:
1. REN21 is a global intergovernmental renewable energy consortium.
 2. It provides updated and peer-reviewed facts, figures, and analyses of global developments in technology, policies, and markets.
- Which of the given above statement/s is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
97. With reference to IT rules 2021, which of the following statements is not correct?
- (a) The rules provided for content regulation by online publishers of news and current affairs content, and curated audio-visual content.
 - (b) It aims to make social media and internet companies, having more than five million users, more accountable for the content on their platforms.
 - (c) It has been formulated independent of the Information Technology Act 2000.
 - (d) Under the provisions of the rule all significant social media intermediaries (SSMIs) are mandated as part of their due diligence to appoint India-based resident grievance officers.
98. With reference to Graded Response Action Plan (GRAP), consider the following statements:
1. It was notified in 2019, for prevention, control and abatement of air pollution in Delhi and NCR.
 2. GRAP identifies graded measures and implementing agencies for response to four AQI categories.
- Which of the given above statement/s is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
99. With reference to Sant Tukaram, consider the following statements:
1. Tukaram embraced both male and female disciples and devotees.
 2. He was a devotee of Lord Vittala, an incarnation of Lord Krishna.
- Which of the given above statement/s is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
100. With reference to Sant Kabir, consider the following statements:
1. Kabir only targeted the rituals and practices of both Hinduism and Islam, but never dismissed the sacred authority of their religious books.
 2. He asked his followers to follow the Sahaja path as well as the teachings of Quran and Vedas.
- Which of the given above statement/s is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

ANSWER KEY

1. (a)	2. (a)	3. (d)	4. (c)	5. (d)	6. (d)	7. (a)	8. (b)	9. (d)
10. (d)	11. (c)	12. (c)	13. (b)	14. (d)	15. (c)	16. (d)	17. (a)	18. (a)
19. (d)	20. (b)	21. (a)	22. (c)	23. (a)	24. (a)	25. (c)	26. (d)	27. (d)
28. (b)	29. (a)	30. (d)	31. (c)	32. (a)	33. (a)	34. (b)	35. (a)	36. (a)
37. (b)	38. (d)	39. (d)	40. (a)	41. (d)	42. (b)	43. (d)	44. (b)	45. (c)
46. (d)	47. (a)	48. (c)	49. (c)	50. (c)	51. (d)	52. (c)	53. (a)	54. (c)
55. (d)	56. (d)	57. (c)	58. (b)	59. (d)	60. (b)	61. (d)	62. (c)	63. (c)
64. (d)	65. (d)	66. (d)	67. (a)	68. (d)	69. (d)	70. (b)	71. (a)	72. (d)
73. (d)	74. (d)	75. (d)	76. (d)	77. (a)	78. (b)	79. (b)	80. (d)	81. (d)
82. (b)	83. (a)	84. (b)	85. (a)	86. (d)	87. (b)	88. (b)	89. (b)	90. (c)
91. (d)	92. (b)	93. (d)	94. (a)	95. (b)	96. (b)	97. (c)	98. (b)	99. (c)
100. (d)								



Test Yourself

Subjective Questions

GS PAPER-I

1. How a new map of Earth's tectonic plates can help in better understanding of the distribution of earthquakes and volcanoes, mineral distribution, and evolution of the earth?
2. What do you understand about the phenomenon of arctic warming? Highlight its effects on a global scale providing suitable examples. Also, discuss its impact on India.

GS PAPER-II

3. Agnipath Scheme is a 'transformational' initiative both for the armed forces as well as for the civil society. Comment.
4. The objectives behind bringing the Anti-Defection Law were to impart political stability and political defection. Analyse its efficacy in attaining the stated goals. What measures could be taken to make the law more robust in materialising its objectives?
5. India and Vietnam are thought to have a special relationship built upon a shared history and common interests. Discuss whether there is sufficient strategic content to the relationship and how Vietnam has been an important pillar of India's Act East policy.
6. India has built a significant presence as a development partner in Afghanistan, building both goodwill among the Afghan people as well as gaining important grassroots knowledge. Both factors can make India competitive, regardless of who is in power in Kabul. Discuss
7. India's move to join a new bloc reflects its keenness to take advantage of the Abraham Accords to deepen engagement with Israel without risking its ties with the UAE and the other Arab states. Discuss
8. In the wake of Western hegemony and sanctions which have created global supply shocks and commodity price spiral, analyse how platforms like BRICS Business Forum can aid developing economies in traversing the path of growth and development. Highlight the major takeaways of BRICS Business Forum 2022.

GS PAPER-III

9. As per the Air Quality Life Index Analysis, air pollution shortens the average life expectancy by 5 years in India. Discuss how air pollution has been exacerbated in the

past couple of decades. What steps has the government taken to control air pollution? Recommend measures to effectively tackle air pollution in India.

10. Indian bio-economy has been effective in harnessing global tailwinds and is poised to grow strongly in the coming times. Analyse the growth trajectory of the bio-economy of India in recent years. What are the reasons for the growth of the Bio-Economy in India?
11. Give an account of the current status of unicorn startups in the Indian economy. Also, highlight the steps taken to nurture and promote the startup ecosystem in India.
12. What are the slew of reforms, WTO needs to undertake to stay relevant in today's changing geopolitical paradigm? Also, mention the salient takeaways of the 12th Ministerial Conference of the WTO.
13. Highlight the benefits and challenges associated with the Goods and Services (GST) regime in the last 5 years in India. How can the GST regime be made buoyant and user-friendly?
14. The loss of efficacy of antibiotics and other antimicrobials worldwide can be understood as a "tragedy of the commons." Explain.
15. What are the most contentious issues surrounding nuclear energy? What are the steps needed to tackle these issues?
16. What are the main irritants between the developed and the developing countries in climate change agreements? How can they be resolved consensually?
17. What is 'Net zero transition' and why is it the need of the hour? Also, discuss the ways for India to achieve carbon neutrality.
18. What are the possible causes of Coral bleaching? Write in brief about the conservation steps taken by India and the world for the conservation of Corals.

GS PAPER-IV

19. Discuss various ethical dilemmas associated with Artificial Intelligence?
20. What is the Ethics of Protest? Discuss the various issues related to law and ethics in the context of the right to protest.