

CURRENT AFFAIRS

OCTOBER - 2021

INDEX

1. 1. ECONOMY SNIPPETS

1. Export Credit Guarantee Corporation (ECGC)	07
2. The Many Benefits of a strong GI Ecosystem	08
3. Green Term Loan	10
4. India needs a Carbon Policy for Agriculture	11
5. Palk Bay Scheme	13
6. Rail link between Nepal and India	14
7. RBI's Monetary Policy Statement	15
8. Customs Duty Waiver on Edible Oil Imports	16
9. Powering the Energy Sector	17
10.A Global Player in Solar Power	19
11.A clean Energy Transition Plan for India	21
12.India's First Banni Buffalo IVF Calf Born	22
13.Prakritik Kheti Khushhal Yojana (PK3Y)	24
14.Genetically Modified (GM)	25

2. ENVIRONMENT

1. NDRF Deployed in Disaster hit areas of Kerala	27
2. Southwest Monsoon Withdraws from India	28

2. 1. ENVIRONMENT SNIPPETS

1. Cyclone Gulab	30
2. Green Energy Push Slowed Down	31
3. Hara Bhara	32
4. Indian Peafowl	33
5. National Tiger Conservation Authority (NTCA)	34
6. Detoxing Pilot Project	34
7. Heatwaves in India	35
8. Cicada species	36
9. COP26 Climate Conference and Why it is important	37
10.Allium Negianum	39
11.Double-Dip	40

12.Georissa Mawsmaiensis	40
13.Debrigarh Wildlife Sanctuary	41
14.Gene Editing Technique	42
15.'Net-Zero' carbon emitter	43
16.Kaziranga National Park	44
17.Why India shouldn't sign on to net zero	45

3. POLITY & GOVERNANCE

1. Marathon Month for the Supreme Court Collegium	47
2. More time to Renew FCRA Registration	49
3. CJI for Forming Special Panels to Probe Atrocities by Police	52
4. Mamata wins Bhabanipur seat with a record margin	54
5. No info on 2018 Plan to Collect OBC Data	55
6. Government moots Easier Clearance for Forest Land Use	57
7. SC Adjourns Hearing of West Bengal Suit	60
8. CJ tells Forest Department not to go for the Tiger kill	61
9. Health Benefit Package under Ayushman Bharat revised	64
10.Moody's Upgrades India Outlook to stable from negative	66
11.Telangana Withdraws plea in SC on sharing of Krishna water	69
12.Godavari Cauvery Interlinking Project	70
13.SC Questions ₹ 8 Lakh Income limit for EWS Quota	72
14.NGT needn't wait for 'Godot' to save environment: Supreme Court	74
15.Over 2 lakh RTI pleas pending	75
16.Anticipatory bail can be set Aside, says SC	78
17.Gati Shakti will boost Infrastructure Projects, says PM	81
18.Kunming Declaration on Biodiversity	83
19.India will ban single-use Plastics Next Year	85
20.Tamil Nadu Urban Employment Scheme	87
21.SC questions ₹ 8 Lakh income limit for EWS Quota	88
22.Bengal can't bar CBI from Probing Crimes in a state, Centre tells SC	90
23.Nearly 700 Detained and put under Public Safety Act in J&K	92
24.Kerala urges Tamil Nadu to draw Mullaperiyar Water	94
25.SC seeks Affidavit on Central Vista	97
26.Supreme Court holds order on quota in Promotions	99

27.Updated NPR form appears to retain Contentious Questions	101
28.Centre wants to keep Birth, Death Database	103

3.1. POLITY & GOVERNANCE SNIPPETS

1. One Sun, One World, One Grid (OSOWOG)	106
2. SACRED Portal	107
3. 2nd Phase of SBM-U and AMRUT Mission	108
4. Jal Jeevan Mission (JJM)	109
5. Aadhaar-enabled Payment System (AePS)	109
6. Swadesh Darshan Scheme	110
7. BSF Powers and Jurisdiction	111
8. Graded Response Action Plan (GRAP)	112
9. Quantum Key Distribution (QKD)	113
10.Climate Resilience Information System and Planning (CRISP-M)	114
11.Medical Termination of Pregnancy (Amendment) Act, 2021	115
12.Public Sector Undertakings (PSUs)	116
13.What the low rank on the Global Hunger Index means for India	117
14.Farmers have Right to Protest, but can't block roads: SC	119
15.Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM)	120
16.Jammu & Kashmir Public Safety Act (PSA), 1978.	121
17.National Steering Committee (NSC)	122
18.SC sets up Committee to Examine Pegasus Allegations	123
19.Unified Database of Birth and Death	125
20.CERT-In authorized as CVE Numbering Authority (CNA)	126

4. SCIENCE & TECHNOLOGY

1. Expert Panel Clears Covaxin for Emergency Use in 2 to 18 age Group	128
2. China Denies Testing of Hypersonic Technology	130
3. 'Ebola is defeated', says Congolese professor who discovered Virus	133

4.1. SCIENCE & TECHNOLOGY SNIPPETS

1. Computer Tomography	135
2. Type 1 diabetes	136
3. Antimalarial Drugs Resistance (AMR)	137
4. Astro Robot	138

5. Drone-Based Vaccine Delivery Model: i-Drone	138
6. Biodegradable Polymer	139
7. Indian Meteorite helps study Earth's formation	140
8. Mission Lucy	142
9. Black Hole Mergers	142
10. Border Security Force (BSF)	143
11. Cambrian Patrol Exercise	144
12. Ex Yudh Abhyas 2021	145
13. Geospatial Energy Map	145
14. Zeolite Oxygen Concentrators: Chemistry in 3-D	146
15. Submarine Launched Ballistic Missile (SLBM)	147
16. What are Non-Transgenic Gene Editing techniques?	148
17. Hybrid Immunity	150
18. White Dwarf	152

5.1. ART AND CULTURE & MISCELLANEOUS SNIPPETS

1. Nobel Prize for Physiology/Medicine, 2021	153
2. Nobel Prize 2021	153
3. Ecological Threat Report (ETR) 2021	154
4. Kushinagar Airport	155

6. INTERNATIONAL RELATIONS

1. World Health Organization recommends first Anti-Malarial Vaccine	157
2. Indo- Nepal Border issue	160
3. Iran makes more 20% enriched Uranium	162
4. India and Israel Free Trade Agreement	164
5. Turkey added to FATF Grey List	165
6. Srinagar Students booked under UAPA	167

6.1. INTERNATIONAL RELATIONS SNIPPETS

1. India, Australia to Conclude free trade pact by end 2022	168
2. India's Path to Power: Strategy in a World Adrift	170
3. Henley Passport Index 2021	172
4. Green Pacts inked at India, Denmark Summit	172

5. Global Minimum Tax Deal	174
6. Govt pushes for a reset of India-ASEAN FTA	175
7. Europe as a valuable strategic partner	177
8. India invited to become full-time IEA member	179
9. Explained: Patrolling Points along LAC	180
10. Bhutan-China Border Agreement	182
11. UAVs boost Army watch in eastern sector	184
12. COP 26 United Nations Climate Change Conference	185
13. The Outlines of a National Security Policy	186
14. Crises in Pakistan is an occasion to reflect on the long-term regional	187
15. A festering crisis in the Palk Strait	188
16. Queen Heo Hwang-ok memorial park	190
17. Traffic management policy framework for drones	190



1.1 ECONOMY SNIPPETS

1. Export Credit Guarantee Corporation (ECGC)

Why in News?

- Recently, the Union Cabinet has approved capital infusion in the Export Credit Guarantee Corporation (ECGC) and its listing through an initial public offering.

Highlights:

- The Government will inject Rs 4,400 crore in the ECGC over a period of five years beginning 2021-22.
- The Cabinet also approved continuation of the National Export Insurance Account (NEIA) scheme and infusion of Rs 1,650 crore Grant-in-Aid over five years.
- **Establishment:** The ECGC Ltd is wholly owned by the Ministry of Commerce and Industry. The Government of India had initially set up the Export Risks Insurance Corporation in 1957.
- After the introduction of insurance covers to banks during the period 1962-64, the name was changed to Export Credit & Guarantee Corporation Ltd in 1964.
- It was changed to ECGC Ltd in August 2014.
- **Objectives:** ECGC was established to promote exports by providing credit insurance services to exporters against non-payment risks by the overseas buyers due to commercial and political reasons.
- **Significance of Capital infusion:** It will enable it to expand its coverage to export-oriented industries, particularly labour-intensive sectors.
- ECGC is a market leader with around 85% market share in the export credit insurance market in India and provided support to exports worth Rs 6.02 lakh, or 28% of merchandise exports, in FY21. Micro, Small and Medium Enterprises (MSMEs) form 97% of the client base of ECGC. The process of listing ECGC on the stock market is also being initiated so that it can raise more funds.
- National Export Insurance Account (NEIA) Scheme was established in 2006 to promote project exports from India that are of strategic and national importance.
- It promotes Medium and Long Term (MLT)/project exports by extending (partial/full) support to covers issued by ECGC to MLT/project export.
- Exim Bank, in April 2011, in conjunction with ECGC Ltd., introduced a new initiative, viz. Buyer's Credit under the NEIA scheme, under which the Bank finances and facilitates project exports from India.

2. The Many Benefits of a strong GI Ecosystem

Why in News?

- This editorial discusses various economic and socio-cultural benefits offered by the Geographical Indication (GI) Tagging.

What is Geographical Indication?

- A GI is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin.
- India, as a member of the World Trade Organization (WTO), enacted the Geographical Indications of Goods (Registration and Protection) Act, 1999 w.e.f. September 2003.
- GIs have been defined under Article 22 (1) of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement.
- GI is granted for a term of 10 years in India. As of today, more than 300 GI tags has been allocated so far in India (*Wikipedia).

Why must we Promote GI?

- Several studies show that the patents and copyright protection of products under GIs result in higher economic gains, fostering quality production and better distribution of profits.
- **Lost in History:** Most GI are either assigned to the dusty pages of history books or left to rural artisans to propagate and preserve.
- **Source of Income:** Today, with the emphasis on climate change and sustainability, these products can be ready Revenue Generators. Demand in e-com market: A modern distribution system exists in India's robust global e-commerce backbone which will propel the nascent GI industry onto the national and world stage.

Need for Govt Support:

- GI products need the support of governments.
- The Europeans are masters at it, as seen by products such as Brie cheese and sparkling wine from Champagne. The EU has an \$87 billion GI economy.
- China has also done very well by GI, strengthening e-commerce in rural areas and actively promoting agricultural special product brands in lesser developed areas.

Role of GI in China's Rise:

- A 2017 UNCTAD report on inclusive growth and e-commerce deems China's e-commerce-driven growth as inclusive.

- That means China has successfully empowered micro, small and medium enterprises (MSMEs) to compete with large companies on the same stage, with no geographic boundaries.
- Likewise, despite a globally depressed market for wines, the produce from the Ningxia region of China saw exports surge 46.4 per cent in 2020, benefitting 211 wineries in Ningxia.
- The output value of GI producers in China totalled \$92.771 billion as of 2020.

Socio-cultural Benefits offered by GI:

- GI protection has wider positive benefits, especially for local communities.
- In particular, it encourages the preservation of biodiversity, local know-how and natural resources. And this is where India can do well.
- Multiple benefits flows from a strong GI ecosystem, which can be a wellspring of economic and soft power.
- It will automatically resolve the three fraught India issues of poor pay for talent, low female participation in the labour force, and urban migration.

How can GI Induce Economic Transformation?

1. Promotes Entrepreneurship and ‘Passion Economy’

- ✓ It will convert talent into entrepreneurship with gig workers, and create a “passion” economy, that is, a new way for individuals to monetise their skills and scale their Businesses Exponentially.
- ✓ It removes the hurdles associated with freelance work to earn a regular income from a source other than an Employer.

2. Employment Generation

- ✓ The labour-intensive nature of GI offers the best solution to boosting the employment-to-population ratio in India.
- ✓ India Presently has an abysmal 43 per cent compared with the 55 per cent Global Average.

3. Women Empowerment

- ✓ GI production mostly involves artisanal work-from-home culture.
- ✓ Monetising this artisanal work done at home will increase India’s low female labour force participation rate, which at 21 per cent in 2019 was half the 47 per cent global average.

4. Prevents migration

- ✓ The hyper-localised nature of GI offers solutions to reverse urban migration and conserve India's ancient crafts, culture and food.

5. MSME Promotion

- ✓ A rejuvenation of MSMEs, which account for 31 per cent of India's GDP and 45 per cent of exports, will follow.
- ✓ An estimated 55.80 million MSMEs employ close to 130 million people; of this, 14 per cent are women-led enterprises and 59.5 per cent are rural.

6. GI Tourism

- ✓ Another revenue-earner, GI tourism, is typically a by-product of a strong GI ecosystem.
- ✓ Hurdles in GIs progress

7. Credit Facilities and Capacity Building

- ✓ Since GI businesses are micro, it is necessary to address the challenges of capacity-building, formal or easy access to credit.
- ✓ There is a need for forming marketing linkages, research and development, product Innovation and competitiveness in both domestic and International Markets.

8. Issue of Intermediaries

- ✓ With the shift to digital platforms, the distribution margins of these gate keepers or mandi agents must be competitive. They often act as countervailing agents by getting into similar businesses or product lines which will erode GI producer incomes.

9. Ensuring smoother transition

- ✓ As seen from the experience of the new farm laws, this will be a task for the central and State Governments; they must ensure the transition without breaking down too many Existing Linkages.

3. Green Term Loan

Why in News?

- Recently, NTPC Renewable Energy (NTPC-REL), a subsidiary of NTPC, has signed its first Green Term Loan agreement for installation of Solar Projects in Rajasthan & Gujarat.

Highlights:

- NTPC-REL is also constructing India's largest single local solar power park of 4.75 GW in Kutch.
- NTPC is taking various steps to make its energy portfolio greener by adding significant capacities of renewable energy sources.

- A green loan is a form of financing that seeks to enable and empower businesses to finance projects which have a distinct environmental impact, or rather, which are directed towards financing 'green projects'.
- It will help raise corporate value, by demonstrating that they are actively promoting Green Projects by procuring Green Loans, which could possibly earn them public acceptance.
- This will also help in fulfilling Corporate Social Responsibility targets.
- By providing Green Loans, lenders can support the realization of the environmental benefits that contribute to creating a sustainable society, while simultaneously gaining returns on their lending.
- An increase in Green Loans and Green Deposits will enhance individual awareness of Green Loans.
- An increase in Green Loans is expected to increase private funds in Green Projects, contributing to the substantial reduction of GHG (GreenHouse Gas) emissions and the prevention of degradation of natural capital.
- The promotion of Green Projects can lower energy costs, strengthen energy security, revitalize the Regional Economy, and enhance Resilience in the Event of Disasters.

4. India needs a Carbon Policy for Agriculture

Why in News?

- The UK is set to host the 26th UN Climate Change Conference of the Parties (CoP26) in Glasgow from October 31 to November 12 with a view to accelerate action towards the Paris Agreement's goals. The focus should be on climate finance and transfer of Green Technologies at low cost.

Cause of Concern for India:

- According to the Global Carbon Atlas, India ranks third in total greenhouse gas emissions by emitting annually around 2.6 billion tonnes (Bt) CO₂eq, preceded by China (10 Bt CO₂eq) and the United States (5.4 Bt CO₂eq), and followed by Russia (1.7Bt) and Japan (1.2 Bt).
- India ranked seventh on the list of countries most affected due to extreme weather events, incurring losses of \$69 billion (in PPP) in 2019 (Germanwatch, 2021).
- The fact that 22 of the 30 most polluted cities in the world are in India is a major cause of concern.
- Delhi is the world's most polluted capital as per the World Air Quality Report, 2020.

- Issues raised in global negotiation on climate change:
- Nations are still quibbling about historical global emitters and who should take the blame and fix it. Global Negotiations on climate change often talk about emissions on a per capita basis and the emission intensity of GDP.
- **Per capita Emission:** Of the top five absolute emitters, the US has the highest per capita emissions (15.24 tonnes), followed by Russia (11.12 tonnes).
- India's per capita emissions is just 1.8 tonnes, significantly lower than the world average of 4.4 tonnes per capita. If one takes emissions per unit of GDP, of the top five absolute emitters, China ranks first with 0.486 kg per 2017 PPP \$ of GDP, which is very close to Russia at 0.411 kg per 2017 PPP \$ of GDP. India is slightly above the world average of 0.26 (kg per 2017 PPP \$ of GDP) at 0.27 kg, while the USA is at 0.25, and Japan at 0.21.
- In our Nationally Determined Contributions (NDCs) submitted in 2016, India committed to “reduce emission intensity of its GDP by 33 to 35 per cent by 2030 from 2005 level.”
- Sector-wise emission and share of agriculture in it
- Global emissions show that electricity and heat production and agriculture, forestry and other land use make up 50 per cent of the emissions.
- But the emissions pie in India owes its largest chunk (44 per cent) to the energy sector, followed by the manufacturing and construction sector (18 per cent), and agriculture, forestry and land use sectors (14 per cent), with the remaining being shared by the transport, industrial processes and waste sectors.
- The share of agriculture in total emissions has gradually declined from 28 per cent in 1994 to 14 per cent in 2016. However, in absolute terms, emissions from agriculture have increased to about 650 Mt CO₂ in 2018, which is similar to China's emissions from agriculture. Agricultural emissions in India are primarily from the livestock sector (54.6 per cent) in the form of methane emissions due to enteric fermentation and the use of nitrogenous fertilisers in agricultural soils (19 per cent) which emit nitrous oxides; rice cultivation (17.5 per cent) in anaerobic conditions accounts for a major portion of agricultural emissions followed by livestock management (6.9 per cent) and burning of crop residues (2.1 per cent).

Way forward: Carbon Policy for Agriculture:

- **Reward farmers through Carbon Credit:** A carbon policy for agriculture must aim not only to reduce its emissions but also reward farmers through carbon credits which should be globally tradable.

- **Focus on Livestock:** With the world's largest livestock population (537 million), India needs better feeding practices with smaller numbers of cattle by raising their productivity.
- Switch areas from rice to maize: While direct-seeded rice and alternative wet and dry practices can reduce the carbon footprint in rice fields, the real solution lies in switching areas from rice to maize or other less water-guzzling crops.
- **Efficient Fertiliser Use:** Agricultural soils are the largest single source of nitrous oxide (N₂O) emissions in the national inventory.
- Nitrous oxide emissions from use of nitrogen-fertiliser increased by approximately 358 per cent during 1980-81 to 2014-15. An alternative for better and efficient fertiliser use would be to promote fertigation and subsidise soluble fertilisers.
- Incentives and subsidies: The government should incentivise and give subsidies on drips for fertigation, switching away from rice to corn or less water-intensive crops, and promoting soluble fertilisers at the same rate of subsidy as granular urea.

5. Palk Bay Scheme

Why in News?

- The Union Government is considering increasing the unit cost of deep-sea fishing vessels under the Palk Bay scheme to make it more attractive to fisherfolk.

Palk Bay Scheme:

- The Palk Bay Scheme is the official scheme for diversification of trawl fishing boats from Palk Strait into deep sea fishing boats.
- It is aimed at encouraging fishermen to take up deep-sea fishing and put an end to disputes arising between the India and Sri Lanka. The project helps fishermen in the Palk Straits, who are not exposed to deep-sea fishing, to venture deep into the Indian Ocean, Arabian sea and other deep-sea areas to look for fish like tuna that are in high demand.

Why need such Scheme?

- Bottom trawling, an ecologically destructive practice, involves trawlers dragging weighted nets along the sea-floor, causing great depletion of aquatic resources.

Key Components of the Scheme:

- The project aims to replace all trawler boats and introduce over 2,000 deep sea fishing boats in a course of five years.
- The scheme, under the aegis of Blue Revolution scheme – is funded by the Centre – 50 per cent and state government – 20 per cent for a boat costing Rs 80 lakh.

- Of the balance 30 per cent, 10 per cent is contributed by the beneficiary (fisherman), and the remaining 20 per cent is funded by banks.

6. Rail link between Nepal and India

Why in News?

- The first stretch of rail link between Nepal and India is ready to resume on the neighbouring country's first-ever broad gauge passenger service (Jainagar-Bijalpura-Bardibas railway project).

Highlights:

- The rail link between Nepal and India has been popular since the early 20th century.
- In 1937, the British had built a narrow gauge line to ferry cargo, mainly logs, from Nepal to India.
- However, over time it became a popular passenger service before it was stopped in 2014 for conversion to broad gauge.
- **First Stretch:** A 34-km line between Bihar's Jainagar and Nepal's Kurtha, with the Hindu pilgrimage city of Janakpur Dham (in Nepal) in between.
- **Second Stretch:** A 17 km of railway line from Kurtha to Bijalpura is also getting the finishing touches.
- For the remaining portion up to Bardibas, land is being handed over to IRCON International Limited (a Government of India Undertaking).
- **Cost of Project:** The construction cost of Rs 784 crore for the entire stretch is being borne by India in the form of a grant to Nepal.
- **Managing Body:** The Konkan Railway Corporation Limited has got the contract for operations and maintenance of the line, and will train and develop manpower provided by Nepal, as per the bilateral understanding. MoUs have been signed between both the governments for laying an electric rail track linking Kathmandu with Raxaul (Bihar) in India. India and Nepal have signed a Letter of Exchange (LoE) to the India-Nepal Rail Services Agreement (RSA) 2004. It will allow all authorized cargo train operators to utilize the Indian railway network to carry Nepal's container and other freight – both bilateral between Indian and Nepal or third country from Indian ports to Nepal.
- The line is being seen as a small link to a larger plan of deepening India's ties with Nepal through the Railways, bypassing the influence of other neighbouring countries in this strategically vital region.

7. RBI's Monetary Policy Statement

Why in News?

- The Monetary Policy Committee of the RBI kept the benchmark policy rates unchanged, and retained the Accommodative Stance in its October review.

Factors playing part in Monetary Policy Decisions:

- It's important to remember that monetary policy these days is influenced by both local macroeconomic developments and the global monetary policy direction, with the former playing a Dominant Role.
- Locally, after the second wave of the pandemic, a variety of indicators such as the Purchasing Managers Index (manufacturing and services), mobility indicators, government tax collections, exports and imports are pointing at an improvement in economic activity.
- Then there is the good news on the monsoon front. With a late pick-up in rains, the cumulative deficiency in this monsoon season has come down to just 1 per cent of the long-period average (LPA).
- Since the MPC's August 2021 policy review, Covid-19 cases have trended down and there has been admirable progress on the vaccination front.
- Also, despite high year-on-year growth numbers, the level of economic activity this fiscal will only be 1.5 per cent above 2019-2020.

Trends Emerging from the Economic Recovery:

- Role of government: Capital expenditure of both the Centre and states is on track to meet the budgetary commitment, supported by healthy tax collections.
- Large companies on recovery path: Large companies in industrial sectors such as steel, cement, non-ferrous metals are operating at healthy utilisation levels, and have deleveraged their balance sheets.
- Policy support for smaller companies: The going is not so good for the smaller ones.
- Clearly, smaller companies need policy support. The extension of the Emergency Credit Line Guarantee Scheme is a recognition of that.
- Private consumption is not broad-based either.
- Even in goods consumption, which is faring better than services, the nature of demand seems skewed towards relatively higher-value items such as cars and utility vehicles.
- This probably reflects the income dichotomy spawned by the pandemic.

- Inflation: Its fall to 5.3 per cent in August offers only limited comfort for two reasons.
- One, core and fuel inflation, which have 54 per cent weightage in CPI, remain stubbornly high. Second, food prices have nudged down overall inflation.
- Domestic growth-inflation dynamics suggest that the RBI has little option but to remain more tolerant of persistent price pressures, and hope that these will eventually prove transitory because they have been primarily driven by supply shocks caused by the pandemic.

Global Monetary Policy Environment:

- Globally, the monetary policy environment is veering towards normalisation/tapering/interest-rate rise largely due to an upward surprise in inflation, or because some central banks feel the objectives of quantitative easing have been met.
- Central banks in advanced economies such as Norway, Korea and New Zealand have recently raised rates.
- The two systemically important central banks – the US Federal Reserve (Fed) and the European Central Bank (ECB) – view the current spike in inflation as fleeting and have communicated greater tolerance for it for a longer period.

8. Customs Duty Waiver on Edible Oil Imports

Why in News?

- The Union Commerce Minister has announced that the government has decided to waive customs duty on import of crude sunflower, palm and soyabean oil, a move aimed at controlling their prices.

Edible Oil Imports and India:

- Given the heavy dependency on imports, the Indian edible oil market is influenced by the International Markets.
- Of the 20-21 million tonnes of edible oil that India consumes annually, around 4-15 mt is imported.
- India is second only to China (34-35 mt) in terms of consumption of edible oil.
- Crude and food-grade refined oil is imported in large vessels, mainly from Malaysia, Brazil, Argentina, Indonesia etc.
- Home-grown oilseeds such as soyabean, groundnut, mustard, cottonseed etc find their way to domestic solvent and expellers plants, where both the oil and the protein-rich component is extracted.

Prices and Politics:

- Prices of edible oil have been rising across the country since few months.
- Most edible oils are trading between Rs 130-Rs 190/litre.
- Also, the festive season will see increased buying of edible oils.

Impact of the Move:

- Consumers might not see a drastic reduction immediately in prices of edible oil.
- The reduction in duty is expected to affect the earnings of oilseed growers across the country.

Long-term implications:

- Over the last few years, the government has taken a series of steps to remove India's import dependency on pulses, and tried to do the same for oilseeds through national missions. However, frequent market interventions that ultimately bring down prices would backfire on the government and veer farmers away from growing oilseeds.
- We need continuity in prices to help farmers stick to oilseeds or pulses.

Customs Duty:

- Customs duty refers to the tax imposed on goods when they are transported across International Borders.
- In simple terms, it is the tax that is levied on import and export of goods.
- Custom duty in India is defined under the Customs Act, 1962, and all matters related to it fall under the Central Board of Excise & Customs (CBEC).
- The Government uses this duty to raise its revenues, safeguard domestic industries, and regulate movement of goods. The rate of Customs duty varies depending on where the goods were made and what they were made of.

9. Powering the Energy Sector

Why in News?

- Most discoms are deep into the red as high aggregate technical and commercial (AT&C) losses are chipping into their revenues. Against this backdrop, the Electricity (Amendment) Bill of 2020 is a game-changing reform.
- Why the Electricity (Amendment) Bill of 2020 is a game-changing reform:
- De-licensing power distribution: This will provide the consumers with an option of choosing the service provider, switch their power supplier and enable the entry of private companies in distribution, thereby resulting in increased competition.

- In fact, privatisation of discoms in Delhi has reduced AT&C losses significantly from 55% in 2002 to 9% in 2020.
- Open access for purchasing power: Open access for purchasing power from the open market should be implemented across States and barriers in the form of cross-subsidy surcharge, additional surcharge and electricity duty being applied by States should be reviewed.
- **Issue of Tariff Revision:** The question of tariffs needs to be revisited if the power sector is to be strengthened. Tariffs ought to be reflective of the average cost of supply to begin with and eventually move to customer category-wise cost of supply in a defined time frame.
- This will facilitate a reduction in cross-subsidies.
- **Inclusion in GST:** Electrical energy should be covered under GST, with a lower rate of GST, as this will make it possible for power generator/transmission/distribution utilities to get a refund of input credit, which in turn will reduce the cost of power.
- **Use of Smart Meters:** Technology solutions such as installation of smart meters and smart grids which will reduce AT&C losses and restore financial viability of the sector.
- The impetus to renewable energy: The impetus to renewable energy, which will help us mitigate the impact of climate change, is much needed. Despite its inherent benefits, the segment has shown relatively slow progress with an estimated installed capacity of 5-6 GW as on date, well short of the 2022 target. The Bill also underpins the importance of green energy by proposing a penalty for non-compliance with the renewable energy purchase obligations which mandate States and power distribution companies to purchase a specified quantity of electricity from renewable and hydro sources
- **Strengthening the regulatory Architecture:** This will be done by appointing a member with a legal background in every electricity regulatory commission and strengthening the Appellate Tribunal for Electricity.
- This will ensure faster resolution of long-pending issues and reduce legal hassles.
- Authority for contractual obligation: Provision in the Bill such as the creation of an Electricity Contract Enforcement Authority to supervise the fulfillment of contractual obligations under power purchase agreement, cost reflective tariffs and provision of subsidy through DBT are commendable. Early passage of the Bill is critical as it will help unleash a path-breaking reform for bringing efficiency and profitability to the distribution sector.

10.A Global Player in Solar Power

Why in News?

- Large-scale solar projects in Tamil Nadu have seen rapid growth in recent years. By Embracing Advances in solar technologies, India can continue to lead in this sector.

Factors Driving Growth:

- In the past five years, the cumulative installed capacity witnessed a four-fold increase in Tamil Nadu to 4.4 GW, as of March 2021.
- High insolation level: Aiding this capacity addition is the State's reasonably high insolation levels and matching solar potential, estimated at 279GW.
- **Decline in price:** The sharp decline in the prices for solar and resulting cost competitiveness is another factor.
- National target: Additionally, in response to the ambitious national targets and to spur sector specific development, Tamil Nadu released the Solar Policy of 2019, aiming for 9GW of solar installations by 2023.

- **Type of technology use for solar panel:**

1. Mono-crystalline Vs multi-crystalline panels:

- ✓ 'First-generation' solar cells use mono-crystalline and multi-crystalline silicon wafers.
- ✓ The efficiency of mono-crystalline panels is about 24%, while for multi-crystalline panels it is about 20%.
- ✓ Mono-crystalline cells are dominant today.
- ✓ Although mono-crystalline panels are priced higher than multi-crystalline ones, the difference is diminishing and will soon attain parity.
- ✓ This would result in mono panels being preferred over multi due to their higher efficiency, greater energy yield and lower cost of energy.

2. Bifacial Solar Cells:

- ✓ Newer technologies incorporating crystalline silicon focus on bifacial solar cells, capable of harvesting energy from both sides of the panel.
- ✓ Bifacials can augment the power output by 10-20%.
- ✓ Within this, the Passive Emitter and Rear Contact technology is predicted to Gain popularity. However, it is yet to achieve price parity for large-scale deployment.

3. Thin-film Technologies:

- ✓ It is classified as the 'second generation of solar PVs.

- ✓ In addition to being used in solar farms and rooftops, thin films with their low thickness, light weight and flexibility are also placed on electronic devices and vehicles, power streetlights and traffic signals.
- ✓ Mainstream thin films utilise semiconductor chemistries like Cadmium Telluride with module efficiencies of around 19%.
- ✓ Other technologies include Amorphous Silicon and Copper Indium Gallium Di-Selenide.
- ✓ Nanocrystal and dye-sensitised solar cells are variants of the thin film technology. These are in early stages for large-scale commercial deployment
- ✓ However, the efficiency of thin films is lower than that of crystalline silicon.

4. Perovskite:

- ✓ These are grouped as ‘third generation’ and contain technologies such as perovskite, Nanocrystal and dye-sensitised solar cells.
- ✓ Perovskites have seen rapid advances in recent years, achieving cell efficiency of 18%.
- ✓ They have the highest potential to replace silicon and disrupt the solar PV market, due to factors such as ease of manufacture, low production costs and potential for Higher Efficiencies.

5. Use of Graphene Quantum-dots:

- ✓ Graphene is made of a single layer of carbon atoms bonded together as hexagons.
- ✓ Solar cells made of graphene are of interest due to high theoretical efficiency of 60% and its super capacitating nature.
- ✓ Quantum-dot PVs use semiconductor nanocrystals exhibiting quantum mechanical properties capable of high efficiency of about 66%.
- ✓ However, both these are in the early stages of research.
- ✓ Technologies to better integrate solar PVs into the grid
- ✓ These technologies include weather forecasting and power output prediction systems; operation monitoring and control systems; and scheduling and optimisation systems.
- ✓ Additionally, automatic systems have been developed for the smooth resolution of output fluctuations.

Way Forward:

- A portion of the budget for renewable energy targets should be set aside exclusively for New Technologies.

- Grants and subsidies can also be provided for their adoption.
- Efforts must be taken to address gaps in research, development, and manufacturing capabilities in the solar sector through sector-specific investment and incentives.
- There must also be greater industry-academia collaborations and funding opportunities for startups.
- A comprehensive sector-specific skilling programme is also required for workers.

11.A clean Energy Transition Plan for India

Why in News?

- India has a long way to go in providing electricity security to its people since its per capita Electricity Consumption is still only a third of the global average.

Ensuring Energy Security and Role of Coal:

- Energy security warrants the uninterrupted supply of energy at affordable prices.
- Thanks to the Electricity Act of 2003, the installed coal-fired thermal power plant (TPP) generation capacity in India more than doubled from 94 GW to 192 GW between March 2011 and 2017.
- This sharp increase in the installed capacity has enabled the government to increase per capita electricity consumption by 37% while reducing peak demand deficit from 9.8% (2010-11) to 1.6% (2016-17).
- TPPs contributed 71% of the 1,382 billion units (BU) of electricity generated by utilities in India during FY 2020-21 though they accounted for only 55% of the total installed generation capacity of 382 GW (as of March 2021).
- Coal, therefore, plays a vital role in India's ongoing efforts to achieve Sustainable Development Goal 7, which is "to ensure access to affordable, reliable, sustainable and modern energy for all".
- Renewable energy utilisation issue and implications for consumers:
- While variable renewable energy (VRE) sources (primarily, wind and solar) account for 24.7% of the total installed generation capacity, as of March 2021, they contributed 10.7% of the electricity generated by utilities during FY 2020-21.
- However, the ramp-up of VRE generation capacity without commensurate growth in electricity demand has resulted in lower utilisation of TPPs whose fixed costs must be paid by the distribution companies (DISCOMs) and passed through to the final consumer.

- The current level of VRE in the national power grid is increasing the cost of power procurement for DISCOMs, leading to tariff increases for electricity consumers.
- Therefore, India must implement a plan to increase energy efficiency and reduce the emissions of carbon dioxide (CO₂) and airborne pollutants from TPPs without making power unaffordable to industries that need low-cost 24×7 power to compete in the global market.
- **Way Forward:** time-bound transition plan:
- **Phasing Out:** The plan should involve the progressive retirement of TPPs (unit size 210 MW and below) based on key performance parameters such as efficiency, specific coal consumption, technological obsolescence, and age.
- **Increasing Utilisation:** The resulting shortfall in baseload electricity generation can be made up by increasing the utilisation of existing High-Efficiency-Low-Emission (HELE) TPPs that are currently under-utilised to accommodate VRE and commissioning the 47 Government-owned TPPs.
- In addition, the Nuclear Power Corporation of India Limited (NPCIL) is also constructing 11 nuclear power plants with a total generation capacity of 8,700 MW that will supply 24×7 power without any CO₂ emissions.
- The combined thermal (220 GW) and nuclear (15 GW) capacity of 235 GW can meet the base load requirement (80% of peak demand) during the evening peak in FY 2029-30 without expensive battery storage.
- The optimal utilisation of existing and under-construction HELE TPPs with faster-ramping capabilities and lower technical minimums also facilitates VRE integration.
- Since HELE TPPs minimise emissions of particulate matter (PM), SO₂, and NO₂, the transition plan offers operational, economic, and environmental benefits including avoidance of sustenance Capex and FGD costs in the 211 obsolete TPPs to be retired besides savings in specific coal consumption and water requirement leading to reductions in electricity tariffs and PM pollution.

12. India's First Banni Buffalo IVF Calf Born

Why in News?

- With the birth of first IVF calf of a Buffalo breed namely Banni in the country, India's Ovum Pick-Up (OPU) – IVF work has reached to next level.

Banni Buffalo:

- Banni buffaloes are also known as “Kutchi” or “Kundi”.
- The breeding tract includes the Banni area of Kutch district of Gujarat.
- The breed is maintained mostly by Maldharis under locally adapted typical extensive production system in its breeding tract.

What makes them Unique?

- Banni buffaloes are trained to graze on Banni grassland during night and brought to the villages in the morning for milking.
- This traditional system of buffalo rearing has been adapted to avoid the heat stress and high temperature of the day.
- It has unique qualities of adaptation such as the ability to survive water scarcity conditions, to cover long distances during periods of drought and disease resistance.

Indigenous buffalo breeds in India:

S.No	BREED	BREEDING STATE
1	Banni	Gujarat
2	Bargur	Tamil Nadu
3	Bhadawari	Uttar Pradesh and Madhya Pradesh
4	Chattisgarh	Chhattisgarh
5	Chilika	Odisha
6	Gojri	Himachal Pradesh and Punjab
7	Jaffarabadi	Gujarat
8	Kalahandi	Odisha
9	Luit (Swamp)	Assam
10	Marathwadi	Maharashtra
11	Mehsana	Gujarat
12	Murrah	Haryana and Delhi
13	Nagpuri	Maharashtra
14	Nilli Ravi	Punjab
15	Pandharpuri	Maharashtra
16	Surti	Gujarat
17	Toda	Tamil Nadu

13. Prakritik Kheti Khushhal Yojana (PK3Y)

Why in News?

- Women farmers in the hill State of Himachal Pradesh are gradually turning to non-chemical, low cost “natural farming”, under the Prakritik Kheti Khushhal Yojana (PK3Y).

Prakritik Kheti Khushhal Yojana:

- Launched in 2018, the State’s PK3Y is promoting the climate resilient Subhash Palekar Natural Farming (SPNF), also called ‘Zero Budget Natural Farming’.
- Over 1.5 lakh farmers have been trained in natural farming in the State so far, with substantial numbers of women participants.

Zero Budget Natural Farming (ZBNF):

- ZBNF is a set of farming methods, and also a grassroots peasant movement, which has spread to various states in India. Subhash Palekar perfected it during the 1990s at his farm in Amravati district in Maharashtra’s drought-prone Vidarbha region.
- According to the “zero budget” concept, farmers won’t have to spend any money on fertilisers and other agricultural inputs.
- Over 98% of the nutrients that crops require — carbon dioxide, nitrogen, water, solar energy — are already present in nature.
- The remaining 1.5-2% are taken from the soil, after microorganisms convert them from “non-“.

Four Wheels of ZBNF:

- The “four wheels” of ZBNF are ‘Jiwamrita’, ‘Bijamrita’, ‘Mulching’ and ‘Waaphasa’.
- Jiwamrita is a fermented mixture of cow dung and urine (of desi breeds), jaggery, pulses flour, water and soil from the farm bund.
- This isn’t a fertiliser, but just a source of some 500 crore micro-organisms that can convert all the necessary “non-available” nutrients into “available” form.
- Bijamrita is a mix of desi cow dung and urine, water, bund soil and lime that is used as a seed treatment solution prior to sowing.
- Mulching, or covering the plants with a layer of dried straw or fallen leaves, is meant to conserve soil moisture and keep the temperature around the roots at 25-32 degrees Celsius, which allows the microorganisms to do their job.
- Waaphasa, or providing water to maintain the required moisture-air balance, also achieves the same objective.

Astra's of ZBNF against Pest Attacks:

- ZBNF advocates the use of special 'Agniastra', 'Bramhastra' and 'Neemastra' concoctions.
- They are based on cow urine and dung, plus pulp from leaves of neem, white datura, papaya, guava and pomegranates — for controlling pest and disease attacks.

Is it organic farming?

- ZBNF uses farmyard manure or vermicompost.
- However, not all farmers are convinced about ZBNF. Why?
- **Cost of Labour:** The cost of labour for collection of dung and urine, apart from the other inputs used in preparation of Jiwamrita, Neemastra or Bramhastra is quit higher.
- **Bovine Cost:** Keeping cows is also a cost that has to be accounted for. Farmers cannot afford to keep desi cows that yield very little milk.
- Vulnerability to pest attacks: ZBNF is scarcely practiced. The crop grown would be vulnerable to attacks by insects and pests have already become pest-immune.

14. Genetically Modified (GM)

Why in News?

- Recently , the discovery of 500 tonnes of Genetically Modified (GM) rice in a consignment that India exported to the European Union countries in June 2021 has led to the “loss of reputation of India and its agricultural market”.

Highlights:

- India pointed out that GM rice is not grown commercially in India, let alone exported, and promised a thorough enquiry by its agricultural exports authority, the Agricultural and Processed Food Products Export Development Authority (APEDA).
- GM foods are derived from plants whose genes are artificially modified, usually by inserting genetic material from another organism, in order to give it a new property, such as increased yield, tolerance to a herbicide, resistance to disease or drought, or to improve its nutritional value.
- Golden rice involves the insertion of genes from a plant -- both daffodils and maize have been used -- and a soil bacterium to create a grain that is enriched with Vitamin A.
- India has approved commercial cultivation of only one GM crop, Bt cotton.
- No GM food crop has ever been approved for commercial cultivation in the country.
- However, confined field trials have been allowed for at least 20 GM crops.

- That includes varieties of GM rice which would have improved resistance to insects and diseases, as well as hybrid seed production and nutritional enhancements such as golden rice. The cons of GM foods are that they may cause allergic reactions because of their altered DNA and they may increase antibiotic resistance.
- India is the world's top rice exporter, earning Rs. 65,000 crore in 2020 by selling 18 million tonnes of grain (organic rice), about a quarter of which is premium basmati.
- Among the 75 countries which buy Indian rice, West Asian nations, the US and the U.K. are the biggest importers of basmati, while the majority of non-basmati goes to African countries and neighbours Nepal and Bangladesh.
- For Indian farmers, the nightmare scenario could be what happened in the US in 2006, when trace amounts of a GM rice variety were found in shipments ready for exports.
- Trading partners such as Japan, Russia and the EU suspended rice imports from the US, hitting farmers hard.
- Under pressure from the rice export lobby at the time, India drafted policies to ban GM rice trials in the basmati belt.
- However, farmers from other parts of the country, especially those aiming for the nascent but growing organic rice export market, worry that their products could face contamination.
- Unauthorised HtBt Cotton and Bt Brinjal are already being grown commercially, with hundreds of growers blatantly defying the Governmental Ban.

2. ENVIRONMENT

1. NDRF Deployed in Disaster hit areas of Kerala

Why in News?

- The death toll in rain-related incidents in Kerala is rising, with the recovery of more bodies from the landslip-ravaged areas of Kottayam and Idukki districts.

About the News:

- The Chief Minister recently said that five more teams of the National Disaster Response Force (NDRF) will be deployed in Idukki, Kottayam, Kannur, Palakkad and Kollam districts.
- At present, the NDRF has teams deployed in Pathanamthitta, Alappuzha, Idukki, Ernakulam, Thrissur and Malappuram districts.

About NDRF:

- The National Disaster Response Force (NDRF) is a specialised force constituted "for the purpose of specialist response to a threatening disaster situation or disaster" under the Disaster Management Act, 2005.
- The responsibility of managing disasters India is that of the State Government. The 'Nodal Ministry' in the central government for management of natural disasters is the Ministry of Home Affairs (MHA).
- National Disaster Response Force (NDRF) is under the National Disaster Management Authority.
- National Disaster Response Force (NDRF) is a force of 12 battalions, organised on Para-military lines, and manned by persons on deputation from the Para-military forces of India: three each from the BSF and CRPF and two each from CISF, ITBP and SSB.
- NDRF in addition to being able to respond to natural disasters has four battalions capable of responding to radiological, nuclear, biological and chemical disasters.
- The Apex Body for Disaster Management in India is the National Disaster Management Authority (NDMA). The Chairman of the NDMA is the Prime Minister.

Why it was Created?

- Two national calamities in quick succession in the form of Orissa Super Cyclone (1999) and Gujarat Earthquake (2001) brought about the realization of the need of having a specialist response mechanism at National Level to effectively respond to disasters. This realization led to the enactment of the DM Act on 26 Dec 2005.

What are the Roles and Mandate of NDRF?

- Specialized response during disasters.
- Proactive deployment during impending disaster situations.
- Acquire and continually upgrade its own training and skills.
- Liaison, Reconnaissance, Rehearsals and Mock Drills.
- Impart basic and operational level training to State Response Forces (Police, Civil Defence and Home Guards).
- Community Capacity Building Programme.
- Organize Public Awareness Campaigns.

2. Southwest Monsoon Withdraws from India

Why in News?

- The India Meteorological Department (IMD) recently said that the southwest monsoon has withdrawn from the entire Country.

About the News:

- It is a long-drawn-out process that typically begins in Rajasthan from September 17 and fully exits the country by October 15.
- This year, however, the monsoon withdrawal began only on October 6.
- The IMD stated that from 1975-2021, only seven times had the monsoon withdrawn after the 25th or beyond. Interestingly, six of them have been since 2000.
- Last year, which saw record-breaking rainfall in India that was 9% more than the long period average, also saw the southwest monsoon fully withdraw only on October 28.
- While September is usually the month that marks the beginning of the end, for the monsoon's four month sojourn over India, 2021 has seen significant rainfall, with India posting 135% more rain than what's normal of for the season.

Onset of the South-West Monsoon:

- The location of ITCZ shifts north and south of the equator with the apparent movement of the Sun. During the month of June, the sun shines vertically over the Tropic of Cancer and the ITCZ shifts northwards.
- The southeast trade winds of the southern hemisphere cross the equator and start blowing in southwest to northeast direction under the influence of Coriolis force.
- These winds collect moisture as they travel over the warm Indian Ocean.

- In the month of July, the ITCZ shifts to 20°-25° N latitude and is located in the Indo-Gangetic Plain and the south-west monsoons blow from the Arabian Sea and the Bay of Bengal.
- The ITCZ in this position is often called the Monsoon Trough.
- The shift in the position of the ITCZ is also related to the phenomenon of the withdrawal of the westerly jet stream from its position over the north Indian plain, south of the Himalayas.

The easterly Jet Stream (Somali Jet) sets in along 15°N latitude only after the western jet stream has withdrawn itself from the region. This easterly jet stream is held responsible for the burst of the monsoon in India.

- As these winds approach the land, their southwesterly direction is modified by the relief and thermal low pressure over northwest India. The monsoon approaches the Indian landmass in two branches:
 - ✓ **The Arabian Sea branch** - The monsoon winds originating over the Arabian Sea.
 - ✓ **The Bay of Bengal branch** - The Arakan Hills along the coast of Myanmar deflect a big portion of this branch towards the Indian subcontinent. The monsoon, therefore, enters West Bengal and Bangladesh from south and southeast instead of from the south-westerly direction.
- Another phenomenon associated with the monsoon is its tendency to have 'breaks' in rainfall. The monsoon rains take place only for a few days at a time. They are interspersed with rainless intervals. These breaks in monsoon are related to the movement of the monsoon trough.

Factors Influencing South-West Monsoon Formation:

- The differential heating and cooling of land and water creates a low pressure on the landmass of India while the seas around experience comparatively high pressure.
- The shift of the position of Inter Tropical Convergence Zone (ITCZ) in summer, over the Ganga plain (this is the equatorial trough normally positioned about 5°N of the equator. It is also known as the monsoon-trough during the monsoon season).
- The presence of the high-pressure area, east of Madagascar, approximately at 20°S over the Indian Ocean. The intensity and position of this high-pressure area affect the Indian Monsoon. The Tibetan plateau gets intensely heated during summer, which results in strong vertical air currents and the formation of low pressure over the plateau at about 9 km above sea level.

- The movement of the westerly jet stream to the north of the Himalayas and the presence of the tropical easterly jet stream over the Indian peninsula during summer.
- Tropical Easterly Jet (African Easterly Jet).
- El Nino/Southern Oscillation (SO): Normally when the tropical eastern south Pacific Ocean experiences high pressure, the tropical eastern Indian Ocean experiences low pressure. But in certain years, there is a reversal in the pressure conditions and the eastern Pacific has lower pressure in comparison to the eastern Indian Ocean. This periodic change in pressure conditions is known as the SO.

Difference between Northeast and Southwest monsoons:

- The Northeast monsoon derives its name from the direction in which it travels – from the northeast to the southwest.
- Similarly, the summer monsoon moves in exactly the opposite direction – from the southwest to the northeast. That is why it is called the southwest monsoon.

2.1. ENVIRONMENT SNIPPETS

1. Cyclone Gulab

Why in News?

- Cyclone Gulab has recently made landfall on India's east coast and weakened into a depression.

Highlights:

- Gulab was a tropical cyclone and was named by Pakistan. It affected the coasts of south Odisha north Andhra Pradesh. According to WMO (World Meteorological Organization) guidelines, countries in every region are supposed to give names for Cyclones.
- The North Indian Ocean Region covers tropical cyclones formed over Bay of Bengal and Arabian Sea. The 13 members, which come under the region, are Bangladesh, India, Maldives, Myanmar, Oman, Pakistan, Sri Lanka, Thailand, Iran, Qatar, Saudi Arabia, the UAE and Yemen.
- Indian Meteorological Department (IMD), one of the six Regional Specialised Meteorological Centres (RSMC) in the world, is mandated to issue advisories and name tropical cyclones in the north Indian Ocean Region.
- It is an agency of the Ministry of Earth Sciences.
- India has a bi-annual cyclone season that occurs between March to May and October to December. But on rare occasions, cyclones do occur in June and September months.

- Cyclone Gulab became the third cyclone of the 21st century to make landfall over the east coast in September, after tropical cyclone Daye in 2018 and Pyarr in 2005.
- Typically, tropical cyclones in the North Indian Ocean region (Bay of Bengal and Arabian Sea) develop during the pre-monsoon (April to June) and post-monsoon (October to December) periods.
- May-June and October-November are known to produce cyclones of severe intensity that affect the Indian coasts.
- The IMD classifies cyclones on the basis of the Maximum Sustained Surface Wind Speed (MSW) they generate.
- The cyclones are classified as severe (MSW of 48-63 knots), very severe (MSW of 64-89 knots), extremely severe (MSW of 90-119 knots) and super cyclonic storm (MSW of 120 knots or more). One knot is equal to 1.8 kmph (Kilometers Per Hour).
- Cyclone Gulab Falls into the severe category with maximum speed of 95 km/hr.
- Cyclones that Hit India in 2020-21: Tauktae, Yaas, Nisarga, Amphan.

2. Green Energy Push Slowed Down

Why in News?

- The lockdowns has slowed renewable energy installations in the country and the pace of such Installations is Lagging India's 2022 target.

Highlights:

- The report was released by the Institute for Energy Economics and Financial Analysis (IEEFA). IEEFA is a US non-profit corporation.
- India stands at 4th position in the world in terms of installed Renewable Energy capacity, 5th in solar and 4th in wind.
- India has managed to install only 43.94 GW of solar energy capacity till 31st July 2021.
- India was to have installed 100 GW of solar energy capacity by March 2023 - 40 GW rooftop solar and 60 GW ground-mounted utility scale.
- Only 7 GW of green energy capacity was added in FY 2020/21.
- India had set a target of 175 GW renewable power installed capacity by the end of 2022 and 450 GW by 2030.
- The amount of the power traded increased by 20% over 2020, by 37% compared to 2019 and by 30% over 2018. This led to prices on average increasing by 38% compared to 2020, by 8% compared to 2019 and by 11% over 2018.

- Coal Stocks hit a new record high of 1,320 lakh tonnes (Mt) and exceeded the monthly averages of the previous Five Years.
- However, an analysis of the daily coal stock position exhibited a “deterioration” as more plants reported Supplies were Critical.

3. Hara Bhara

Why in News?

- Hara Bhara, India’s first aerial Seeding Campaign in Telangana using the Seedcopter drone was Recently Launched.

Highlights:

- The idea of the campaign is to accelerate the mission of reforestation by planting one billion trees using drones by 2030 in the country.
- The project uses drones to disperse seed balls over thin, barren, and empty forest lands to turn them into lush green abodes of trees.
- The ‘seedcopter’ which is a drone developed by Marut Drones is an aerial seeding solution for rapid and scalable reforestation.
- Aerial Seeding is a plantation technique wherein seed balls — seeds covered with a mixture of clay, compost, char and other components — are sprayed using aerial devices, including planes, helicopters or drones.
- The plant species which are native to the area and hardy, with seeds that are of an appropriate size for preparing seedballs are usually used for aerial seeding, with a higher survival percentage. Seeds balls/pellets are dispersed in a targeted area by low-flying drones, with the coating providing the required weight for seeds to airdrop on a predetermined location rather than getting deterred by the wind.
- These pellets sprout when there is enough rain, with nutrients present within them helping in initial growth.

Advantages of Aerial Seeding:

- Areas that are inaccessible, having steep slopes or no forest routes, can be targeted using this method.
- The process of the seed’s germination and growth is such that it requires no attention after it is dispersed and thus seed pellets are known as the “fire and forget” way of planting.
- They eliminate any need for ploughing and do not need to be planted since they are already surrounded by soil, nutrients, and microorganisms.

- The clay shell also protects them from birds, ants and rats.
- Aerial application does not cause soil compaction, hence prevents soil runoff.
- This type of seeding technique will be most useful for tropical forests because they absorb carbon much faster than other forest types and also support much higher biodiversity.
- Drones may reduce costs, but one cannot rule out the possibility of seeds falling on the wrong spot. Even when they reach the ground many variables can hinder the emergence of seedlings, such as soil composition, animal predation and weed competition.

4. Indian Peafowl

Why in News?

- A Man was recently hit by a peafowl in Kerala after which he died. This incident has turned the spotlight on the increasing population of Indian peafowls in the state.

Highlights:

- The collective name for peacocks is peafowl. The male of the variety is called a peacock and the female peafowl is called a peahen.
- The Indian peacock is also the National Bird of India.
- Peafowl (*Pavo cristatus*) belongs to the Phasianidae family. They are among the largest of all birds that fly. Phasianidae is the pheasant family, a bird family that includes among its members the jungle fowl (from which the domestic chicken is descended), partridge, peacock, pheasant, and quail.

The two most-Recognizable Species of Peafowl are:

- The blue, or Indian, peacock of India and Sri Lanka.
- The green or Javanese, peacock (*P. muticus*) found from Myanmar (Burma) to Java.
- The Indian peafowl is a native of India and some parts of Pakistan and Sri Lanka.
- The species are currently habituated more in central Kerala, followed by southeast and northwest parts of the state.
- At least 19% of the states' area is suitable habitat for this species and this may increase by 40-50% by 2050.
- They are well adapted to living in forest edges and cultivated areas.
- They are a threat to paddy farmers in Kerala. They destroy its seeds and cause man-animal conflict. Agriculture expansion and deforestation have caused other species to 'invade human territory'. The growing population of peafowls signals climate change.

- They are known to grow and thrive in dry conditions. Its Protection Status are IUCN: Least Concern and Wildlife (Protection) Act, 1972: Schedule I.

5. National Tiger Conservation Authority (NTCA)

Why in News:

- The National Tiger Conservation Authority (NTCA) has recently designated the combined areas of the Guru Ghasidas National Park and Tamor Pingla Wildlife Sanctuary as a Tiger Reserve.

Highlights:

- NTCA is a statutory body under the Ministry of Environment, Forests and Climate Change, established in 2005 for strengthening tiger conservation.
- It is located in the northern part of Chhattisgarh, bordering Madhya Pradesh and Jharkhand. Approval was granted under Section 38V(1) of the Wildlife (Protection) Act, 1972. This will be the fourth Tiger Reserve in Chhattisgarh, after the Udanti-Sitanadi, Achanakmar and Indravati Reserves.
- Guru Ghasidas National Park was the last known habitat of the Asiatic cheetah in the country. It connects Jharkhand and Madhya Pradesh and provides a corridor for tigers to move between the Bandhavgarh (Madhya Pradesh) and Palamau Tiger Reserves (Jharkhand). It is named after the Satnami reformist hero of the place, Guru Ghasidas, is the result of the carving of Chhattisgarh from Madhya Pradesh in the year of 2000. It is located in the Koriya district of Chhattisgarh.
- The park has undulating topography and it falls under the Tropical climate zone.
- Flora: The vegetation consists mainly of mixed deciduous forest with teak, sal and bamboo trees.
- **Fauna:** Tiger, Leopard, Chital, Nilgai, Chinkara, Jackal, Sambar, Four-horned Antelope etc.

6. Detoxing Pilot Project

Why in News?

- The Meghalaya Government has recently claimed that a detoxing pilot project has brought the Lukha river back from the dead.

Highlights:

- The Lukha River was considered toxic beyond redemption a decade ago owing to contamination due to acid mine drainage and run-off from the coal mines.

- Phytoremediation method was used to detoxify the river, where Algae was used to remove major toxic contents from the water.
- The pilot project was undertaken under the District Mineral Fund after reports of low pH levels affecting the aquatic life in the river.
- Most living organisms, especially aquatic life, function at the optimal pH range of 6.5 to 8.5.
- pH is a measure of how acidic/basic water is. The range goes from 0 to 14, with 7 being neutral. pHs of less than 7 indicate acidity, whereas a pH of greater than 7 indicates a base. The pH of water is a very important measurement concerning water quality.

Lukha River:

- The Lukha is located in the southern part of east Jaintia Hills of Meghalaya where most of Meghalaya's rat-hole coal mines are located.
- It has become a victim of the unsustainable large-scale mining of coal and limestone, allegedly responsible for the pollution that turns the river its surreal winter hue.
- It receives water from the Lunar river (Wah Lunar) and small streams draining from the Narpuh Reserve Forest and the undulating hills of the area while flowing down.
- The river is mainly fed by monsoon rain and flows in the south-west direction and later takes a southern path after joining the Lunar river near the Gaddum village.
- The river passes via the Sonapur village and then into southern Assam's Barak Valley and ends up in the floodplains of Bangladesh.

7. Heatwaves in India

Why in News?

- Recently, a study has found a spatial shift of heatwaves in India, now occurring in new regions in the country.

Highlights:

- It also added that the eastern and western coasts, which are currently unaffected by heatwaves, will be severely impacted in the future.
- It assessed the monthly, seasonal, decadal and long-term trends in heatwaves in the country from 1951-2016.
- A warming pattern was found over north-western and southern India, while a progressive cooling phase over north-eastern and southwest regions of the country.

- A “spatio-temporal shift” is revealed in the occurrence of heatwave events, with a significantly increasing trend in three prominent heatwave prone regions- north-western, central, and south-central India, with the highest being in west Madhya Pradesh (0.80 events/year).
- Heatwaves have been traditionally associated with UP, Bihar, Delhi and northern parts of Madhya Pradesh.
- Heatwaves were found in southern Madhya Pradesh, Andhra Pradesh, Karnataka and Tamil Nadu, where they would traditionally not take place.
- Increases in heatwaves in Karnataka and Tamil Nadu are particularly significant, and point to increased events in the future.
- A significant decrease in heatwaves over the eastern region, that is Gangetic West Bengal (−0.13 events/year).
- An increasing trend of heatwave days and severe heatwave days was observed in the decade of 2001–2010 as compared to previous decades.
- Two elements that have exacerbated the heatwave conditions in the country are the increase in night time temperatures, which disallows heat discharge at night, and increasing humidity levels. A heatwave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the summer season in the North-Western and South Central parts of India. Heatwaves typically occur between March and June, and in some rare cases even extend till July. India Meteorological Department (IMD) classifies heatwaves according to regions and their temperature ranges.

8. Cicada species

Why in News?

- A new Cicada Species (*Platyomia kohimaensis*) was recently found in the Naga Hills of Nagaland.

Highlights:

- Earlier, two species of Cicadas *Savazana mirabilis* and *Salvazana imperialis* were discovered in Meghalaya.
- Cicadas are hemipteran insects known for their loud, complex and species-specific acoustic signals or songs. Hemipteran insects, also called true bugs, have mouthparts used for piercing and sucking and have two pairs of wings.
- The new cicada species belongs to the *Platyomia radha* group described from the Naga Hills in the eastern Himalayas.

- It is a dusk singing, large-sized cicada that calls for a short window during the evening twilight hours. It timbalises in the form of a continuous and regular cackling.
- Timbal is a sound producing membrane in various insects.
- They are mostly beneficial. They prune mature trees, aerate the soil, and once they die, their bodies serve as an important source of nitrogen for growing trees.
- With their acoustic signatures, they act as indicators of a healthy forest ecosystem.
- Most cicadas are canopy dwellers and are found in natural forests with large trees.
- The generic diversity of cicadas in India and Bangladesh ranks the highest in the world, followed by China. Large-scale clearing of natural forest land into human settlement and agricultural fields, along with burning of forests is behind the shrinking distribution of Cicada. Since it is considered a delicacy and fetches a good price, its unabated capturing and killing during its mass emergence poses a great threat to its survival.

9. COP26 Climate Conference and Why it is important

Why in News?

- The UK will host the COP 26 UN Climate Change Conference from October 31 to November 12.

Conference of Parties (CoP):

- The CoP comes under the United Nations Climate Change Framework Convention (UNFCCC) which was formed in 1994.
- The UNFCCC was established to work towards “stabilisation of greenhouse gas concentrations in the atmosphere.”
- It laid out a list of responsibilities for the member states which included:
 - Formulating measures to mitigate climate change
 - Cooperating in preparing for adaptation to the impact of climate change
 - Promoting education, training and public awareness related to climate change
- The UNFCCC has 198 parties including India, China and the USA. COP members have been meeting every year since 1995.

COP1 to COP25: Key Takeaways

- **COP1:** The first conference was held in 1995 in Berlin.
- **COP3:** It was held in Kyoto, Japan, in 1997, the famous Kyoto Protocol (w.e.f. 2005) was adopted. It commits the member states to pursue limitation or reduction of greenhouse Gas Emissions.

- **COP8:** India hosted the eighth COP in 2002 in New Delhi. It laid out several measures including, ‘strengthening of technology transfer... in all relevant sectors, including energy, transport and R&D, and the strengthening of institutions for sustainable development.
- **COP21:** it is one of the most important that took place in 2015, in Paris, France. Here countries agreed to work together to ‘limit global warming to well below 2, preferably at 1.5 degrees Celsius, compared to pre-industrial levels.’

Significance of COP26:

- The event will see leaders from more than 190 countries, thousands of negotiators, researchers and citizens coming together to strengthen a global response to the threat of climate change.
- It is a pivotal movement for the world to come together and accelerate the climate action plan after the COVID pandemic.

COP26 Goals:

- According to the UNFCCC, COP26 will work towards four goals:
- Secure global net-zero by mid-century and keep 1.5 degrees within reach
- The UNFCCC recommends that countries ‘accelerate the phase-out of coal, curtail deforestation, speed up the switch to electric vehicles and encourage investment in renewables’ to meet this goal.
- Adapt to protect communities and natural habitats
- Countries will work together to ‘protect and restore ecosystems and build defences, warning systems and resilient infrastructure and agriculture to avoid loss of homes, livelihoods and even lives.’

Mobilise Finance:

- To deliver on first two goals, developed countries must make good on their promise to mobilise at least \$100bn in climate finance per year by 2020.
- Work together to deliver
- Another important task at the COP26 is to ‘finalise the Paris Rulebook’. Leaders will work together to frame a list of detailed rules that will help fulfil the Paris Agreement.

What India could do to Reach its Targets?

- Update NDCs: It is time for India to update its Nationally Determined Contributions or NDCs. (NDCs detail the various efforts taken by each country to reduce the national emissions)

- **Effective Planning:** Sector by sector plans are needed to bring about development. We need to decarbonise the electricity, transport sector and start looking at carbon per passenger mile.
- **Energy Transition:** Aggressively figure out how to transition our coal sector
- **Robust Legal Framework:** India also needs to ramp up the legal and institutional framework of Climate Change.

10. Allium Negianum

Why in News?

- A newly discovered plant Allium negianum, in Uttarakhand has recently been confirmed to belong to the genus that includes many staple foods such as onion and garlic.

Highlights:

- Allium is one of the largest genera in Amaryllidaceae. A staple food makes up the dominant part of a population's diet.
- They are eaten regularly—even daily—and supply a major proportion of a person's energy and nutritional needs.
- It is a family of herbaceous (connected with plants that have soft stems), mainly perennial and bulbous Flowering Plants.
- The genus Allium contains about 1,100 species worldwide, including many staple foods like onion, garlic, scallion, shallot and chives.
- The genus naturally occurs in dry seasons in the northern hemisphere and South Africa but the newly-identified species is restricted to the region of the western Himalaya.
- The scientific name Allium negianum honours the late Dr. Kuldeep Singh Negi, an eminent explorer and Allium collector from India. They are useful for various medicinal purposes.
- The Indian Allium is distributed in different eco-geographical areas of the temperate and alpine regions of Himalayas.
- The Indian Himalayan region has two distinct centers of Allium diversity, the Western Himalaya (over 85% of total diversity) and the Eastern Himalaya (6%), covering the alpine-sub temperate region.
- It grows at 3,000 to 4,800 m above sea level and can be found along open grassy meadows, sandy soils along rivers, and streams forming in snow pasture lands along alpine meadows. Indiscriminate harvesting of its leaves and bulbs for seasoning may pose a threat to its wild populations.

11. Double-Dip

Why in News?

- The National Oceanic and Atmospheric Administration (NOAA, an American scientific agency) has recently declared that La Niña has re-developed. Consecutive La Niña is called Double-Dip.

Highlights:

- La Nina is one part of the El Nino Southern Oscillation (ENSO) cycle, which is characterized by opposing warm and cool phases of oceanic and atmospheric conditions in the tropical Pacific Ocean.
- Consecutive La Ninas following a transition through ENSO neutral conditions are not uncommon and can be referred to as a “Double-Dip.”
- In 2020, La Nina developed during the month of August and then dissipated in April 2021 as ENSO-neutral Conditions Returned. For the upcoming winter season, which extends from December 2021 through February 2022, there is an 87% chance of La Nina.
- Previous La Ninas occurred during the winter of 2020-2021 and 2017-2018, and an El Nino developed in 2018-2019. When neither climate pattern is present, ENSO is neutral and does not influence global climate patterns.
- ENSO is a periodic fluctuation in sea surface temperature (El Niño) and the air pressure of the overlying atmosphere (Southern Oscillation) across the equatorial Pacific Ocean.
- El Nino and La Nina are complex weather patterns resulting from variations in ocean temperatures in the Equatorial Pacific Region. They are opposite phases of what is known as the ENSO cycle. El Nino and La Nina episodes typically last nine to 12 months, but some prolonged events may last for years.

12. Georissa Mawsmiensis

Why in News?

- A micro snail species named *Georissa mawsmiensis* has recently been discovered in Mawsmi Cave in Meghalaya.

Highlights:

- The new species is unique from *Georissa sarrita* (a member of the same genus discovered in 1851) in its shell morphology, starting from shell size variation to the presence of four very prominent spiral striations (a minute groove, scratch) on body whorls of the shell.

- These spiral striations, which are counted from the suture to aperture in apertural view, are seven in *Georissa sarrita*.
- It is found in soil or subterranean habitats in lowland tropical forest as well as high altitude evergreen forests or on rock surfaces rich in calcium.
- The members of the *Georissa* genus are widely distributed across and reported from Africa, Asia, and the Pacific. However, they are confined to microhabitats consisting of limestone caves or karst landscapes formed by the dissolution of limestone.
- The high tourist influx may pose a threat to this micro snail species including other cave faunas.
- Mawsmai Cave is situated in the small village of Mawsmai, around four kilometres from Cherrapunjee (Sohra) in the East Khasi Hills district of Meghalaya.
- The term 'Mawsmai' means 'Oath Stone' in the Khasi language. The Khasi people use the local term 'Krem' for the cave.
- Mawsmai cave is located at an altitude of 1,195 metres above sea level and is indirectly influenced by the streams of the Kynshi river originating from the East Khasi Hills.
- The cave is famous for its fossils, some which you can spot if you spend some time peering at the walls and Formations Inside.

13. Debrigarh Wildlife Sanctuary

Why in News?

- The Odisha Government has recently decided to relocate around 420 families from four zero-connectivity villages in Debrigarh Wildlife Sanctuary.

Highlights:

- The relocation is aimed at reducing man-animal conflict and providing better living conditions to the displaced families.
- It is situated in the Bargarh district of Odisha near Hirakud dam (Mahanadi River) and covers an area of 346.91 square kilometres.
- It is bounded on the east and north by the huge Hirakud reservoir.
- It was declared as a wildlife sanctuary on 8th February 1985.
- It is an important site for in situ conservation of wildlife and its habitat in the state of Odisha
- Its Flora and Fauna are Dry deciduous forests, Four-horned antelope, Indian leopard, Indian elephant, sambar, chital, gaur, etc.

14. Gene Editing Technique

Why in News?

- The proposal for Indian regulators to consider a new gene editing technique has been pending with the Genetic Engineering Appraisal Committee for almost two years.

Highlights:

- Genome editing (also called gene editing) is a group of technologies that give scientists the ability to change an organism's Deoxy-Ribonucleic Acid (DNA).
- These technologies allow genetic material to be added, removed, or altered at particular locations in the genome. The Indian Agricultural Research Institute (IARI) has now moved to newer technologies such as Site Directed Nuclease (SDN) 1 and 2.
- New technique aims to bring precision and efficiency into the breeding process using gene editing tools such as CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats), whose developers won the Nobel Prize for Chemistry in 2020.
- SDN genome editing involves the use of different DNA-cutting enzymes (nucleases) that are directed to cut the DNA at a predetermined location by a range of different DNA Binding Systems.
- After the cut is made, the cell's own DNA repair mechanism recognizes the break and repairs the damage, using one of two pathways that are naturally present in cells.
- It involves the use of gene editing tools to directly tweak (improve\change) the plant's own genes instead.
- It would allow plants to be genetically modified without the need for conventional transgenic technology.
- Significance of New Techniques:
 - In this case, you are just tweaking a gene that is already there in the plant, without bringing in any gene from outside.
 - When a protein comes from an outside organism, then you need to test for safety. But in this case, this protein is right there in the plant, and is being changed a little bit, just as nature does through mutation.
 - It is much faster and far more precise than natural mutation or conventional breeding methods which involve trial and error and multiple breeding cycles. It is potentially a new Green Revolution.

15. 'Net-Zero' carbon emitter

Why in News?

- Indian Railways (IR) has recently announced that it is likely to become world's first 'net-zero' carbon emitter by 2030.

Highlights:

- IR is taking a multi-pronged approach to go green and decarbonise - from increasing its sourcing of Renewable Energy (RE) to electrifying its traction network and reducing its Energy Consumption. It is the world's fourth largest railway network in terms of size. It is one of the largest electricity consumers in the country.
- Transports 24 million passengers every day across the subcontinent on 13,000 trains covering approximately 67,956 km.
- Freight Services:** 3.3 million tonnes of freight per day, and thus the fuel requirements are massive. Contribution in Total Emissions: India's transport sector contributes to 12% of the country's greenhouse gas emissions with the railways accounting for about 4% of these emissions. Potential of Emissions Reduction: The Indian Railways can raise the official target of 50% freight share by 2030, up from its current share of 33%. By shifting freight to rail and optimising truck use, India can reduce logistics costs from 14-10% of Gross Domestic Product and carbon dioxide emissions by 70% by 2050 compared to a business-as-usual scenario.

Initiatives taken by Indian Railways:

- Increased the Amount of Freight: Indian Railways to increase the amount of freight moved by it from about 35% in 2015 to 45% by 2030 to reduce overall emissions from transportation.
- Complete Electrification:** Complete electrification of Indian Railways is targeted by financial year 2024. It will be the world's largest 100% electrified rail transportation system by then.
- Use of Solar Power:** Plans to install 20 GigaWatts (GW) of solar for both traction loads and non-traction loads. Built a 1.7-MW solar power plant in Bina, Madhya Pradesh, in July 2020. It is the first solar energy plant in the world to directly power railway overhead lines, from which locomotives draw traction power. A 2.5-MW solar project in Diwana, Haryana. Work on a third pilot with a capacity of 50 MW has begun in Bhilai (Chhattisgarh). A 16-kW solar power plant has been installed as platform shelter at the Sahibabad Railway Station.

Net-Zero Emissions:

- It refers to achieving an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere. First, human-caused emissions (like those from fossil-fueled vehicles and factories) should be reduced as close to zero as possible.
- Second, any remaining GHGs should be balanced with an equivalent amount of carbon removal, for Example by Restoring Forests.

16. Kaziranga National Park

Why in News?

- The Central Empowered Committee (CEC) has recently asked the Assam government to take action on illegal construction in the identified wildlife corridors of the Kaziranga National Park and Tiger Reserve.

Highlights:

- It is located in the State of Assam and covers 42,996 Hectare (ha). It is the single largest undisturbed and representative area in the Brahmaputra Valley floodplain.
- It was declared as a National Park in 1974.
- It has been declared a tiger reserve since 2007.

International Status:

- It was declared a UNESCO World Heritage Site in 1985.
- It is recognized as an Important Bird Area by BirdLife International.
- It is the home of the world's most one-horned rhinos.
- Pobitora Wildlife Sanctuary has the highest density of one-horned rhinos in the world and second highest number of Rhinos in Assam after Kaziranga National Park.
- Much of the focus of conservation efforts in Kaziranga are focused on the 'big four' species - Rhino, Elephant, Royal Bengal tiger and Asiatic water buffalo.
- The 2018 census had yielded 2,413 rhinos and approximately 1,100 elephants.
- As per the figures of tiger census conducted in 2014, Kaziranga had the third highest population in India after Jim Corbett National Park in Uttarakhand and Bandipur National Park in Karnataka.
- Kaziranga is also home to 9 of the 14 species of primates found in the Indian subcontinent.

17. Why India shouldn't sign on to net zero

Why in News?

- The recent report of the Intergovernmental Panel on Climate Change made it clear that limiting the increase in the world's average temperature from pre-industrial levels to those agreed in the Paris Agreement requires global cumulative emissions of carbon dioxide to be capped at the global carbon budget.
- Understanding why reaching net zero by itself is irrelevant to forestalling dangerous warming:
- The promise of when you will turn off the tap does not guarantee that you will draw only a specified quantity of water.
- The top three emitters of the world — China, the U.S. and the European Union — even after taking account of their net zero commitments and their enhanced emission reduction commitments for 2030, will emit more than 500 billion tonnes of carbon dioxide before net zero.
- These three alone will exceed the limit of about 500 billion tonnes from 2020 onwards, for even odds of keeping global temperature increase below 1.5°C.

Issues with 'net zero' Target:

- Neither the Paris Agreement nor climate science requires that net zero be reached individually by countries by 2050, the former requiring only global achievement of this goal “in the second half of the century”.
- Claims that the world “must” reach specific goals by 2030 or 2050 are the product of specific economic models for climate action.
- They front-load emission reduction requirements on developing countries, despite their already low emissions, to allow the developed world to backload its own, buying time for its own transition. These stringent limits on future cumulative emissions post 2020, amounting to less than a fifth of the total global carbon budget, is the result of its considerable over-appropriation in the past by the global North.
- Promises of net zero in their current form perpetuate this hugely disproportionate appropriation of a global commons, while continuing to place humanity in harm's way.

Suggestions for India:

- India is responsible for no more than 4.37% cumulative emissions of carbon dioxide since the pre-industrial era, even though it is home to more than a sixth of humanity.

- India's per capita emissions are less than half the world average, less than one-eighth of the U.S.'s. For India to declare net zero now is to accede to the further over-appropriation of the Global Carbon budget by a few.
- India's contribution to global emissions, in both stock and flow, is so disproportionately low that any sacrifice on its part can do nothing to save the world.
- India, in enlightened self-interest, must now stake its claim to a fair share of the global Carbon Budget.
- Technology transfer and financial support, together with "negative emissions", if the latter succeeds, can compensate for the loss of the past.
- Such a claim by India provides it greater, and much-needed long-term options.
- It enables the responsible use of coal, its major fossil fuel resource, and oil and gas, to bootstrap itself out of lower-middle-income economy status and eradicate poverty, hunger and malnutrition for good.
- India's resource-strapped small industries sector needs expansion and modernisation.
- The agriculture sector, the second-largest source of greenhouse gas emissions for India after energy, needs to double its productivity and farmers' incomes and build resilience.
- Infrastructure for climate resilience in general is critical to future adaptation to climate change.
- All of these will require at least the limited fossil fuel resources made available through a fair share of the carbon budget.

3. POLITY & GOVERNANCE

1. Marathon Month for the Supreme Court Collegium

Why in News?

- In a month of marathon recommendations to fill up long-pending vacancies in the High Courts, the Supreme Court Collegium led by Chief Justice of India N.V. Ramana has suggested the names of 16 Judicial Officers and advocates to the government for Appointment as judges in four different High Courts.

What is Collegium System?

- It is the system of appointment and transfer of judges that has evolved through judgments of the SC, and not by an Act of Parliament or by a provision of the Constitution.
- The SC collegium is headed by the CJI and comprises four other senior most judges of the court. A HC collegium is led by its Chief Justice and four other senior most judges of that court. Names recommended for appointment by a HC collegium reaches the government only after approval by the CJI and the SC collegium.
- Judges of the higher judiciary are appointed only through the collegium system and the government has a role only after names have been decided by the collegium.
- The government's role is limited to getting an inquiry conducted by the Intelligence Bureau (IB) if a lawyer is to be elevated as a judge in a High Court or the Supreme Court.
 - ✓ **Intelligence Bureau (IB):** It is a reputed and established intelligence agency. It is authoritatively controlled by the Ministry of Home Affairs.
 - ✓ It can also raise objections and seek clarifications regarding the collegium's choices, but if the collegium reiterates the same names, the Government is bound, under Constitution Bench judgments, to appoint them as Judges.

Evolution of the Collegium System:

- **First Judges Case (1981):**
 - ✓ It declared that the "primacy" of the Chief Justice of India (CJI)s recommendation on Judicial Appointments and transfers can be refused for "cogent reasons."
 - ✓ The Ruling gave the Executive primacy over the Judiciary in judicial appointments for the next 12 Years.
- **Second Judges Case (1993):**
 - ✓ SC introduced the Collegium system, holding that "consultation" really meant "concurrence".

✓ It added that it was not the CJI's individual opinion, but an institutional opinion formed in Consultation with the two senior-most judges in the SC.

• **Third Judges Case (1998):**

✓ SC on President's reference expanded the Collegium to a five-member body, comprising the CJI and four of his senior-most colleagues.

Procedure for Various Judicial Appointments:

• **For CJI:**

- ✓ The President of India appoints the CJI and the other SC judges.
- ✓ As far as the CJI is concerned, the outgoing CJI recommends his successor.
- ✓ In practice, it has been strictly by seniority ever since the supersession controversy of the 1970s.

• **For SC Judges:**

- ✓ For other judges of the SC, the proposal is initiated by the CJI.
- ✓ The CJI consults the rest of the Collegium members, as well as the senior-most judge of the court hailing from the High Court to which the recommended person belongs.
- ✓ The consultees must record their opinions in writing and it should form part of the file.
- ✓ The Collegium sends the recommendation to the Law Minister, who forwards it to the Prime Minister to advise the President.

• **For Chief Justice of High Courts:**

- ✓ The Chief Justice of High Court is appointed as per the policy of having Chief Justices from outside the respective States.
- ✓ The Collegium takes the call on the elevation.
- ✓ High Court judges are recommended by a Collegium comprising the CJI and two senior-most judges.
- ✓ The proposal, however, is initiated by the outgoing Chief Justice of the High Court concerned in consultation with two senior-most colleagues.
- ✓ The recommendation is sent to the Chief Minister, who advises the Governor to send the proposal to the Union Law Minister.

Criticism of the Collegium System:

- Opaqueness and a lack of transparency.
- Scope for Nepotism.
- Embroilment in public Controversies.
- Overlooks several talented junior judges and advocates.

Attempts to reform the Appointment System:

- The attempt made to replace it by a 'National Judicial Appointments Commission' was struck down by the court in 2015 on the ground that it posed a threat to the independence of the judiciary.

Related Constitutional Provisions:

- Article 124(2) of the Indian Constitution provides that the Judges of the Supreme Court are appointed by the President after consultation with such a number of the Judges of the Supreme Court and of the High Courts in the States as the President may deem necessary for the purpose.
- Article 217 of the Indian Constitution states that the Judge of a High Court shall be appointed by the President consultation with the Chief Justice of India, the Governor of the State, and, in the case of appointment of a Judge other than the Chief Justice, the Chief Justice of the High Court.

Way Forward:

- Filling up of vacancies is a continuous and collaborative process involving the executive and the judiciary, and there cannot be a time frame for it. However, it is time to think of a permanent, independent body to institutionalize the process with adequate safeguards to preserve the Judiciary's Independence Guaranteeing judicial primacy but not judicial exclusivity. It should ensure independence, reflect diversity, demonstrate professional competence and integrity.
- Instead of selecting the number of judges required against a certain number of vacancies, the collegium must provide a panel of possible names to the President to appoint in order of preference and other Valid Criteria.

2. More time to Renew FCRA Registration

Why in News?

- The Ministry of Home Affairs (MHA) has extended the deadline till December 31 for NGOs to apply for renewal of their Foreign Contribution (Regulation) Act (FCRA) registration certificates which is mandatory for associations and NGOs to receive foreign funds.

About the News:

- The Ministry had earlier given a relief up to September 30 to NGOs whose registration was expiring between September 29, 2020-September 30, 2021.

- The latest order says the deadline for NGOs certificates or registration expiring between September 29, 2020 to December 31, 2021 could apply for renewal till December 31, 2021.
- Registered NGOs can receive foreign contribution for five purposes – social, educational, Religious, Economic and Cultural. The FCRA registration is renewed every five years.
- The NGOs also have to compulsorily open an account with the SBI in Delhi to receive foreign contribution.
- Amid a slew of amendments to the FCRA, 2010 that the Ministry introduced in 2020 in Parliament, it made form FC6C – an authorisation certificate mandatory to operationalise a bank account with SBI's main branch in Delhi, another compulsory requirement. There are 22,762 FCRA registered NGOs.

About Foreign Contribution (Regulation) Act (FCRA), 2010:

- Foreign funding of voluntary organizations in India is regulated under FCRA act which is implemented by the Ministry of Home Affairs.
- The Act ensures that the recipients of foreign contributions adhere to the stated purpose for which such contribution has been obtained.
- Under the Act, organisations are required to register themselves Every Five Years.

About Non-Governmental Organisations (NGO):

- Worldwide, the term 'NGO' is used to describe a body that is neither part of a government nor a conventional for-profit business organisation.
- NGOs are groups of ordinary citizens that are involved in a wide range of activities that may have charitable, social, political, religious or other interests.
- NGOs are helpful in Implementing Government Schemes at the Grassroots.
- In India, NGOs can be registered under a plethora of Acts such as the Indian Societies Registration Act, 1860, Religious Endowments Act, 1863, Indian Trusts Act, etc.
- India has possibly the largest number of active NGOs in the world; a study commissioned by the government put the number of NGOs in 2009 at 33 lakh.
- That was one NGO for less than 400 Indians, and many times the number of primary schools and primary health centres.
- Ministries such as Health and Family Welfare, Human Resource Department, etc provides funding to a handful of NGOs.
- NGOs also receive funds from abroad, if they are registered with the Home Ministry under the Foreign Contribution (Regulation) Act (FCRA).
- Without this, no NGO can receive cash or anything of value higher than Rs 25,000.

Controversies Related to FCRA:

- The FCRA regulates the receipt of funding from sources outside of India to NGOs working in India. It prohibits the receipt of foreign contribution “for any activities detrimental to the national interest”.
- The Act also held that the government can refuse permission if it believes that the donation to the NGO will adversely affect “public interest” or the “economic interest of the state”. However, there is no clear guidance on what constitutes “public interest”.
- The FCRA restrictions have serious consequences on both the rights to free speech and freedom of association under Articles 19(1)(a) and 19(1)(c) of the Constitution. The right to free speech is affected in Two Ways:
 - ✓ By allowing only some political groups to receive foreign donations and disallowing some others, can induce biases in favour of the government.
 - ✓ NGOs need to tread carefully when they criticise the regime, knowing that too much criticism could cost their Survival.
- FCRA norms can reduce Critical voices by declaring them to be against the public interest. This chilling effect on free speech can lead to self-censorship.
- Similar to this on unclear guidelines on public interest, in *Shreya Singhal v. Union of India* (2015), the Supreme Court (SC) struck down Section 66A of the Information Technology Act. The SC held that the Act could be used in a manner that has a chilling effect on free speech.
- Besides, given that the right to freedom of association is part of the Universal Declaration of Human Rights (Article 20), a violation of this right also constitutes a human rights violation.
- In April 2016, the UN Special Rapporteurs on the Rights to Freedom of Peaceful Assembly and of Association undertook a legal analysis of the FCRA, 2010.
 - ✓ It stated that restrictions in the name of “public interest” and “economic interest” as invoked under the FCRA failed the test of “legitimate restrictions”.
 - ✓ The terms were too vague and gave the state excessive discretionary powers to apply the provision in an Arbitrary Manner.
 - ✓ In this context, though it is necessary to regulate corrupt NGOs, there needs to be clarity on terms like Public Interest.

3. CJI for Forming Special Panels to Probe Atrocities by Police

Why in News?

- Chief Justice of India (CJI) N.V. Ramana said he was in favour of forming standing committees headed by the Chief Justices of the High Courts to investigate complaints received from the common man of “atrocities” committed by the bureaucracy, especially police officers, in the country.

About the Issue:

- The CJI’s oral observation comes even as police officers are in the spotlight for committing serious crimes. Recently, the police officers in Gorakhpur in Uttar Pradesh have been accused of causing the death of a businessman during a raid in a hotel.
- In Tamil Nadu, the CBI had charge-sheeted nine policemen for the custodial deaths of the father-son duo, P. Jayaraj and J. Benicks. There have been instances in which district administration officers were recorded on video physically manhandling citizens during the lockdown.
- The observation came when the court was reserving judgment on petitions filed by suspended Additional Director General of Police Gurjinder Pal Singh in Chhattisgarh. He had sought protection from arrest in various criminal cases, including sedition, extortion and criminal Intimidation, arraigned against him by the Current Government.

Data Related to Violence in Custody:

- According to National Crime Records Bureau (NCRB) data, between 2001 and 2018, only 26 policemen were convicted of custodial violence despite 1,727 such deaths being recorded in India.
- Only 4.3% of the 70 deaths in 2018 were attributed to injuries during custody due to physical assault by police.
- Except in Uttar Pradesh, Madhya Pradesh, Chhattisgarh and Odisha, no policeman was convicted for such Deaths across the country.
- Apart from Custodial Deaths, more than 2,000 human rights violation cases were also recorded against the police between 2000 and 2018. And only 344 policemen were convicted in those Cases.

Reasons for Low Conviction:

- Most of Custodial Deaths were attributed to reasons other than custodial torture, which included suicide and death in hospitals during treatment.

Reasons Behind Custodial Violence:

- **Absence of Strong Legislation:** India does not have an anti-torture legislation and is yet to criminalise custodial violence, while action against culpable officials remains illusory.
- **Institutional Challenges:** The entire prison system is inherently opaque giving less room to transparency.
- **Excessive Force:** The use of excessive force including torture to target marginalised communities and control people participating in movements or propagating ideologies which the state perceives as opposed to its stature.
- **Not Adhering to International Standard:** Although India has signed the United Nations Convention against Torture in 1997 its ratification still remains.
 - ✓ While Signing only indicates the country's intention to meet the obligations set out in the treaty, Ratification, on the other hand, entails bringing in laws and mechanisms to fulfil the commitments.

Constitutional and Legal Provisions:

- Protection from torture is a fundamental right enshrined under Article 21 (Right to Life) of the Indian constitution. The right to counsel is also a fundamental right under Article 22(1) of the India constitution.
- Section 41 of Criminal Procedure Code (CrPC) was amended in 2009 to include safeguards under 41A, 41B, 41C and 41D, so that arrests and detentions for interrogation have reasonable grounds and documented procedures, arrests are made transparent to family, Friends and Public, and there is Protection through legal representation.

Way Forward:

- **India should ratify the UN Convention Against Torture:** It will mandate a systematic review of colonial rules, methods, practices and arrangements for the custody and treatment of persons subjected to any form of arrest, detention or imprisonment.
- **Police Reforms:** Guidelines should also be formulated on educating and training officials involved in the cases involving deprivation of liberty because torture cannot be effectively prevented till the senior police wisely anticipate the gravity of such issues and clear reorientation is devised from present practices.
- **Access to Prison:** Unrestricted and regular access to independent and qualified persons to places of detention for inspection should also be allowed. CCTV cameras should be installed in police stations including in the interrogation rooms.

- Surprise inspections by Non-Official Visitors (NOVs) should also be made mandatory which would act as a preventive measures against custodial torture which has also been suggested by Supreme Court in its landmark judgment in the DK Basu Case in 2015.
- **Implementation of Law Commission of India's 273rd Report:** The report recommends that those accused of committing custodial torture – be it policemen, military and paramilitary personnel – should be criminally prosecuted instead of facing mere administrative action establishing an effective deterrent.

4. Mamata wins Bhabanipur seat with a record margin

Why in News?

- West Bengal Chief Minister Mamata Banerjee won the byelection in the Bhabanipur Assembly constituency and claims to continue as the CM of West Bengal.

About the News:

- Earlier in May 2021, she contested from Nandigram and lost to the BJP's Suwendu Adhikari by a margin of 1,956 votes. She was unanimously elected Chief Minister by the Trinamool Congress Legislature Party in May 2021 as the party had won majority of seats in West Bengal. The present victory makes Ms. Banerjee a member of the West Bengal Legislative Assembly and will allow her to continue as Chief Minister of West Bengal.

What does the Constitution say?

- **Article 164** of the Constitution allows a non-legislator to occupy a post in the council of ministers, including the office of the chief minister for six months.
- **Article 171** of the Constitution says the governor can nominate eminent persons from the field for literature, science, art, cooperative movement and social service.
- And, if governor nominates somebody to the legislative council, his/her decision cannot be challenged in the court, at least as of the precedent right now.
- Since West Bengal has no legislative council Ms. Mamata was forced to contest and win in the election within the six months of time.

What is the issue on Nominating a Member to the Council?

- **Section 151A of Representation of the People Act 1951** puts a bar on the governor's discretionary power to nominate a person to the legislative council.
- It says election or nomination to vacant seats in the legislative council cannot be done "if the remainder of the term of a member in relation to a vacancy is less than one year".

What if Ms. Mamata has lost the Election?

- Ms. Mamata cannot continue unless elected to the legislature of West Bengal.
- Technically, she can be reappointed as the West Bengal chief minister again after she resigns a day before the 6 months expiry and takes oath afresh.
- But, if she decides to resign and takes oath afresh, there could be another obstacle. This relates to a case in Punjab, where Tej Parkash Singh of the Congress was appointed a minister in 1995 and was reappointed at the expiry of six months' period in 1996 without getting elected to state assembly.
- Litigation followed in 2001, the Supreme Court declared the resign-and-reappoint bid as “improper, undemocratic, invalid and Unconstitutional”.
- This judgment did not have a bearing on Tej Parkash Singh but may come in the way of Ms. Mamata if she takes the Same Route.

5. No info on 2018 Plan to Collect OBC Data

Why in News?

- The Office of the Registrar General of India (RGI) has said that deliberations and file notings regarding the Central government's announcement in 2018 to collect data on Other Backward Classes (OBC) as part of Census 2021, is not available with its office.

About the News:

- On August 31, 2018, the Ministry of Home Affairs (MHA) had announced that OBC data will be collected for the first time during the next Census exercise.
- The first phase of 2021 Census — The House listing and Housing Census that was to be conducted along with the update of the National Population Register (NPR) from April 1, 2020 — has been indefinitely postponed due to the COVID-19 pandemic.
- In response to the RTI application pertaining to the deliberations that took place in RGI's office before the announcement in 2018 to collect data on OBCs was made, the office replied “the information sought in the RTI application is not available with the undersigned.”
- The reply added, it may be informed that the Office of the RGI in MHA is conducting decennial population Census since 1951 in which it collects and publishes data on various socio-demographic profiles of the people of India including those of the notified Scheduled Castes (SCs) and Scheduled Tribes (STs) of all States and Union Territories.

- The data on the castes/communities/OBCs, other than the notified SCs and STs are not collected in Census. Centre filed an affidavit in the Supreme Court on September 23 where it ruled out conducting a Socio-Economic Caste Census (SECC), stating that caste census was unfeasible, “Administratively Difficult and Cumbersome”.

Why Caste Census is Difficult?

- SECC that was first conducted in 2011 and collected data of 130 crore Indians threw up 46 lakh different caste names whereas the total number of castes as per the last caste census of 1931 was 4,147 at the National Level. Owing to the flaws in the data set, Government has refused to make public even the raw caste data of the SECC-2011. The SECC-2011 collected data of all castes and not only OBCs. There are separate OBC lists at the State-level and the Centre for reservation in Government Jobs and Education.

What is a Census?

- The origin of the Census in India goes back to the colonial exercise of 1881.
- Census has evolved and been used by the government, policymakers, academics, and others to capture the Indian population, access resources, map social change, delimitation exercise, etc.
- However, as early as the 1940s, W.W.M. Yeatts, Census Commissioner for India for the 1941 Census, had pointed out that “the census is a large, immensely powerful, but blunt Instrument unsuited for specialized Inquiry.”

What is SECC 2011?

- The Socio-Economic Caste Census of 2011 was a major exercise to obtain data about the socio-economic status of various communities.
- It had two components: a survey of the rural and urban households and ranking of these households based on pre-set parameters, and a caste census.
- However, only the details of the economic conditions of the people in rural and urban households were released. The caste data has not been released till now.
- SECC 2011 was conducted by three separate authorities but under the overall coordination of Department of Rural Development in the Government of India.
 - ✓ Census in Rural Area has been conducted by the Department of Rural Development (DoRD). Census in Urban areas is under the administrative jurisdiction of the Ministry of Housing and Urban Poverty Alleviation (MoHUPA).
 - ✓ Caste Census is under the administrative control of Ministry of Home Affairs: Registrar General of India (RGI) and Census Commissioner of India.

Difference between Census & SECC:

- The Census provides a portrait of the Indian population, while the SECC is a tool to identify beneficiaries of state support.
- Since the Census falls under the Census Act of 1948, all data are considered confidential, whereas all the personal information given in the SECC is open for use by Government Departments to grant and/or restrict benefits to Households.

How have caste details been collected so far?

- While SC/ST details are collected as part of the census, details of other castes are not collected by the enumerators. The main method is by self-declaration to the enumerator.
- So far, backward classes commissions in various States have been conducting their own counts to ascertain the population of Backward Castes.

What kind of caste data is Published in the Census?

- Every Census in independent India from 1951 to 2011 has published data on Scheduled Castes and Scheduled Tribes, but not on other castes. Before that, every Census until 1931 had data on caste.

Pros of Caste Census:

- The precise number of the population of each caste would help tailor the reservation policy to ensure Equitable Representation of all of them.

Concerns Associated:

- There is a possibility that it will lead to heartburn among some sections and spawn demands for larger or Separate Quotas. It has been alleged that the mere act of labelling persons as belonging to a caste tends to Perpetuate the System.

6. Government moots Easier Clearance for Forest Land Use

Why in News?

- The Government has proposed absolving agencies involved in national security projects and border Infrastructure projects from obtaining prior forest clearance from the Centre as part of Amendments to the existing Forest Conservation Act (FCA).

About the News:

- The proposed amendment is part of a larger rationalising of existing forest laws. The document is open to public discussion for 15 days after which it could be readied for Cabinet and Parliamentary approval.

- There is also a plan in the document that is now available on the MoEF website, to exempt land acquired before 1980 — before the FCA came into effect — by public sector bodies such as the Railways. Currently, the document notes, there was “strong resentment” among several ministries on how the Act was being interpreted over the right of way of railways, highways.
- As of today a landholding agency (Rail, NHAI, PWD, etc) is required to take approval under the Act as well as pay stipulated compensatory levies such as Net Present Value (NPV), Compensatory Afforestation (CA), etc. for use of such land which was originally been acquired for non-forest purposes.

About the Diversion of Forest Land:

- Diversion of forest land in India is governed by the provisions under Forest (Conservation) Act, 1980 (FCA).
- As per the FCA, any diversion of land for non-forest purposes has to be pre-approved by the Advisory Committee instituted under the Ministry of Environment, Forest and Climate Change (MoEFCC).
- Proposals seeking diversion of forest land up to 40 hectares are processed by regional offices of MoEFCC under the instituted Regional Empowered Committees (REC).
- Proposals that pertain to diversion of land greater than 40 hectares are sent directly to the central ministry.

What about the Local Communities?

- To recognize the rights of local communities whose livelihoods are inextricably linked to the forest lands they inhabit, the central government enacted the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, more commonly known as the Forest Rights Act (FRA).
- The Act aims to protect the marginalised socio-economic class of citizens and balance the right to environment with their right to life and livelihood.

About Forests (Conservation) Act, 1980:

- Forest (Conservation) Act was enacted for providing a higher level of protection to forests and to regulate diversion of forest lands for non-forestry purposes.
- The term “forest land” mentioned in the Act refers to the reserved forest, protected forest, or any area recorded as forest in the government records. The term “tree” will have the same meaning as defined in the Indian Forest Act 1927.
- The Act extends to the whole of India except the UT of Jammu and Kashmir (J&K).

- As per the Forest (Conservation) Act, 1980 Prior permission of the Central Government is essential for De-reservation/ Diversion of forest land for non-forestry purposes.
- The Act has made ample provisions to check deforestation and encourage afforestation of non-forest areas.
- This act put certain conditions on the user(s) that need to deposit the required amount to undertake compensatory afforestation for mitigate the negative impact of forest land diversion.
- The amended Act (1988) prohibits the lease of forest land to anybody other than the government. It enhances conservation, plantation and increase of forest cover to an average of 30%.

Amended Forest Act, 1992:

- The Act made provision for allowing some non-forest activities in forests without cutting trees with prior approval of the Central government. These activities include the setting of transmission lines, seismic surveys, exploration, drilling, and hydroelectric projects.
- Wildlife sanctuaries, National Parks, etc. are totally prohibited for any exploration or survey without prior approval of the Central government even if no tree felling is involved.
- Cultivation of tea, coffee, spices, rubber, mulberry for rearing silkworms, and cash crops are included under non-forestry activities and are not allowed in reserve forests.
- Mining is a non-forestry activity and prior approval of the Central government is mandatory.
- Even the cultivation of fruit-bearing trees, oil yielding plants, or medicinal plants in the forest area needs to be first approved to maintain the balance in the ecology of the forest.

What is Forest Cover and Forest Area?

- Forest cover includes land that is larger than 0.01 sq km, or one hectare, and has a tree canopy density of more than 10%, notwithstanding the legal status of the land.
- “Recorded forest area” by the FSI includes land that is legally considered a forest, as per Government Records, Regardless of the actual canopy density.

Drawbacks of the Forest (Conservation) Act:

- This Act has just transferred the powers from States to Centres to decide the conversion of reserve forest lands to non-forest areas. Thus, powers have been centralized at the top.
- The Act has failed to attract public support because it has infringed upon the human rights of the poor native people. Very marginal participation of the poor community in the Act remains one of the major drawbacks which affects proper execution of the Act.

- Forest-dwelling tribal communities have a rich knowledge about the forest resources, their values and conservation. But their role and contribution are neither acknowledged nor honoured.

7. SC Adjourns Hearing of West Bengal Suit

Why in News?

- The Supreme Court recently adjourned the hearing of a suit filed by West Bengal alleging that the Central Bureau of Investigation (CBI) was probing several cases and registering First Information Reports (FIRs) without taking prior consent from the State government.

About the News:

- The West Bengal government, in its original civil suit under Article 131 of the Constitution, has referred to the provisions of the Delhi Special Police Establishment Act 1946 and said that the Central agency has been proceeding with investigations and filing FIRs without getting the nod from the State government as mandated under the statute.
- The CBI has lodged multiple FIRs in cases of post-poll violence in West Bengal. The Supreme Court had issued notice in the suit in early September. The State government, in its plea, has sought a stay of investigation in the FIRs lodged into post-poll violence cases by the CBI in pursuance of the Calcutta High Court order.
- The plea said that as the general consent given to the Central agency by the West Bengal government had been withdrawn, the FIRs lodged could not be proceeded with. The State government has filed the original civil suit under Article 131 of the Constitution under which the top court has original jurisdiction to deal with any dispute between the Centre and a State.

Types of Consent Given by State Government:

- There are two types of consent for a probe by the CBI. These are: general and specific.
- When a state gives a general consent (Section 6 of the Delhi Special Police Establishment Act) to the CBI for probing a case, the agency is not required to seek fresh permission every time it enters that state in connection with investigation or for every case.
- When a General Consent is withdrawn, CBI needs to seek case-wise consent for investigation from the concerned state government. If specific consent is not granted, the CBI officials will not have the power of police personnel when they enter that state.
- This hurdle impedes seamless investigation by the CBI. A general consent is given to facilitate that seamless investigation in a case of corruption or violence.

Issue of Withdrawal of General Consent by States:

- Recently it has been seen that various states like Andhra Pradesh and West Bengal governments have withdrawn their general consent as a result of tussle between Centre and States.

Impact of Withdrawal:

- It means the CBI will not be able to register any fresh case involving a central government official or a private person stationed in the states who withdrew their general consent, without getting case-specific consent.
- In simple terms withdrawal of general consent simply means that CBI officers will lose all powers of a police officer as soon as they enter the state unless the state government has allowed them.
- It will have no impact on investigation of cases already registered with CBI as old cases were registered when General Consent Existed.

About Delhi Special Police Establishment Act:

- The Central Bureau of Investigation traces its origin to the Special Police Establishment (SPE) which was set up in 1941 by the Government of India.
- The functions of the SPE then were to investigate cases of bribery and corruption in transactions with the War & Supply Dept. Of India during World War II.
- Even after the end of the War, the need for a Central Government agency to investigate cases of bribery and corruption by Central Government employees was felt.
- The Delhi Special Police Establishment Act was therefore brought into force in 1946. The CBI's power to investigate cases is derived from this Act.

8. CJ tells Forest Department not to go for the Tiger kill

Why in News?

- CJ of Madras High Court has recently said the term 'hunt' included trapping, capturing and shooting only in unavoidable circumstances on response to an order to hunt the tiger, T23, at Masinagudi in the Mudumalai Tiger Reserve (MTR).

About the News:

- The animal, believed to be an old male in failing health and with injuries, is thought to have been responsible for the death of four persons in villages around the MTR and Gudalur.

- Efforts to tranquillise and capture it were initiated more than a week ago by the Forest Department after a herder was killed at Devan Estate in Gudalur.
- An order had been passed recently to hunt the tiger to capture or eliminate the animal before anyone else is killed or Injured. It was brought to the notice of the court that tiger MDT 23
- was very elusive and was not giving any chance to the tracking team to tranquillise it. It had also been cleverly avoiding bait cages for Several Days.

What are the Reasons for Attacks?

- The depleting forest cover and growing human presence, in around 650 wildlife zones in the country. Reports by the Forest Survey of India since early 1990s indicate that around one-third of the dense forest cover has been lost and half the traditional wildlife corridors have disappeared, bringing animals and people dangerously close.
- Densely packed tiger forests often lead to young and old tigers wandering outside. Such wandering tigers are more likely to come into conflict with people.
- Many of these attacks on people are accidental. A tigress with cubs, a tiger protecting its kill, or a tiger startled by the appearance of people are prone to charge in self-defence.

Procedures on Killing a Man-Eater Tiger:

- Conservation is about saving the species and not defending individual animals at the cost of the species. Letting a man-eater continue in the wild results in more attacks, turning locals against the Forest Department and making every tiger in the vicinity a potential target of reprisal.
- In the era of mass media, callous handling of conflict can shape the public perception of the tiger across the land and affect every community that lives in and around tiger forests. Prompt action sends the right message to local communities.
- Although, the 2013 Standard Operating Procedure of the National Tiger Conservation Authority (NTCA) says an “aberrant tiger” (man-eater) must be caught and “sent to the nearest recognised zoo and NOT released in the wild”, the conditions and circumstances makes trapping and tranquillisation difficult.
- Seasonal abundance of forest undergrowth may not allow clear vision or approach required for darting within a range of 15-25 metres. If live capture is not possible, the only option is to gun down the animal.
- Moreover, it does not make a difference to conservation whether a tiger is sent to a zoo or killed. In both cases, it is one tiger less in the wild.

Why Save Tigers?

- A 2015 report of National Tiger Conservation Authority (NTCA) titled: “Economic Evaluation of Tiger Reserves in India: A VALUE+ Approach” highlights why “large” areas are reserved for preserving fierce animals like the tiger, when we need more land for human use.
- It says that tigers are “umbrella” species. And by saving tigers, everything beneath their ecological umbrella - everything connected to them - including the world's last great forests, whose carbon storage mitigates climate change are saved.
- NTCA’s recent paper called the “Making the Hidden Visible: Economic Valuation of Tiger Reserves in India” lists the benefits rising from tiger reserves. They include employment generation, agriculture, fishing, fuel wood, fodder and grazing, carbon storage and sequestration, water and its purification by filtering organic wastes, soil conservation, nutrient cycling, and moderation of extreme events such as cyclone storms, Flash Floods.

Need of an Hour:

- Hunting of prey animals, such as deer and pig, needs to stop as they form the base for growth of tiger and other Carnivore Populations.
- Efforts can be taken to better wildlife management practices and understanding of animal behaviour. So that people don't kill an Animal out of panic. Safeguarding Tiger corridors, building eco-bridges and such conservation measures can be part of Corporate Social Responsibility.

Way Forward:

- Public outcry over a spate of human killings should neither provoke forest officials to hastily declare a tiger a man-eater nor come in the way of promptly removing an identified man-eater. It is very important to find solutions that lead to mutually beneficial co-existence of animals and the local Human Communities.
- Ensuring that both humans and animals have the space by protecting key areas for wildlife, creating buffer zones and investing in alternative land uses are some of the Solutions. Losing a handful of tigers that have become, for no fault of their own, a threat to local communities will not risk the future of the species. In fact, it will help the tiger retain local Goodwill.
- Likewise, fighting poor communities and the disempowered forest departments on sporadic shoot-on-sight orders will not secure the big cat’s future as well. That time and energy may be better spent saving the tiger against the powers of Mindless Development.

9. Health Benefit Package under Ayushman Bharat revised

Why in News?

- The National Health Authority (NHA), the apex body for implementing Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY), has revised the Health Benefit Package (HBP) Master under the scheme.

About the News:

- In the revised version of Health Benefit Package (HBP 2.2), rates of some packages have been increased by 20% to 400% under the PM-JAY.
- Rates of around 400 procedures have been revised and one new additional medical management package related to black fungus has also been added.
- The HBP 2.2 is expected to be rolled out from November this year.
- The revised packages for oncology will enhance cancer care for the beneficiaries in the country. The rationalised HBP will further improve the uptake of schemes in private hospitals leading to reduced out-of-pocket expenditure.

What is National Health Authority (NHA)?

- National Health Authority (NHA) is the apex body responsible for implementing India's flagship public health insurance/assurance scheme called "Ayushman Bharat Pradhan Mantri Jan Arogya Yojana".
- It has been entrusted with the role of designing strategy, building technological infrastructure and implementation of "National Digital Health Mission" to create a National Digital Health Eco-system.
- National Health Authority is the successor of the National Health Agency, which was functioning as a registered society since 23rd May, 2018.
- Pursuant to Cabinet decision for full functional autonomy, National Health Agency was reconstituted as the National Health Authority on 2nd January 2019, under Gazette Notification. NHA is governed by a Governing Board chaired by the Union Minister for Health and Family Welfare headed by a Chief Executive Officer (CEO), an officer of the rank of Secretary to the Government of India, who manages its affairs. The CEO is the Ex-Office Member Secretary of the Governing Board.
- To implement the scheme at the State level, State Health Agencies (SHAs) in the form of a society/trust have been set up by respective States. SHAs have full operational autonomy over the implementation of the scheme in the State including extending the coverage to non SECC beneficiaries.

- NHA is leading the implementation for national Digital Health Mission NDHM in coordination with different ministries/departments of the Government of India, State Governments, and private sector/civil society organizations.

About Universal Health Coverage:

- The scheme will ensure Universal Health Coverage and focus on providing financial risk protection and ensuring quality and affordable essential health services to all individuals and communities.
- Universal Health Coverage (UHC) includes the full spectrum of essential, quality health services, from health promotion to prevention, treatment, rehabilitation, and palliative care. UHC enables everyone to access the services, protecting people from the financial consequences of paying for Health Services out of their own pockets and reducing the risk that people will be pushed to Poverty.

What is Ayushman Bharat PMJAY Yojana?

- The PMJAY, world's largest health insurance/assurance scheme fully financed by the government, provides a cover of Rs. 5,00,000 per family per year for secondary and tertiary care hospitalisation across public and private empanelled hospitals in India.
- Pre-hospitalisation and Post-hospitalisation expenses such as diagnostics and medicines are also included in the scheme. Coverage: Over 10.74 crore poor and vulnerable entitled families (approximately 50 crore beneficiaries) are eligible for these benefits.
- Provides cashless access to health care services for the beneficiary at the point of service.

What is its significance?

- Helps reduce catastrophic expenditure for hospitalizations, which pushes 6 crore people into poverty each year. Helps mitigate the Financial Risk arising out of Catastrophic Health Episodes.

Eligibility Criteria's:

- No restrictions on family size, age or gender.
- All pre-existing conditions are covered from day one.
- Covers up to 3 days of pre-hospitalization and 15 days post-hospitalization expenses such as diagnostics and medicines. Benefits of the scheme are portable across the country.
- Services include approximately 1,393 procedures covering all the costs related to treatment, including but not limited to drugs, supplies, diagnostic services, physician's fees, room charges, surgeon charges, OT and ICU charges etc.

- Public hospitals are Reimbursed for the healthcare services at par with the private Hospitals.

Data from the Latest Economic Survey:

- The Pradhan Mantri Jan Arogya Yojana (PM-JAY) contributed to improvement in many health outcomes in States that implemented the programme. States that joined the PM-JAY, compared to those that did not, experienced greater penetration of health insurance, reduction in infant and child mortality rates, realised improved access and utilisation of family planning services and greater awareness of HIV/AIDS. Across all the States, the proportion of households with health insurance increased by 54% for States that implemented PM-JAY while falling by 10% in States that did not.

Challenges and Concerns:

- Medical audits have also revealed that private hospitals are more likely to indulge in fraud and abuse than public hospitals and more likely to discharge patients early post-surgery to cut costs. Ensuring the accountability of private hospitals to provide efficient and high-quality care is a pre-eminent challenge for scheme implementation.
- There is huge State-wise variation in the share of empanelled private hospitals from less than 25% in most of the north-eastern and hill States to 80% in Maharashtra. Private hospitals have fewer beds than public hospitals and are more likely to be empanelled for surgical packages and super-specialties.

10. Moody's Upgrades India Outlook to stable from negative

Why in News?

- Rating agency Moody's Investors Service has upgraded India's sovereign rating outlook to 'stable' from 'negative' citing an ebbing of the risks from COVID-19 and the negative feedback between the real Economy and Financial System.

About the News:

- While it retained India's rating at Baa3, reflecting the lowest investment grade rating, Moody's said it expects real GDP to surpass pre-pandemic levels of 2019-20 this year itself, as the ongoing economic recovery is picking up steam with activity upticks broadening across sectors.
- It expects 2021-22 to record 9.3% growth in GDP, followed by 7.9% next year. In June 2020, Moody's had downgraded India's sovereign rating to Baa3 from Baa2 with a negative outlook. Recently, it said that downside risks to growth from subsequent

coronavirus infection waves are mitigated by rising vaccination rates and more selective use of restrictions on economic activity, as seen during the second wave.

What are its Implications?

- Moreover, higher capital cushions and greater liquidity suggests banks and non-bank financial institutions pose much lesser risk to the sovereign than Moody's previously anticipated. "While risks stemming from a high debt burden and weak debt affordability remain, Moody's expects that the economic environment will allow for a gradual reduction of the general government fiscal deficit over the next few years, preventing further deterioration of the sovereign credit profile.
- Over the medium term, Moody's expects real GDP growth to average around 6%, reflecting a rebound in activity to levels at potential as Conditions Normalize.

How did Moody's Projected the Analysis?

- The growth projections take into account structural challenges, including weak infrastructure, rigidities in labour, land and product markets that continue to constrain private investment and contribute to post-pandemic economic scarring.

What are the Key Observations made by Moody's?

- The normalisation of growth levels will enable a 'gradual fiscal consolidation and stabilisation of the government's debt burden, albeit at high and above pre-pandemic levels.
- However, Moody's said the higher debt burden and weaker debt affordability compared to pre-pandemic times is expected to persist, which is a key factor in its rationale for retaining the Baa3 rating as it would contribute to 'lower fiscal strength'.
- This would offset India's recent strong points such as narrower current account deficits and historically high foreign exchange reserves that have reduced the country's vulnerabilities to external shocks. "India's main credit challenges, its low per capita income and its weak fiscal position, which has been exacerbated by the coronavirus shock.
- India's general government debt burden increased sharply from 74% of GDP in 2019 to an estimated 89% of 2020 GDP, significantly higher than the Baa median of around 48%.
- Meanwhile, interest payments are about 26% of general government revenue, the highest among Baa-rated peers and more than three times the Baa median of 8%," it pointed out.
- "Looking ahead, Moody's expects the debt burden to stabilize at around 91% over the medium term, as strong nominal GDP growth is balanced by a gradually shrinking, but still sizeable, primary deficit.

- The upgrade in outlook to ‘stable’, Moody’s said, was driven by the ‘lower susceptibility’ to event risk from ‘a negative feedback loop between the financial sector and the real Economy’.

Why Stable Rating to India?

- Solvency in the financial system has strengthened, improving credit conditions which Moody’s expects to be sustained as policy settings normalize.
- Bank provisioning has allowed for the gradual write-off of legacy problem assets over the past Few Years.
- In addition, banks have strengthened their capital positions, pointing to a stronger outlook for credit Growth to support the Economy.

What India should do for Upgrade?

- For an upgrade in the country’s rating, Moody’s said India’s economic growth potential would have to increase ‘materially beyond its expectations, supported by effective implementation of government economic and financial sector reforms that resulted in a significant and sustained pickup in Private Sector Investment’.
- “Effective implementation of fiscal policy measures that resulted in a sustained decline in the government’s debt burden and improvements in debt affordability would also provide support to the credit profile.

What are the Principal Measures to be taken?

- The agency flagged high negative risks for India on environmental and social considerations, stressing that a weak Government balance sheet with relatively low income levels affect the sovereign’s capacity to mitigate such risks.
- “Exposure to social risk is Highly Negative, driven by risks related to low and unevenly distributed incomes, unequal access to high-quality education, strains on housing, healthcare and basic services provision.
- While the government has invested in improving access to basic services, with demonstrated progress in sanitation and running water, around 15% of the population is undernourished and early-age mortality remains Relatively High.

Credit Rating Scales by Agency, Long-Term

Moody's	S&P	Fitch	
Aaa	AAA	AAA	Prime
Aa1	AA+	AA+	High grade
Aa2	AA	AA	
Aa3	AA-	AA-	
A1	A+	A+	Upper medium grade
A2	A	A	
A3	A-	A-	
Baa1	BBB+	BBB+	Lower medium grade
Baa2	BBB	BBB	
Baa3	BBB-	BBB-	
Ba1	BB+	BB+	Non-investment grade speculative
Ba2	BB	BB	
Ba3	BB-	BB-	
B1	B+	B+	Highly speculative
B2	B	B	
B3	B-	B-	
Caa1	CCC+	CCC	Substantial risk
Caa2	CCC		Extremely speculative
Caa3	CCC-		Default imminent with little prospect for recovery
Ca	CC	CC	
C	C	C	
/	D	D	In default
/			

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11. Telangana Withdraws plea in SC on sharing of Krishna water

Why in News?

- Telangana has recently withdrew its plea in the Supreme Court for “equitable apportionment” of the Krishna River water on the basis of an assurance given by the Centre that it will “consider” constituting a Tribunal to resolve the issue.

About the News:

- Andhra Pradesh has complained to the Krishna River Management Board (KRMB) about the drawing of water from the Srisaillam project by Telangana for power generation.
- The KRMB, in its recent orders, had asked Telangana to stop power generation. The tension has emerged over defiance of orders of the KRMB by Telangana Government.
- Appearing before a Bench, Telangana, in an application, said the union minister, in a meeting, stated that if the State withdrew its case from the Supreme Court, the Centre would “positively” consider forming a tribunal under Inter State River Water Disputes Act of 1956 after taking Necessary Legal Opinion.

About the Dispute:

- Telangana and Andhra Pradesh share stretches of the Krishna and the Godavari and own their tributaries.
- Both states have proposed several new projects without getting clearance from the river boards, the Central Water Commission and the Apex Council, as mandated by the Andhra Pradesh Reorganisation Act, 2014.
- The Andhra Pradesh Reorganisation Act, 2014 mandates for the constitution of an Apex Council by the Central Government for the supervision of the functioning of the Godavari River Management Board and Krishna River Management Board.
- The Apex Council comprises the Union Water Resources Minister and the Chief Ministers of Telangana and Andhra Pradesh. The Andhra Pradesh government’s proposal to increase the utilisation of the Krishna water from a section of the river above the Srisaillam Reservoir led to the Telangana government filing a complaint against Andhra Pradesh.
- The Srisaillam reservoir is constructed across the Krishna River in Andhra Pradesh. It is located in the Nallamala hills. The Andhra Pradesh government retaliated with its own complaints saying that Palamuru-Rangareddy, Dindi Lift Irrigation Schemes on the Krishna river and Kaleshwaram, Tupakulagudem schemes and a few barrages proposed across the Godavari are all new projects.

12. Godavari Cauvery Interlinking Project

Why in News?

- The Tamil Nadu Government has sought the support of Andhra Pradesh and Telangana for the Godavari (Inchampalli)-Cauvery (Grand Anicut) link project.

About Godavari Cauvery Interlinking Project:

- The project envisages the diversion of 247 thousand million cubic feet (tmcft) of unutilised water in the Indravati sub-basin of the Godavari basin to meet the requirements between the Godavari and the Cauvery rivers.
- Water will be diverted from Godavari River to Nagarjuna Sagar dam (through lifting) and further south to meet the demands of Krishna, Pennar and Cauvery basins.
- The Godavari - Cauvery link comprises three components namely,
 - ✓ The Godavari (Inchampalli/Janampet) - Krishna (Nagarjunasagar),
 - ✓ The Krishna (Nagarjunasagar) – Pennar (Somasila) and
 - ✓ The Pennar (Somasila)–Cauvery.
- The project will provide irrigation facilities to 3.45 to 5.04 lakh hectares in Prakasam, Nellore, Krishna, Guntur, and Chittoor districts of Andhra Pradesh.

About the Rivers:

1. Godavari River

- ✓ **Source:** Godavari River rises from Trimbakeshwar near Nasik in Maharashtra and flows for a length of about 1465 km before out falling into the Bay of Bengal.
- ✓ **Drainage Basin:** The Godavari basin extends over states of Maharashtra, Andhra Pradesh, Chhattisgarh and Odisha in addition to smaller parts in Madhya Pradesh, Karnataka and Yanam (Union territory of Puducherry in East Godavari district of Andhra Pradesh).
- ✓ **Tributaries:** Pravara, Purna, Manjra, Penganga, Wardha, Wainganga, Pranhita (combined flow of Wainganga, Penganga, Wardha), Indravati, Maner and the Sabri.

2. Krishna River

- ✓ **Source:** It originates near Mahabaleshwar (Satara) in Maharashtra.
- ✓ **Drainage Basin:** It runs from four states namely, Maharashtra, Karnataka, Telangana and Andhra Pradesh before emptying into the Bay of Bengal.
- ✓ **Tributaries:** Tungabhadra, Mallaprabha, Koyna, Bhima, Ghataprabha, Yerla, Warna, Dindi, Musi and Dudhganga. Nagarjunasagar dam is on the River Krishna.

3. Pennar River

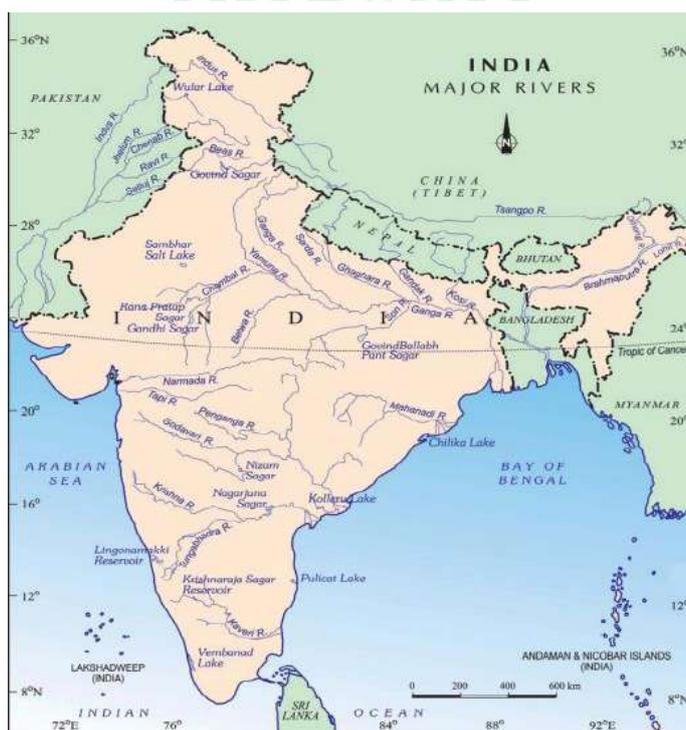
- ✓ **Source:** It rises in Nandi Hills in Chikballapur District of Karnataka and runs north and east before emptying into the Bay of Bengal.
- ✓ **Drainage Basin:** It is 597 kilometres long, with a drainage basin covering 55,213 km² in Karnataka and Andhra Pradesh.
- ✓ **Tributaries:** Jayamangali, Kunderu, Sagileru, Chitravathi, Papagni and Cheyyeru.

4. Cauvery River

- ✓ **Source:** The River rises on Brahmagiri Hill of the Western Ghats in south western Karnataka.
- ✓ **Drainage Basin:** It flows in a south easterly direction through the states of Karnataka and Tamil Nadu, and descends the Eastern Ghats in a series of great falls.
- ✓ Before emptying into the Bay of Bengal south of Cuddalore, Tamil Nadu, the river breaks into a large number of distributaries forming a wide delta called the “garden of southern India.” **Tributaries:** Arkavathi, Hemavathi, Lakshmana Theertha, Shimsa, Kabini and Harangi.

What are the Benefits of the Project?

- The backwaters will be carried through Krishna and Pennar using steel pipes instead of developing canals en route as suggested by a non-resident engineer from Andhra Pradesh.
- By doing so, wastage of water from canals through vaporisation could be prevented and overall cost reduced.



13.SC Questions ₹ 8 Lakh Income limit for EWS Quota

Why in News?

- The Supreme Court recently asked the government to explain how it zeroed in on the figure of '₹8 lakh' as the annual income criterion to identify Economically Weaker Sections (EWS) among forward classes of society for grant of 10% reservation in medical admissions under the all India quota (AIQ).

About the News:

- The court was hearing a batch of petitions filed by NEET aspirants challenging a July 29 notification of the Centre announcing 27% quota to OBCs and 10% reservation to EWS in the all India quota category. The three-judge Bench did not agree with the suggestion from Additional Solicitor General, appearing for the government, to leave the "larger" issue of what led to income criterion of ₹8 lakh for the Constitution Bench.
- The Bench, also asked the Centre to file an affidavit explaining the "basis" on which ₹8 lakh was arrived at as the economic cut-off to be applied uniformly across the country to identify beneficiaries for reservation under the EWS quota.

What is the Issue?

- The Bench said even the 103rd Amendment had said "each State will define economic backwardness with reference to income". The court said it had been left to each State.
- The Court asked, Can we say ₹8 lakh everywhere qualifies as EWS or is there a need to have a more nuanced analysis to EWS of having different yardsticks to different parts of the country based on cost of living, HRA, etc.
- Economic parameters could change even within a single State. Earning capacity might differ from town to town within a State. Therefore we may have to go on Broad Probabilities considering the National Cost of living. That is one of the Index.
- It also asked that if the Government had done any exercise or checked the GDP per capita for every State.

Who are "Economically Weaker Sections"?

- For the purposes of article 15 and article 16, "economically weaker sections" shall be such as may be notified by the State from time to time **on the Basis of Family Income and other Indicators of Economic Disadvantage.**
- Central Government of India has specified certain criteria for identifying the EWS. This will be a class distinct from the already specified classes of SCs, STs and socially and educationally backward classes (OBCs).

- The EWS quota applies to household with
 - ✓ Annual household income below Rs 8 lakh.
 - ✓ Agriculture land below 5 acres.
 - ✓ Residential house below 1000 sq ft.
 - ✓ Residential plot below 100 yards in notified municipality.
 - ✓ Residential plot below 200 yards in non-notified municipality area.

What are the Implications?

- The 10% reservation will be in addition to the existing cap of 50% reservation for the Scheduled Castes, Scheduled Tribes and the Other Backward Classes, taking total reservation to 60%.
- The quota targets the poor among the upper castes. This will be over and above 50% mandated by Constitution and hence the need for Constitution amendment Bill.

SC verdict in Indira Sawhney case:

- The proposed law would face roadblocks if challenged in the Supreme Court.
- A nine-judge Constitution Bench of the Supreme Court in the Indira Sawhney case of 1992 specifically answered the question “whether backward classes can be identified only and exclusively with reference to the economic criterion.”
- The constitution bench had categorically ruled that a backward class cannot be determined only and exclusively with reference to economic criterion. The bench had held that economic criterion may be a consideration or basis along with, and in addition to, social backwardness, but it can never be the Sole Criterion.
- The bench in its judgement declared 50% quota as the rule unless Extraordinary Situations “inherent in the great diversity of this country and the people” happen. Even then, the court stated that extreme caution is to be exercised and a special case should be made out.

What is the Centre's Argument?

- The Centre had argued that it was every State's prerogative to provide 10% economic reservation in State government jobs and admissions in State-run education institutions.
- Whether or not to provide reservation to the economically weaker section (EWS) of the society for appointment in State government jobs and for admission to State government educational institutions, as per provisions of the newly inserted Articles 15(6) and 16(6) of the Constitution, is to be decided by the State Government Concerned.

14. NGT needn't wait for 'Godot' to save environment: Supreme Court

Why in News?

- The Supreme Court has recently declared the National Green Tribunal's (NGT) position as a "unique" forum endowed with suo motu powers to take up environmental issues across the country.

What did the court observe?

- The court said the NGT need not wait for the "metaphorical Godot" (waiting for something to happen) to knock on its portal to flex its considerable muscles to save the environment. The exercise of power by the NGT is not circumscribed by the receipt of applications. When substantial questions relating to the environment arise and the issue is civil in nature and those relate to the Act, the NGT, in our opinion, even in the absence of an application, can self-ignite action either towards amelioration or towards prevention of harm. The Bench, dismissed objections from the Centre, legal experts and even the court's own amicus curiae who all argued against the NGT clothed with suo motu powers.
- The court, explained that the role of the NGT was not simply adjudicatory in nature. The Tribunal has to perform equally vital roles that were preventative, ameliorative or remedial in nature. The functional capacity of the NGT was intended to leverage wide powers to do full justice in its environmental mandate.
- The judgment described the NGT "as a complimentary, competent, specialised forum to deal with all environmental multidisciplinary issues both as original and also as an appellate authority, which complex issues were hitherto dealt with by the High Courts and the Supreme Court".
- The NGT has been recognised as one of the most progressive Tribunals in the world. This jurisprudential leap has allowed our country to enter a rather exclusive group of nations which have set up such institutions with Broad Powers.
- Unlike the civil courts, which cannot travel beyond the relief sought by the parties, the NGT is conferred with Power of Moulding any relief.

About NGT:

- Established on 18th October, 2010 under the National Green Tribunal Act 2010.
- Established for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.
- New Delhi is the Principal Place of Sitting of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other four places of sitting of the Tribunal.

- The Tribunal is not bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.
- NGT is mandated to make disposal of applications or appeals finally within 6 months of filing of the same. With the establishment of the NGT, India became the third country in the world to set up a specialised environmental tribunal, only after Australia and New Zealand, and the first developing country to do so.

Composition of NGT:

- **Sanctioned strength:** The act allows for up to 40 members (20 expert members and 20 judicial members).
- **Chairman:** Is the administrative head of the tribunal, also serves as a judicial member and is required to be a serving or retired Chief Justice of a High Court or a judge of the Supreme Court of India.

How these Members are Selected?

- Members are chosen by a selection committee (headed by a sitting judge of the Supreme Court of India) that reviews their applications and conducts interviews.
- The Judicial members are chosen from applicants who are serving or retired judges of High Courts.
- Expert members are chosen from applicants who are either serving or retired bureaucrats not below the rank of an Additional Secretary to the Government of India (not below the rank of Principal Secretary if serving under a state Government) with a Minimum Administrative experience of five years in dealing with Environmental matters. Or, the expert members must have a doctorate in a Related Field.

15. Over 2 lakh RTI pleas pending

Why in News?

- According to an analysis by the Satark Nagrik Sangathan (SNS), a complaint filed under the Right to Information Act (RTI) in Odisha this summer would not be disposed of by the State's Information Commission until 2028 at the current rate of operations.

About the News:

- The SNS report documented the performance of these commissions, highlighting the delays in disposing of cases due to both shortage of personnel and inefficient operations. A complaint filed in Odisha on July 1, 2021 would take six years and eight months to be disposed of, the longest among States.

- Twelve State Information Commissions plus the Central Information Commission would need at least a year to dispose of their appeals, and the nationwide backlog has crossed 2.55 lakh cases.
- The Central Information Commission itself would take a year and 11 months to dispose an appeal, although it has reduced its backlog to 33,742 since filling four of its vacancies almost a year ago. However, the CIC still has three vacancies left and has not functioned at its full strength of 10 Commissioners and one chief for almost five years.
- An assessment of the functioning of the transparency watchdogs revealed that 21 out of 29 commissions in the country did not hold a single hearing during the first three stages of the national lockdown imposed in 2020.
- Sixteen years after the RTI Act came into force on October 12, 2005, it is a tool for citizens to demand accountability in governance, with an estimated 40 lakh to 60 lakh RTI requests being filed every year.
- When a request for information is denied by a government body, however, appeals are filed in the Central and State Information Commissions, which act as transparency watchdogs under the law.

About Right to Information (Amendment) Act, 2019:

- It provided that the Chief Information Commissioner and an Information Commissioner (of Centre as well as States) shall hold office for such term as prescribed by the Central Government. Before this amendment, their term was fixed for 5 years.
- It provided that the salary, allowances and other service conditions of the Chief Information Commissioner and an Information Commissioner (of Centre as well as States) shall be such as prescribed by the Central Government.
- Before this amendment, the salary, allowances and other service conditions of the Chief Information Commissioner were similar to those of the Chief Election Commissioner and that of an Information Commissioner were similar to those of an Election Commissioner (State Election Commissioners in case of States).
- It removed the provisions regarding deductions in salary of the Chief Information Commissioner, an Information Commissioner, the State Chief Information Commissioner and a State Information Commissioner due to pension or any other retirement benefits received by them for their previous Government Service.
- The RTI (Amendment) Act, 2019 was criticized on grounds of diluting the law and giving more powers to the Central Government.

About Central Information Commission:

- The Central Information Commission was established by the Central Government in 2005, under the provisions of the Right to Information Act (2005). It is not a constitutional body.
- The Commission consists of a Chief Information Commissioner and not more than ten Information Commissioners.
- At present (2019), the Commission has six Information Commissioners apart from the Chief Information Commissioner.
- They are appointed by the President on the recommendation of a committee consisting of the Prime Minister as Chairperson, the Leader of Opposition in the Lok Sabha and a Union Cabinet Minister nominated by the Prime Minister.
- The Chief Information Commissioner and an Information Commissioner shall hold office for such term as prescribed by the Central Government or until they attain the age of 65 years, whichever is earlier.
- They are not Eligible for Reappointment.

Powers and Functions of CIC:

- It is the duty of the Commission to receive and inquire into a complaint from any person regarding information request under RTI, 2005.
- The Commission can order an inquiry into any matter if there are reasonable grounds (suo-moto power).
- While inquiring, the Commission has the powers of a civil court in respect of summoning, requiring Documents etc.

Suggestions:

- The government must ensure the timely appointment of chiefs and members of ICs.
- The increasing backlog of cases is exacerbated by the fact that most Commissions are functioning at reduced capacity.
- It is absolutely critical that all information commissions conduct timely and effective hearings and disposal of cases to ensure people can exercise their fundamental right to information. Commissions should hold hearings telephonically. Where possible, video calls can be set up. There should be a prioritization of cases dealing with information related to life and liberty. Information regarding matters like food distribution, social security, health and COVID 19-related issues should be proactively disclosed.
- Section 7(1) of the RTI Act states that information concerning the life or liberty of a person has to be supplied within 48 hours of the request being received.

- Section 4 of the RTI Act requires suo motu disclosure of information by each public authority. Urgent digitization of records and proper record management is important as lack of remote access to records in the lockdown has been widely cited as the reason for not being able to conduct hearings of appeals and complaints by commissions.
- Governments should put in place a mechanism for online filing of RTI applications.

Way Forward:

- The role of Information Commissions is crucial during COVID-19 to ensure that people can obtain information on healthcare facilities, social security programs and delivery of Essential Goods and services meant for those in Distress.
- If the poor and marginalised affected by the public health emergency are to have any hope of obtaining the benefits of government schemes, they must have access to relevant information.
- Democracy is all about the governance of the people, by the people and for the people. In order to achieve the third paradigm, the state needs to start acknowledging the importance of informed public and the role that it plays in the country's development as a nation. In this context, underlying issues related to RTI Act should be resolved, so that it can serve the information needs of society.

16. Anticipatory bail can be set Aside, says SC

Why in News?

- The Supreme Court has recently held that a superior court can set aside an anticipatory bail order if there was enough material to suggest that factors like gravity of the offence and the role of the accused in the crime were not considered by the lower court.

What did the Apex Court say in this regard?

- A Bench while considering an application for grant of anticipatory bail, had to consider the nature of the offence, the role of the person, the likelihood of his influencing the course of investigation, etc.
- The apex court judgment set aside an anticipatory bail granted by the Madhya Pradesh High Court in a murder case. The High Court had granted the bail, despite refusal by the trial court earlier.
- A man was shot dead by two men while a third held him down over a rivalry.

- Courts ought to be generally guided by considerations such as the nature and gravity of the offences, the role attributed to the applicant and the facts of the case, while considering whether to grant anticipatory bail.
- The court reiterated the settled law that an appellate or superior court could set aside anticipatory bail granted by a lower court on the ground that the latter “did not consider material facts or crucial circumstances”.

What is Anticipatory Bail?

- Anticipatory bail is a direction to release a person on bail, issued even before the person is arrested. Under Indian criminal law, there is a provision for anticipatory bail under **Section 438 of the Criminal Procedure Code**.
- **Law Commission of India** in its 41st report recommended incorporating this provision in Procedure Code.
- This provision allows a person to seek bail in anticipation of an arrest on accusation of having committed a non-bailable offence.
- It is only issued by the Sessions court and High Court.

Why such a Law is Needed?

- Anticipatory bail helps to prevent influential powers from implicating their rivals in false cases.
- **Section 438** (anticipatory bail) of the Code of Criminal Procedure protects people from the ignominy of detention in jail for days on end and **disgrace to their reputation**.
- Anticipatory bail is more needed now because there is rising trend of political rivalry and is showing signs of steady Increase.

SC previous Verdicts regarding Anticipatory Bail:

- The questions referred to the Constitution Bench was, whether the protection granted to a person under Section 438 should be limited to a fixed period till the accused surrenders in court.
- Whether the life of anticipatory bail should end when the accused is summoned by the court.
- SC said that the life or duration of an anticipatory bail order does not normally end at the time and stage when the accused is summoned by the court, or when charges are framed, but can continue till the end of the trial.

The back story of **advance bail**

- The old Cr.PC of 1898 did not contain any specific provision corresponding to the present Section 438. There was a difference of opinion among various HCs whether court had an inherent power to grant pre-arrest bail

- The Law Commission of India on September 24, 1969, highlighted the need for introducing a provision in the Code enabling courts to grant "anticipatory bail" as an antidote to detention in false cases

- Clause 447 of the Draft Bill of 1970 was enacted with some modifications and became Section 438 of the Cr.PC, 1973

A five-judge Supreme Court Bench in the 1980 case of **Gurbaksh Singh Sibbia vs. State of Punjab** interpreted that the power to grant anticipatory bail is

"cast in wide terms and should not be hedged in through narrow judicial interpretation". It held that courts could impose conditions which were appropriate



What are the contradictions?

- Denial of bail amounts to deprivation of the Article 21 of the Indian Constitution (**fundamental right to personal liberty in a free and Democratic Country**).
- The specter of arbitrary and heavy-handed arrests: too often, to harass and humiliate citizens, and oftentimes, at the interest of powerful individuals (and not to further any meaningful investigation into offences) led to the enactment of Section 438.
- The protection against arrest should be in favour of the accused. Restricting the protection would prove unfavorable for the accused.

Is there any a Restriction or condition for Granting Bail?

- It is open for a court to impose appropriate conditions for grant of anticipatory bail if the specific facts or the feature of the offence involved demands it.
- Courts have to consider the nature of the offence, the role of the person, the likelihood of his influencing the course of investigation or tampering of evidence, including intimidating witnesses and fleeing justice.
- But restrictions/conditions can be imposed only on a case-to-case basis.

What is the Concern?

- The court held that a plea for anticipatory bail can be filed even before the registration of FIR as long as there is reasonable basis for apprehension of arrest and clarity of facts.
- However, the grant of protection should not be "blanket" but confined to specific offence or incident for which relief from arrest is sought.

17. Gati Shakti will boost Infrastructure Projects, says PM

Why in News?

- Recently, the government of India has launched the ambitious Gati Shakti scheme or National Master Plan for multi-modal connectivity plan, with the aim of coordinated planning and execution of infrastructure projects to bring down logistics costs.

About the Scheme:

- Aim of the scheme is to ensure integrated planning and implementation of infrastructure projects in the next four years, with focus on expediting works on the ground, saving costs and creating jobs.
- The Gati Shakti scheme will subsume the Rs 110 lakh crore National Infrastructure Pipeline that was launched in 2019.
- Besides cutting logistics costs, the scheme is also aimed at increasing cargo handling capacity and reducing the turnaround time at ports to boost trade.
- It also aims to have 11 industrial corridors and two new defence corridors - one in Tamil Nadu and other in Uttar Pradesh. Extending 4G connectivity to all villages is another aim. Adding 17,000 kms to the gas pipeline network is being planned.
- It will help in fulfilling the ambitious targets set by the government for 2024-25, including expanding the length of the national highway network to 2 lakh kms, creation of more than 200 new airports, heliports and water aerodromes.
- It intends to bring together 16 infrastructure related Ministries. This will help in removing long-standing issues such as disjointed planning, lack of standardisation, problems with clearances, and timely creation and utilisation of infrastructure capacities.
- **Gati Shakti Digital Platform:** It involves the creation of a common umbrella platform through which infrastructure projects can be planned and implemented in an efficacious manner by way of coordination between various ministries/departments on a real-time basis.

What would be the Expected Outcomes?

- The scheme will help mapping the existing and proposed connectivity projects.
- Also, there will be immense clarity on how different regions and industrial hubs in the country are linked, particularly for last mile connectivity.
- A holistic and integrated transport connectivity strategy will greatly support Make in India and integrate different modes of transport.
- It will help India become the business capital of the world.

What is the Need for Integrated Infrastructure Development?

- There exists a wide gap between macro planning and micro implementation due to the lack of coordination and advanced information sharing as departments think and work in silos.
- According to a study, the logistical cost in India is about 13% of GDP, which is higher than developed countries.
- Due to this high logistical cost, the competitiveness of India's exports is greatly reduced.
- It is globally accepted that the creation of quality infrastructure for Sustainable Development is a proven way, which gives rise to many economic activities and creates employment on a large scale.
- The scheme is in synergy with the National Monetisation Pipeline (NMP).
- The NMP has been announced to provide a clear framework for monetisation and give potential investors a ready list of assets to generate investment interest.

What are the Associated Concerns?

- **Low Credit Off-take:** Although the government had taken up 'strong' banking sector reforms and the Insolvency and Bankruptcy Code had yielded about Rs. 2.4 lakh crore of recoveries on bad loans, there are concerns about declining credit offtake trends.
 - ✓ Banks give credit off-takes to help businesses acquire financing for future projects through the promise of future income and proof of an existing market.
- **Lack of Demand:** In the post-Covid-19 scenario, there is a lack of private demand and investment demand.
- **Structural Problems:** Due to land acquisition delays and litigation issues, the rate of implementation of projects is very slow on global standards.
 - ✓ Getting approvals is very difficult in terms of land access, environmental clearances; also impending litigation in court delays the infrastructure projects.

Way Forward:

- PM Gati Shakti is a step in the right direction. However, it needs to address structural and macroeconomic stability concerns, emanating from high public expenditure.
- Thus, it is imperative that this initiative is underpinned by a stable and predictable regulatory and Institutional Framework.

18. Kunming Declaration on Biodiversity

Why in News?

- Recently, the Kunming Declaration was adopted by over 100 countries at the ongoing 15th Conference of the Parties to the United Nations Convention on Biological Diversity in China.

About:

- The adoption of the declaration will create momentum for a new global biodiversity pact. In a previous agreement, Strategic Plan for Biodiversity 2011-2020, signed in Aichi, Japan, in 2010, governments agreed on 20 targets to try to slow biodiversity loss and protect habitats by 2020. It calls for urgent and integrated action to reflect biodiversity considerations in all sectors of the global economy but crucial issues - like funding conservation in poorer countries and committing to biodiversity-friendly supply chains have been left to discuss later. It is not a binding international agreement.
- It calls upon the parties to mainstream biodiversity protection in decision-making and recognise the importance of conservation in protecting human health.
- The theme of the declaration is Ecological Civilization: Building a Shared Future for All Life on Earth. By adopting this, the nations have committed themselves to support the development, adoption and implementation of an effective post-2020 implementation plan, a capacity building action plan for the Cartagena Protocol on biosafety.
- The Protocol seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from Modern Biotechnology.
- As per the declaration the signatory nations will ensure that the post-pandemic recovery policies, programmes and plans contribute to the conservation and sustainable use of biodiversity, promoting sustainable and Inclusive Development.

What are the Regions Discussed?

- **30 by 30 Target:** The declaration made a reference to the '30 by 30' target which is a key proposal being debated at the CoP 15, that would afford 30% of the Earth's land and oceans protected status by 2030.
 - ✓ Apart from this, the goal to halve the use of chemicals in agriculture and stop creating plastic waste is also being debated.
- **Kunming Biodiversity Fund:** China has also pledged to inject USD 233 million into a new fund to protect biodiversity in developing countries. The fund is being referred to by China as Kunming Biodiversity Fund.

- ✓ It is the right step in this direction. However, some countries have reservations regarding this fund.
- ✓ Some countries have called this fund as “a drop in the bucket” given that China is the world’s biggest polluter.
- ✓ Further, some rich country donors say a new fund for conservation is unnecessary because the United Nations’ Global Environment Facility already helps developing Nations Finance Green Projects.

What are the Global Initiatives to Save Biodiversity?

- **Convention on Biological Diversity:**
 - ✓ It is a legally binding treaty to conserve biodiversity that has been in force since 1993.
 - ✓ India is a party to the convention.
- **Convention on International Trade in Endangered Species of Wild Fauna and Flora:**
 - ✓ It provides public, private and non-governmental organisations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together.
 - ✓ India is a member of the convention.
- **World Wide Fund for Nature:**
 - ✓ It is an international non-governmental organisation for the conservation, research and restoration of the Natural Environment.
- **Global Biodiversity Assessment:**
 - ✓ It is an independent, critical, peer reviewed scientific analysis of the current issues, theories and views regarding the main aspects of biodiversity.
- **Man and the Biosphere Program:**
 - ✓ It was launched in 1970 and has initiated programmes and activities focusing on the diversity and the resources provided by nature, humans' impacts on biodiversity, as well as how biodiversity affects human activities.

What is Climate Financing?

- Climate finance refers to local, national or transnational financing—drawn from public, private and alternative sources of financing—that seeks to support mitigation and adaptation actions that will address climate change.

What are Some Global Climate Funds?

- **Green Climate Fund (GCF):**

- ✓ It was established to limit or reduce Greenhouse Gas (GHG) emissions in developing countries and to help vulnerable societies adapt to the unavoidable impacts of climate change.
- **Adaptation Fund (AF):**
 - ✓ It was established under the Kyoto Protocol in 2001 and has committed USD 532 million to climate adaptation and resilience activities.
- **Global Environment Fund (GEF):**
 - ✓ GEF has served as an operating entity of the financial mechanism since the Convention came into force in 1994.
 - ✓ It is a private equity fund focused on seeking long term financial returns by investments in clean energy under climate change.

Additional Funds:

- In addition to providing guidance to the GEF and the GCF, parties have established two **Special Funds:**
 - The Special Climate Change Fund (SCCF) and the Least Developed Countries Fund (LDCF).
 - Both funds are managed by the GEF.

19. India will ban single-use Plastics Next Year

Why in News?

- India will ban most single-use plastics by next year as part of its efforts to reduce pollution – but experts say the move is only a first step to mitigate the Environmental Impact.

Background:

- In 2019, the Union Government in a bid to free India of single-use plastics by 2022, had laid out a multi-ministerial plan to discourage the use of single-use plastics across the country. So, the Government announced the ban in August 2021, following its 2019 resolution to address plastic pollution in the country.
- The ban on most single-use plastics will take effect from July 1, 2022.

What needs to be done?

- Enforcement is key for the ban to be effective.
- The Government also needs to address important structural issues such as policies to regulate the use of plastic alternatives, improve recycling and have better waste segregation management.

- In addition to improving recyclability, investment in research and development for alternatives should also be a priority.

What are single use Plastics?

- Single-use plastics refer to disposable items like grocery bags, food packaging, bottles and straws that are used only once before they are thrown away, or sometimes recycled.

Why Plastics?

- As plastic is cheap, lightweight and easy to produce, it has led to a production boom over the last century, and the trend is expected to continue in the coming decades, according to the United Nations. But countries are now struggling with managing the amount of plastic waste they have generated. About 60% of plastic waste in India is collected – that means the remaining 40% or 10,376 tons remain uncollected.

What will be the strategy?

- A government committee has identified the single use plastic (SUP) items to be banned based on an index of their utility and environmental impact. It has proposed a three-stage ban:
 - ✓ The first category of SUP items proposed to be phased out are plastic sticks used in balloons, flags, candy, ice-cream and ear buds, and thermocol that is used in decorations. The second category, proposed to be banned from July 1, 2022, includes items such as plates, cups, glasses and cutlery such as forks, spoons, knives, straws, trays; wrapping and packing films used in sweet boxes; invitation cards; cigarette packets; stirrers and plastic banners that are less than 100 microns in thickness.
 - ✓ A third category of prohibition is for non-woven bags below 240 microns in thickness. This is proposed to start from September next year.

Challenges Ahead:

- It is not going to be an easy task given that close to 26,000 tons of plastic waste is generated across India every day, of which more than 10,000 tons stays uncollected.
- A significant amount of plastic ends up in rivers, oceans and landfills.

Need of an Hour:

- The government has to do a thorough Economic and Environmental cost-benefit analysis.
- The plan has to take into account social and economic impacts for the ban to be successful.
- We need better recycling policies because resources are poor and there needs to be a much Broader Strategy.

20. Tamil Nadu Urban Employment Scheme

Why in News?

- Tamil Nadu government has issued orders to implement the urban employment scheme in the state on a Pilot Basis.

About the scheme:

- This is an urban employment scheme to be implemented by Tamil Nadu Government on the lines of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). The scheme is aimed at providing livelihood and social security by increasing job opportunities and through creation and Maintenance of Public Assets.

Need for:

- Unlike other States, the urban population in Tamil Nadu is growing fast and it would reach 60% of the total population by 2036.
- A total of four crore people are now living in urban areas, accounting for 53% of the total population.
- But, many of them had lost their jobs because of the COVID-19 pandemic.

Implementation and Key Features:

- Under the scheme, workers will be used for activities such as desilting of water bodies and maintenance of public parks and other places.
- 50% of the total person-days under the scheme would be earmarked for women.
- Women and men would be paid the same wages for the same unskilled and semiskilled work. The TN Urban Employment Scheme is based on the recommendations made by a committee led by former Reserve Bank of India Governor C. Rangarajan.

About MGNREGA:

- The scheme was introduced in 2005 as a social measure that guarantees “the right to work”. The key tenet of this social measure and labour law is that the local government will have to legally provide at least 100 days of wage employment in rural India to enhance their Quality of life.

Key objectives:

- Generation of paid rural employment of not less than 100 days for each worker who volunteers for unskilled labour. Proactively ensuring social inclusion by strengthening the livelihood base of rural poor. Creation of durable assets in rural areas such as wells, ponds, roads and canals. Reduce urban migration from rural areas.

- Create rural infrastructure by using Untapped Rural Labour.

What are the eligibility criteria for receiving the benefits under MGNREGA scheme?

- Must be Citizen of India to seek MGNREGA benefits.
- Job seeker has completed 18 years of age at the time of application.
- The applicant must be part of a local household (i.e. application must be made with local Gram Panchayat).
- Applicants must volunteer for unskilled labour.

Implementation of the Scheme:

- Within 15 days of submitting the Application or from the day work is demanded, wage employment will be provided to the Applicant.
- Right to get unemployment allowance in case employment is not provided within fifteen days of submitting the application or from the date when work is sought.
- Social Audit of MGNREGA works is mandatory, which lends to accountability and transparency.
- The Gram Sabha is the principal forum for wage seekers to raise their voices and make demands.
- It is the Gram Sabha and the Gram Panchayat which approves the shelf of works under MGNREGA and fix their priority.

21.SC questions ₹ 8 Lakh income limit for EWS Quota

Why in News?

- The Supreme Court recently asked the Government if it wants to revisit the limit of ₹8 lakh annual income fixed for determining the Economically Weaker Sections (EWS) category for reservation in NEET admissions for medical courses under the all-India quota.

About the News:

- The court was hearing a batch of petitions filed by NEET aspirants challenging a July 29 notification of the Centre announcing 27% quota to OBCs and 10% reservation to EWS in the all India quota category. The three-judge Bench did not agree with the suggestion from Additional Solicitor General, appearing for the government, to leave the “larger” issue of what led to income criterion of ₹8 lakh for the Constitution Bench. The Bench, previously asked the Centre to file an affidavit explaining the “basis” on which ₹8 lakh was arrived at as the economic cut-off to be applied uniformly across the country to identify beneficiaries

for reservation under the EWS quota. A Bench led by Justice D.Y. Chandrachud recently expressed its annoyance at the Government for not filing an affidavit explaining how it reached the ₹8 lakh figure to identify the EWS category for grant of reservation.

What is the Issue?

- The Bench said even the 103rd Amendment had said “each State will define economic backwardness with reference to income”. The court said it had been left to each State.
- The Court asked, Can we say ₹8 lakh everywhere qualifies as EWS or is there a need to have a more nuanced analysis to EWS of having different yardsticks to different parts of the country based on cost of living, HRA, etc.
- Economic parameters could change even within a single State. Earning capacity might differ from town to town within a State.
- Therefore we may have to go on broad probabilities considering the national cost of living. That is one of the index.
- It also asked that if the government had done any exercise or checked the GDP per capita for every State.

Who are “Economically Weaker Sections”?

- For the purposes of article 15 and article 16, “economically weaker sections” shall be such as may be notified by the State from time to time **on the basis of family income and other indicators of economic disadvantage.**
- Central Government of India has specified certain criteria for identifying the EWS. This will be a class distinct from the already specified classes of SCs, STs and socially and educationally backward classes (OBCs). The EWS quota applies to household with
 - ✓ Annual household income below Rs 8 lakh.
 - ✓ Agriculture land below 5 acres.
 - ✓ Residential house below 1000 sq ft.
 - ✓ Residential plot below 100 yards in notified municipality.
 - ✓ Residential plot below 200 yards in non-notified municipality area.

What are the Implications?

- The 10% reservation will be in addition to the existing cap of 50% reservation for the Scheduled Castes, Scheduled Tribes and the Other Backward Classes, taking total reservation to 60%. The quota targets the poor among the upper castes. This will be over and above 50% mandated by Constitution and hence the need for Constitution amendment Bill.

SC verdict in Indira Sawhney case:

- The proposed law would face roadblocks if challenged in the Supreme Court.
- A nine-judge Constitution Bench of the Supreme Court in the Indira Sawhney case of 1992 specifically answered the question “whether backward classes can be identified only and exclusively with reference to the economic criterion.”
- The constitution bench had categorically ruled that a backward class cannot be determined only and exclusively with reference to economic criterion.
- The bench had held that economic criterion may be a consideration or basis along with, and in addition to, social backwardness, but it can never be the sole criterion.
- The bench in its judgement declared 50% quota as the rule unless extraordinary situations “inherent in the great diversity of this country and the people” happen.
- Even then, the court stated that extreme caution is to be exercised and a special case should be made out.

What is the Centre’s Argument?

- The Centre had argued that it was every State’s prerogative to provide 10% economic reservation in State government jobs and admissions in State-run education institutions.
- Whether or not to provide reservation to the economically weaker section (EWS) of the society for appointment in State government jobs and for admission to State government educational institutions, as per provisions of the newly inserted Articles 15(6) and 16(6) of the Constitution, is to be decided by the State Government Concerned.

22.Bengal can’t bar CBI from Probing Crimes in a state, Centre tells SC

Why in News?

- The Union Government recently told the Supreme Court that Mamata Banerjee’s government in West Bengal does not have any “absolute” power to keep the Central Bureau of Investigation (CBI) from Investigating Crimes inside the State.

About the News:

- The West Bengal government, in its original civil suit under Article 131 of the Constitution, has referred to the provisions of the Delhi Special Police Establishment Act 1946 and said that the Central agency has been proceeding with investigations and filing FIRs without getting the nod from the State government as mandated under the statute.
- The CBI has lodged multiple FIRs in cases of post-poll violence in West Bengal. The Supreme Court had issued notice in the suit in early September.

- The State government, in its plea, has sought a stay of investigation in the FIRs lodged into post-poll violence cases by the CBI in pursuance of the Calcutta High Court order.
- The plea said that as the general consent given to the Central agency by the West Bengal government had been withdrawn, the FIRs lodged could not be proceeded with.
- The State government has filed the original civil suit under Article 131 of the Constitution under which the top court has original jurisdiction to deal with any dispute between the Centre and a State. The Union Government, through the Department of Personnel and Training, was responding to a suit filed by the West Bengal Government against the Union of India under Article 131 of the Constitution.
- The Centre said that “no power, not even the Union government”, has the authority to rattle the autonomy of the premier agency to conduct investigations, especially in the cases of post-poll violence transferred to it by the Calcutta High Court, in which the State Police is under a Cloud.

Types of Consent Given by State Government:

- There are two types of consent for a probe by the CBI. These are: general and specific.
- When a state gives a general consent (Section 6 of the Delhi Special Police Establishment Act) to the CBI for probing a case, the agency is not required to seek fresh permission every time it enters that state in connection with investigation or for every case.
- When a general consent is withdrawn, CBI needs to seek case-wise consent for investigation from the concerned state government. If specific consent is not granted, the CBI officials will not have the power of police personnel when they enter that state.
- This hurdle impedes seamless investigation by the CBI. A general consent is given to facilitate that seamless investigation in a case of corruption or Violence.

Issue of Withdrawal of General Consent by States:

- Recently it has been seen that various states like Andhra Pradesh and West Bengal governments have withdrawn their general consent as a result of tussle between Centre and States.

Impact of Withdrawal:

- It means the CBI will not be able to register any fresh case involving a central government official or a private person stationed in the states who withdrew their general consent, without getting case-specific consent. In simple terms withdrawal of general consent simply means that CBI officers will lose all powers of a police officer as soon as they enter the state unless the state government has allowed them.

- It will have no impact on investigation of cases already registered with CBI as old cases were registered when General Consent existed.

About Delhi Special Police Establishment Act:

- The Central Bureau of Investigation traces its origin to the Special Police Establishment (SPE) which was set up in 1941 by the Government of India.
- The functions of the SPE then were to investigate cases of bribery and corruption in transactions with the War & Supply Dept. Of India during World War II.
- Even after the end of the War, the need for a Central Government agency to investigate cases of bribery and corruption by Central Government employees was felt.
- The Delhi Special Police Establishment Act was therefore brought into force in 1946. The CBI's power to investigate cases is derived from this Act.

23.Nearly 700 Detained and put under Public Safety Act in J&K

Why in News?

- Post-civilian killings and in the days running up to Union Home Minister Amit Shah's visit to Srinagar, around 700 people have been detained in Jammu and Kashmir, including a few under the stringent Public Safety Act (PSA).

What Happens after PSA is used?

- Within four weeks of passing the detention order, the government has to refer the case to an Advisory Board. This Advisory Board will have to give its recommendations within eight weeks of the order.
- If the Board thinks that there is cause for preventive detention, the government can hold the person up to two years.
- The person detained has limited rights. Usually when a person is arrested, they have the right to legal representation and can challenge the arrest. But, when a person is arrested under the PSA, they do not have these rights before the Advisory Board unless sufficient grounds can be established that the detention is illegal. There have been cases where the High Court has interfered and quashed the detention.
- According to Section 13(2), the detaining authority need not even inform the detained individual as to the reason for the action, if it decides that it goes against Public Interest.

What is the J&K PSA?

- The Jammu and Kashmir Public Safety Act (PSA) received the assent of the J&K Governor on April 8, 1978.

- The Act was introduced as a tough law to prevent the smuggling of timber and keep the smugglers “out of circulation”.
- The law allows the government to detain any person above the age of 16 without trial for a period of Two Years.
- The PSA allows for administrative detention for up to two years “in the case of persons acting in any manner prejudicial to the security of the State”, and for administrative detention up to one year where “any person is acting in any manner prejudicial to the maintenance of public order”. Detention orders under PSA can be issued by Divisional Commissioners or District Magistrates.
- Section 22 of the Act provides protection for any action taken “in good faith” under the Act: “No suit, prosecution or any other legal proceeding shall lie against any person for anything done or intended to be done in good faith in pursuance of the provisions of this Act.”
- Under Section 23 of the Act, the government is empowered to “make such Rules consistent with the provisions of this Act, as may be necessary for carrying out the objects of this Act”.

Why is it often Referred to as a “Draconian” Law?

- Right from the beginning, the law was misused widely, and was repeatedly employed against political opponents by consecutive governments until 1990. After the emergence of militancy, the J&K government frequently invoked the PSA to crack down on separatists.
- In August 2018, the Act was amended to allow individuals to be detained under the PSA outside the state as well.
- The detaining authority need not disclose any facts about the detention “which it considers being against the public interest to disclose”.
- The terms under which a person is detained under PSA are vague and include a broad range of activities like “acting in any manner prejudicial to the security of the State” or for “acting in any manner prejudicial to the maintenance of public order”.
- The vagueness provided in the act gives unbridled powers to the authorities. The detainees, therefore, are effectively debarred from contesting the legality of their detention.
- PSA does not provide for a judicial review of detention. To checkmate the J&K High Court orders for release of persons detained under the act the state authorities issue successive detention orders.
- This ensures prolonged detention of people.

- PSA has been used against human rights activists, journalists, separatists and others who are considered as a threat to the law & order. Right to dissent is stifled by these Acts.

Way Forward:

- The report of the Group of Interlocutors for Jammu and Kashmir held that the sweeping powers in Public Safety Act make it open to misuse. It recommended:
 - ✓ The detention period should range from one week for minor offences to one month for major offences.
 - ✓ Assuming that actions ‘prejudicial to the security of the State’ constitute far graver offences, three months’ detention should be ample for proceeding to trial.
 - ✓ Juveniles should not be held under the PSA at all.
- Now that the state has become a union territory, PSA should have been brought in line with the all-India legislation.
- Regional leaders remain India’s best bet in J&K; their continuing detention will not go well in pursuance of establishing peace and finding a political solution in J&K.
- The Supreme Court has held that in order to prevent misuse of this potentially dangerous power, the law of preventive detention has to be strictly construed and meticulous compliance with the procedural safeguards is mandatory and vital.
- If citizens’ right to criticise a government becomes a law and order threat, the future of the republic as a functioning democracy becomes an Open Question.

24. Kerala urges Tamil Nadu to draw Mullaperiyar Water

Why in News?

- Kerala Chief Minister Pinarayi Vijayan has written to his Tamil Nadu counterpart M.K. Stalin, stressing the “urgent need for the gradual release of water from the Mullaperiyar dam through the tunnel to Tamil Nadu”.

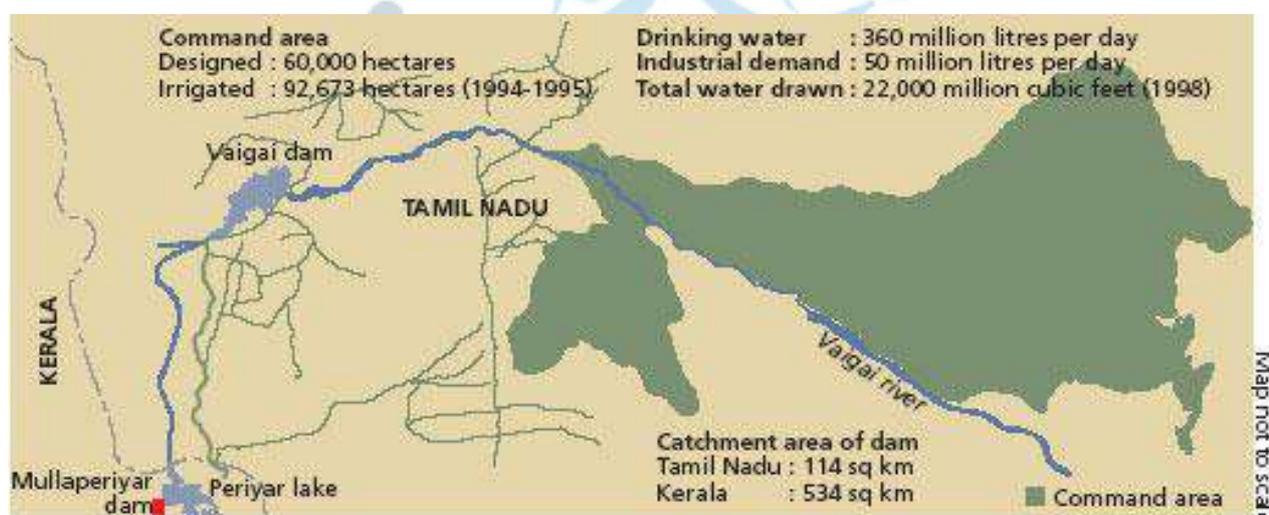
About Mullaperiyar Dam:

- The Mullaperiyar Dam is a masonry gravity dam on the Periyar River in the Indian state of Kerala.
- The dam situated at the confluence of the Mullayar and Periyar rivers
- It is located 881 m (2,890 ft) above mean sea level, on the Cardamom Hills of the Western Ghats in Thekkady, Idukki District of Kerala, South India.
- It was constructed between 1887 and 1895 by John Pennycuick and also reached in an agreement to donate water eastwards to the Madras Presidency area (present-day Tamil Nadu). The Periyar National Park in Thekkady is located around the dam’s reservoir.

- The dam is located in Kerala on the river Periyar, but is operated and maintained by Tamil Nadu state.
- Dam was given to British-ruled Madras Presidency on a 999-year lease in 1886.
- The agreement was renewed in 1970.
- Tamil Nadu was given rights to the land and the water from the dam as well as the authority to develop hydro-power projects at the site, and Kerala would receive rent in return.

About Periyar River:

- The Periyar River is the longest river in the state of Kerala with a length of 244 km.
- It is also known as 'Lifeline of Kerala' as it is one of the few perennial rivers in the state.
- A perennial river is a channel that has continuous flow in parts of its stream bed all year round.
- Periyar River originates from Sivagiri hills of Western Ghats and flows through the Periyar National Park. The main tributaries of Periyar are Muthirapuzha, Mullayar, Cheruthoni, and Perinjankutti.



Source: A Mohanakrishnan 1997, *History of the Periyar dam with century long performance*, Central Board of Irrigation and Power, New Delhi

Mullaperiyar dam is in Kerala, Tamil Nadu its main beneficiary

What is the Controversy?

- For Tamil Nadu, the Mullaperiyar dam and the diverted Periyar waters act as a lifeline for Theni, Madurai, Sivaganga and Ramnad districts, providing water for irrigation and drinking, and also for generation of power in Lower Periyar Power Station.
- Tamil Nadu has insisted on exercising its unfettered rights to control the dam and its waters, based on the 1886 lease agreement.

- Kerala has pointed out the unfairness in the 1886 lease agreement and has challenged its validity.
- However, safety concerns posed by the 119-year-old dam to the safety of the people of Kerala in the event of a dam collapse have been the focus of disputes from 2009 onwards.
- Kerala's proposal for decommissioning the dam and constructing a new one was challenged by Tamil Nadu.
- Idukki district, where the dam is located, is earthquake-prone and has experienced multiple low-intensity quakes. So, the dam is situated in a seismically active zone.
- A 2009 report by IIT Roorkee stated that the dam "was likely to face damage if an earthquake of the magnitude of 6.5 on the Richter scale struck its vicinity when the water level is at 136 feet". It poses danger to life and property to three million people living in the vicinity of the reservoir living downstream.
- In early August 2018, on Mr. Joy's plea, the court agreed with the conclusion of the disaster management sub-committee that the water level in the reservoir should be maintained two or three feet below the permissible limit of 142 feet till August 31 as an immediate precaution to guard against floods or other disasters.
- The sub-committee had met on an urgent basis in the aftermath of the deluge that ravaged Kerala where the dam is located. It informed the court that the water level in the reservoir was 139.998 feet.

What is the Current Issue?

- Mr. Vijayan said 2,109 cusecs of water was accumulating in the reservoir even after diversion from the Tamil Nadu side.
- Given the current inflow, the water level would reach the safety threshold of 142 feet if the rain intensified. So, he requested Mr. Stalin to "give immediate directions to the authorities to ensure that the maximum quantity of water is drawn from Mullaperiyar dam through the tunnel to Vaigai dam and gradually release the water downstream".
- He said rainfall was heavy in the catchments of the Mullaperiyar Dam. The water level had touched 133.45 feet on October 18. Soon, the level reached the red alert level in Cheruthoni, compelling the government to open three dam shutters. It also released water from the Edamalayar dam.
- Mr. Vijayan said heavy flooding had caused loss of life and severe damage in Kerala from October 16 and reminded Mr. Stalin of the historically warm relations between people of both States.

25.SC seeks Affidavit on Central Vista

Why in News?

- The Supreme Court recently asked the Government to explain in an affidavit the necessity of a proposed change in land use from bus terminal and neighbourhood park to house the new official residences of the Vice-President and the Prime Minister as part of the ambitious Central Vista Redevelopment Plan.

What is the Issue?

- The SC Bench asked the government, represented by Solicitor General Tushar Mehta, to file a short affidavit with its response on the necessity for the modification in the plan.
- The hearing was based on a petition filed by Rajiv Suri, who said his plea was restricted to the proposed modification of land use in plot number one.
- The petition has questioned the validity of a notification issued by the Ministry of Housing and Urban Affairs on October 28, 2020, notifying the change in land use by proposing modification to Zonal Development Plan of Zone 'D' for plot number one in the Central Vista area of Lutyens Delhi.
- The petitioner contended that the recreational area is proposed to be modified to residential area. It has not demonstrated any public interest in the proposed change in land use here.

What is a land use Change and a Recreational Area?

- Land use change is a process which transforms the natural landscape by direct human-induced land use such as settlements, commercial and economic uses and forestry activities.
- It impacts the overall environment in terms of greenhouse gas emission, land degradation and climate change. The concept of the Green spaces or recreational area in the urban areas signifies the planning and development of the urban areas along with provision for the forest, wildlife, scrub grass, wetlands, river catchment and buffer areas.
- These green spaces are not only provides the health and psychological benefits but actually filter the air, provides oxygen and improves the micro climate of the area which are prerequisite for the sustainable development.

About Central Vista:

- In December, 1911, King George V made an announcement in Delhi Durbar (a grand assembly) to shift the capital of India from Calcutta to Delhi.
- Delhi Durbar was hosted to mark the coronation of King George V.

- The task of constructing a new city was given to Edwin Lutyens, known for his strong adherence to European Classicism and Herbert Baker, a prominent architect in South Africa. Herbert Baker is also the architect of the Union buildings at Pretoria, South Africa.
- Parliament House building was designed by both Lutyens and Baker.
- Rashtrapati Bhavan was designed by Edwin Lutyens.
- The Secretariat which includes both north and south block was designed by Herbert Baker.

Architectural Features of the Building:

- The foundation stone of the Parliament House was laid on February 12, 1921 by the Duke of Connaught.
- Construction of the building was completed in 1927 and was inaugurated by the then Governor-General of India, Lord Irwin.
- The shape of the building is circular, which is based on the Chausath Yogini temple of Morena, Madhya Pradesh.
- The building has a Central Chamber which is surrounded by the semicircular halls that were constructed for the sessions of the Chamber of Princes (now used as the Library Hall), the State Council (now used for the Rajya Sabha), and the Central Legislative Assembly (now used for the Lok Sabha).
- The architectural design of the building is a perfect mix of ancient Indian tradition and modern amenities.
- The building hosts the Parliament House, the Reception Office Building, the Library Building, the Parliament House Annexe along with huge lawns and Artificial Ponds.
- The structure is enclosed by an ornamental red sandstone walls and 12 iron gates.
- The building was declared a Grade-I heritage property in 2009.

Why New Building is required now?

- There is a shortage of working and parking space, amenities and services.
- The building no longer supports added demands of space and security.
- There are no chambers for MPs and situation would further worsen if there is an increase in the number of seats.
- The buildings constructed over 100 years ago, such as the North and South blocks are not earthquake-resistant.
- The Parliament House building has Remarkable Symbolic value. It embodies the spirit of Indian democracy. Hence, it would be advisable to reshape the Parliament building by imbining the composite culture and rich Architectural Legacy of India.

26. Supreme Court holds order on quota in Promotions

Why in News?

- The Supreme Court recently reserved its judgment in a batch of petitions seeking firm guidelines and basis for granting reservation in promotions for Scheduled Caste/Scheduled Tribe candidates in Government jobs.

About the News:

- A Bench had recently heard Attorney General submit that 75 years of Independence had not been able to bring members of the Scheduled Castes and Scheduled Tribes on a par with the forward classes of society. Mr. Venugopal reiterated that it was still tough for a member of the SC/ST to get 'Group A' category jobs.
- In the previous hearing, the Bench itself had referred to records filed before it to note that there was low representation of SC/ST category in Group A jobs.
- Instead of improving the situation in the Group A ranks, the court had said, efforts were on to ensure adequate representation in Groups B and C.

What are the Constitutional Provisions related to Reservations?

- **Article 16(4)** empowers the state to make any provision for the reservation of appointments or posts **in favour of any backward class of citizens** which, in the opinion of the state, is not adequately represented in the services under the state.
- By way of the **77th Amendment Act**, a new **clause (4A)** was added to **Article 16**, empowering the state to make provisions for reservation in matters of promotion **to Scheduled Caste/Scheduled Tribe employees** if the state feels they are not adequately represented in services. Article 335 recognises that special measures need to be adopted for considering the claims of SCs and STs in order to bring them to a level-playing field.

What are the Court's Earlier Rulings?

- In its landmark 1992 decision in *Indra Sawhney vs Union of India*, the Supreme Court had held that reservations under **Article 16(4)** could only be provided at the time of entry into government service but not in matters of promotion.
- It added that the principle would operate only prospectively and not affect promotions already made and that reservation already provided in promotions shall continue in operation for a period of five years from the date of the judgment.
- It also ruled that the creamy layer can be and must be excluded.

- On June 1995, Parliament adopted the seventy-seventh amendment by which clause (4A) was inserted into Article 16 to enable reservation to be made in promotion for SCs and STs.
- The validity of the seventy-seventh and eighty-fifth amendments to the Constitution and of the legislation enacted in pursuance of those amendments was challenged before the Supreme Court in the Nagaraj case. Upholding the validity of Article 16 (4A), the court then said that it is an enabling provision. “The State is not bound to make reservation for the SCs and STs in promotions. But, if it seeks to do so, it must collect quantifiable data on three facets – the backwardness of the class; the inadequacy of the representation of that class in public employment; and the general efficiency of service as mandated by Article 335 would not be affected”. The court ruled that the constitutional amendments do not abrogate the fundamentals of equality.

What is the Supreme Court’s Latest Ruling Regarding the issue?

- In February 2020, the SC said that “Reservation in promotion in public posts **cannot be claimed as a fundamental right**”.
- Articles 16 (4) and 16 (4-A) of the Constitution does not confer individuals with a fundamental right to claim reservation in promotion.
- It only empowers the State to make a reservation in matters of appointment and promotion in favour of the **backward class and SC’s/ST’s** respectively, **only if in the opinion of the State they are not adequately represented** in the services of the State.
- **State Governments are not bound to make a reservation** and have discretion in Providing Reservations.
- The judgment also noted that **even the courts could not issue a mandamus** directing the States to Provide Reservation.

What is its significance?

- The provision is an aid of fostering the real and substantive right to equality to the SCs and STs.
- It protects the authority of the Union and the States to adopt any of these special measures, to effectuate a realistic (as opposed to a formal) consideration of their claims to appointment in services and posts under the Union and the states.
- It also emphasizes that the need to maintain the efficiency of administration cannot be construed as a fetter on adopting these special measures designed to uplift and protect the welfare of the SCs and STs.

Need of an Hour:

- Centuries of discrimination and prejudice suffered by the SCs and STs in a feudal, caste-oriented societal structure poses real barriers of access to opportunity.
- The provision contains a realistic recognition that unless special measures are adopted for the SCs and STs, the mandate of the Constitution for the consideration of their claim to appointment will remain Illusory.

27.Updated NPR form appears to retain Contentious Questions

Why in News?

- According to a document compiled by a committee under the Registrar General of India and shared with District Census officers, the latest form of the National Population Register (NPR) appears to have retained contentious questions such as “mother tongue, place of birth of father and mother and last place of residence”.

About the News:

- Though NPR was first compiled in 2010 and updated in 2015, the new questions were part of a trial exercise involving 30 lakh respondents in September 2019.
- Along with Census 2021, the database of NPR collected in 2010 and updated in 2015 would be further updated in the first phase of census.
- The NPR schedule to be used in Census 2021 is given at Annexure X. So far, the Government has not officially released the NPR schedule.
 - ✓ According to the Annexure: “National Population Register 2020”, the respondent will have to specify the “name of State and district” if the place of birth of father and mother is in India and mention the country’s name if not born here.
- The form will collect details on 14 parameters of all family members. The sub-heads include passport number, relationship to head of the family, whether divorced/widowed or separated, mother tongue, if non-worker, cultivator, labourer, government employee, daily wage earner among others.
- The form also has a column on Aadhar, mobile phone, Voter ID and driving license number, which are to be provided if available with the respondent.

What is the Concern?

- Many Opposition-ruled States have opposed the updation of the NPR due to its link with the proposed National Register of Citizens (NRC) and the yet to be implemented Citizenship Amendment Act (CAA).

- According to Citizenship Rules framed in the year 2003, NPR is the first step towards compilation of National Register of Indian Citizens (NRIC) or NRC.
- The CAA passed by the Parliament on December 11, 2019 allows citizenship on basis of religion to six undocumented communities from Pakistan, Afghanistan and Bangladesh who entered India on or before December 31, 2014.
- There are apprehensions and fears that the CAA followed by a country-wide NRC will benefit non-Muslims excluded from the proposed citizens' register, while excluded Muslims will have to prove their citizenship.
- However, the government has denied that CAA and NRC are linked and that there are currently any plans to compile a countrywide NRC.

About the National Population Register (NPR):

- The NPR is a database containing a list of all usual residents of the country. Its objective is to have a comprehensive identity database of people residing in the country.
- It is generated through house-to-house enumeration during the "house-listing" phase of the census, which is held once in 10 years.
- The last census was in 2011, and the next will be done in 2021 (and will be conducted through a mobile phone application).
- A usual resident for the purposes of NPR is a person who has resided in a place for six months or more and intends to reside there for another six months or more

How it is different from the Census?

- The census involves a detailed questionnaire and there were 29 items to be filled up in the 2011 census.
- They aimed at eliciting the particulars of every person, including age, sex, marital status, occupation, birthplace, mother tongue, religion, whether they belonged to any SC or ST etc. On the other hand, NPR collects basic demographic data and biometric particulars.
- Once the basic details of the head of the family are taken by the enumerator, an acknowledgement slip will be issued. This slip may be required for enrolment in NPR, whenever that process begins.
- The details will be recorded in every local (village or ward), sub-district (tehsil or taluk), district and state level.
- Once the details are recorded, there will be a population register at each of these levels. Together, they constitute the National Population Register.

What is the legal basis for the NPR?

- While the census is legally backed by the Census Act, 1948, the NPR is a mechanism outlined in a set of rules framed under the Citizenship Act, 1955.
- Section 14A was inserted in the Citizenship Act, 1955, in 2004, providing for the compulsory registration of every citizen of India and the issue of a “national identity card” to him or her.
- It also said the Central government may maintain a “National Register of Indian Citizens”.
- The Registrar General India shall act as the “National Registration Authority” (and will function as the Registrar General of Citizen Registration).
- Incidentally, the Registrar General is also the country’s Census Commissioner.

28. Centre wants to keep Birth, Death Database

Why in News?

- The Centre has proposed amendments to a 1969 law that will enable it to “maintain the database of registered birth and deaths at the National Level”.

About the News:

- Presently, the registration of births and deaths is done by the local registrar appointed by States. It is proposed that the Chief Registrar (appointed by the States) would maintain a unified database at the State level and integrate it with the data at the “national level,” maintained by the Registrar General of India (RGI). **The amendments will imply that the Centre will be a parallel repository of data.**
- The database may be used to update the Population Register and the electoral register, and Aadhaar, ration card, passport and driving licence databases, says the proposed amendment to the Registration of Births and Deaths Act (RBD), 1969.

About Registration of Birth and Death rules 1969:

- The registration of births, deaths and still births are compulsory, in all parts of the Country.
- The normal period of 21 days (from the date of occurrence) has been prescribed for reporting the birth, death and still birth events.
- If the event of a birth or death is reported for registration to the prescribed authority within the normal period of 21 days, no fee would be charged.

- The responsibilities for reporting the events have been prescribed separately for domiciliary events as well as Institutional events:
 - ✓ In respect of birth or death occurred in a house, it is the duty of the Head of the house/household or nearest relative of the head present in the house or in the absence of any such person, the oldest male person present therein during the said period is responsible to report the event to the concerned Registrar/ sub Registrar.
 - ✓ These events can also be reported through the prescribed Notifiers such as Anganwadi Workers, ANM's, ASHA's and others.
 - ✓ In respect of birth or death that occurred in a hospital, health centre, Maternity or nursing home or other such institutions, the medical officer In-charge or any person authorized by him on this behalf is responsible for reporting.
- Under the provision of Section 7 of the RBD Act, the Registrars of Births and Deaths are appointed for each local area comprising the area within the jurisdiction of the Municipality, Panchayat or other local authority.
- The Sub- Registrars are also appointed under section 7(5) of the Act and assigned to them any or all powers of Registrars.
- The Registrars / Sub Registrars are deemed to be the public servant under section 21 of the Indian Penal Code.
- In Rural areas following have been appointed as Registrar of Births and Death:
 - ✓ Panchayat Secretaries/Karmi/Gram Sevak in 15 States and 3 UTs.
 - ✓ Medical Officer In-charge or equivalent in 7 States and 3 UTs– (Assam, Haryana, Meghalaya, Orissa, and Punjab, Sikkim, Manipur (Partly), A & N Island, Delhi and Lakshadweep)
 - ✓ Village Accountants / Village Administrative Officers in 2 States - Karnataka and Tamil Nadu. SHO/Police Officials in Jammu & Kashmir and Chandigarh UT (Rural).
 - ✓ School Teachers in Mizoram and Nagaland. Circle Officer/Village Level Workers in Arunachal Pradesh.
- **In Urban Areas:** The Municipal Health Officer, Health Officer or Equivalent Officers are appointed as Registrar of births and deaths.
- In case, any child born outside India, his/her birth would be registered under the Citizenship Act 1955 and Citizens (Registration at Indian consulates) Rules, 1956 at the Indian Missions.

- However, under Section 20 of the RBD Act, if the parents of the child return to India with a view to settling therein, the said birth can be registered within sixty days from the date of arrival of the child in India at the place of settling.

What are the new changes proposed?

- A new Section 3 A is proposed to be inserted in the Act, which says, “The Registrar General, India shall maintain the database of registered births and deaths at the national level, that may be used, with the approval of the Central government, to update the Population Register prepared under the Citizenship Act, 1955; electoral registers or electoral rolls prepared under the Representation of the People Act, 1951; Aadhaar database prepared under the Aadhaar Act, 2016; ration card database prepared under the National Food Security Act, 2013; passport database prepared under the Passport Act; and the driving licence database under the Motor Vehicles (Amendment) Act, 2019, and other databases at the national level subject to proviso of Section 17 (1) of the RBD Act, 1969.”
- Another proposed change is the appointment of “Special Sub-Registrars, in the event of disaster, with any or all of his powers and duties for on the spot registration of deaths and issuance of extract thereof, as may be prescribed.”

What are its Implications?

- If the amendments are implemented, the Centre could use the data to update the National Population Register (NPR), first prepared in 2010 and revised through door-to-door enumeration in 2015.
- The NPR already has a database of 119 crore residents and under the Citizenship Rules, 2003, it is the first step towards the creation of the National Register of Citizens (NRC).

About the Civil Registration System (CRS):

- It is the process of continuous, permanent, compulsory and universal recording of births and deaths in the country.
- The Registration of Births and Deaths Act, 1969 (Act No. 18 of 1969) provides for the compulsory registration of births and death
- The data generated through a complete and up-to-date CRS is essential for socio-economic planning.
- The CRS moved online relatively recently (between five and three years ago in most States), and State-level portals now display data for every day from January 1, 2018 to the present day.

Why is CRS Data Vital?

- Countries need to know how many people are born and die each year – and the main causes of their deaths – in order to have well-functioning health systems. The only way to track every citizen is through civil registration.
- Civil registration provides the basis for the individual legal identity of a citizen and helps the government give them access to their rights as a citizen, including entitlements to social security benefits if any. For the Government, the requirement of a complete CRS system is a must as the data generated through a complete and up-to-date CRS is essential for socio-economic planning and evaluating the effectiveness of various social sector programs. At the national level, the vital statistics data generated through Civil Registration is also quite useful for Medical Research and in the study of sex ratio, mortality and morbidity rates and also in the study of causes of deaths.

3.1. POLITY & GOVERNANCE SNIPPETS

1. One Sun, One World, One Grid (OSOWOG)

Why in News?

- India and the UK are likely to announce a joint declaration on “one sun, one world, one grid” – or OSOWOG at the upcoming Conference of Parties (COP26).

Highlights:

- The UN Climate Change Conference, or COP26, is scheduled to be held between 31st October and 12th November in Scotland.
- The concept of OSOWOG is what the British have called a green grid.
- The idea behind the concept is a trans-national electricity grid supplying solar power across the globe. The vision behind the OSOWOG is ‘The Sun Never Sets’ and is a constant at some geographical location, globally, at any given point of time.
- This is by far one of the most ambitious schemes undertaken by any country (India) and is of global significance in terms of sharing economic benefits.
- It has been taken up under the technical assistance program of the World Bank.
- The OSOWOG plan may also leverage the International Solar Alliance (ISA), co-founded by India that has 80 Countries as Members.
- Help all the participating entities in attracting investments in renewable energy sources as well as utilizing skills, Technology and Finances.

- Lead to reduced project costs, higher efficiencies and increased asset utilization for all the participating entities.
- Resulting economic benefits would positively impact poverty alleviation and support in mitigating water, sanitation, food and other socio-economic challenges.
- Allow National Renewable energy management centres in India to grow as regional and global management centres.
- This move, during the time of the Covid-19 pandemic, gives India the opportunity to be seen as taking a lead in evolving global strategies.

2. SACRED Portal

Why in News?

- In a first of its kind move, the government has come up with an online employment exchange platform to cater to Senior Citizens Seeking Job Opportunities.

Highlights:

- The portal developed by the Ministry of Social Justice and Empowerment is named Senior Able Citizens for Re-Employment in Dignity (SACRED).
- Citizens above 60 years of age can register on the portal and find jobs and work opportunities.
- The Employment Portal will serve not only the senior citizens seeking employment, but also the employers, the Self Help Groups (SHGs), the senior citizens gaining skills, and other agencies or individuals. An amount of Rs. 10 Cr would be provided for funding for the platform development along with maintenance grant of @ Rs. 2 Cr per year for 5 years.
- The portal is shaped on the recommendations of the Empowered Expert Committee (EEC) report on startups for the elderly.
- There is a sharp rise in India's elderly population and thrust is on creating an ecosystem that supports their needs more holistically.
- There are 110 million elders in this country, who are above the age of 60.
- According to the Longitudinal Ageing Study of India (LASI), India will have over 319 million elderly by 2050 compared to the 120 million now.
- More than 50% senior citizens are found active as per the LASI report 2020. Many senior citizens having experience, time and energy can be used by the business enterprises looking for stable Employees with Experience.

3. 2nd Phase of SBM-U and AMRUT Mission

Why in News?

- The PM has launched the second phase of the Swachh Bharat Mission-Urban and Atal Mission for Rejuvenation and Urban Transformation.

Swachh Bharat Mission-Urban 2.0:

- The Mission will focus on ensuring complete access to sanitation facilities to serve additional populations migrating from rural to urban areas in search of employment and better opportunities over the next 5 years.
- Complete liquid waste management in cities in less than 1 lakh population to ensure that all wastewater is safely contained, collected, transported, and treated so that no wastewater pollutes our water bodies.
- Source segregation- Under Sustainable Solid Waste Management, greater emphasis will be on source segregation.
- Material Recovery Facilities and waste processing facilities will be set up, with a focus on phasing out single-use plastic.
- Construction & demolition waste processing facilities will be set up.
- Mechanical sweepers deployed in National Clean Air Programme cities and in cities with more than 5 lakh population.
- Remediation of all legacy dumpsites will be another key component of the Mission.

AMRUT 2.0:

- **Water Management:** It will build upon the progress of AMRUT to address water needs, rejuvenate water bodies, better manage aquifers, reuse treated wastewater, thereby promoting circular economy of water.
- **Water supply:** It would provide 100% coverage of water supply to all households in around 4,700 ULBs.
- **Sewerage:** It will provide 100% coverage of sewerage and septage in 500 AMRUT cities.
- Rejuvenation of water bodies and urban aquifer management: It will be undertaken to augment sustainable Fresh Water Supply.
- Recycle and reuse of treated wastewater: It is expected to cater to 20% of total water needs of the cities and 40% of industrial demand.
- Pey Jal Survekshan: It will be conducted in cities to ascertain equitable distribution of water, reuse of wastewater and mapping of water bodies.

4. Jal Jeevan Mission (JJM)

Why in News?

- The Prime Minister has recently launched the Jal Jeevan Mission (JJM) mobile application on the occasion of Gandhi Jayanti (2nd October).

Highlights:

- The PM also released the progress report of the JJM and a manual for the utilisation of the 15th Finance Commission grant for rural local bodies.
- The mobile application will provide details of water infrastructure, an Aadhaar-verified data set of beneficiaries, and water quality and contamination-related information for each village. The application aims to improve awareness among stakeholders and for greater transparency and accountability of schemes under the Jal Jeevan mission.
- The Jal Shakti ministry has been maintaining a JJM dashboard to show the coverage of tap water connections across states.
- The water quality management information system provides details of water samples received and tested across labs and states. The mobile app will bring all this data under one umbrella. Jal Jeevan Mission is launched in 2019, it envisages supply of 55 litres of water per person per day to every rural household through Functional Household Tap Connections (FHTC) by 2024. It looks to create a jan andolan for water, thereby making it everyone's priority. It comes under Jal Shakti Ministry.
- The mission ensures functionality of existing water supply systems and water connections; water quality monitoring and testing as well as Sustainable Agriculture.
- It also ensures conjunctive use of conserved water; drinking water Source Augmentation, drinking water supply System, Grey Water Treatment and its reuse.

5. Aadhaar-enabled Payment System (AePS)

Why in News?

- Recently, a series of scams have exposed the vulnerabilities of the Aadhaar-enabled Payment System (AePS).

Highlights:

- AePS is a bank led model which allows online interoperable financial transactions at PoS (Point of Sale/Micro ATM) through the Business Correspondent (BC)/Bank Mitra of any bank using the Aadhaar authentication.

- This system adds another layer of security to financial transactions as bank details would no longer be required to be furnished while carrying out these transactions.
- It was taken up by the National Payments Corporation of India (NPCI) - a joint initiative of Reserve Bank of India (RBI) and Indian Banks' Association (IBA).
- Like other micro-ATM systems, it has helped to decongest banks. It can be particularly useful to migrant workers who have no ATM facility.
- Deepening Social Security will help in deepening social services after the proliferation of cash transfer schemes from governments to vulnerable citizens.
- Enabling Last-Mile Service will ease the payments which will be done at the doorstep instead of travelling long distances.
- Interoperable system ensures that the customer is not tied to one bank's BC.
- Removing Middlemen who exploited the poor and illiterate would now be eliminated.

6. Swadesh Darshan Scheme

Why in News?

- The Swadesh Darshan Scheme, the Tourism Ministry was recently sanctioned 5 projects of Rs 325.53 crore for Buddhist Circuit Development.

Highlights:

- It has also organised a Buddhist Circuit Train FAM Tour as part of the Union government's Dekho Apna Desh initiative.
- The tour covers the destinations Gaya-Bodhgaya, Rajgir-Nalanda in Bihar as well as Sarnath-Varanasi in Uttar Pradesh.
- Swadesh Darshan, a Central Sector Scheme, was launched in 2014 -15 for integrated development of theme based tourist circuits in the country.
- This scheme is envisioned to synergise with other schemes like Swachh Bharat Abhiyan, Skill India, Make in India etc.
- Under the scheme, the Ministry of Tourism provides Central Financial Assistance (CFA) to State Governments/Union Territory Administrations for infrastructure development of circuits.
- One of the objectives of the scheme is to develop theme-based tourist circuits on the principles of high tourist value, competitiveness and sustainability in an integrated manner.

- Under the scheme, fifteen thematic circuits have been identified- Buddhist Circuit, Coastal Circuit, Desert Circuit, Eco Circuit, Heritage Circuit, Himalayan Circuit, Krishna Circuit, North East Circuit, Ramayana Circuit, Rural Circuit, Spiritual Circuit, Sufi Circuit, Tirthankar Circuit, Tribal Circuit, Wildlife Circuit.

7. BSF Powers and Jurisdiction

Why in News?

- The Ministry of Home Affairs (MHA) has extended the jurisdiction of the Border Security Force (BSF) up to 50 km inside the international borders in Punjab, West Bengal and Assam.

Border Security Force (BSF):

- The BSF is India's border guarding organization on its border with Pakistan and Bangladesh. It comes under the Ministry of Home Affairs.
- It was raised in the wake of the 1965 War on 1 December 1965 for ensuring the security of the borders of India and for matters connected therewith.
- The BSF has its own cadre of officers but its head, designated as a Director-General (DG), since its raising has been an officer from the Indian Police Service (IPS).

What are the New Modifications?

- The MHA has exercised the powers under the Border Security Force Act of 1968.
- It has thus outlined the area of BSF's jurisdiction.
- While the places marked here are within 50 km of the respective borders, this is not meant to represent the BSF's jurisdiction. At the same time, the Ministry has reduced BSF's area of operation in Gujarat from 80 km from the border, to 50 km.

Powers Exercised by BSF in its Jurisdiction:

- BSF's jurisdiction has been extended only in respect of the powers it enjoys under:
 - Criminal Procedure Code (CrPC)
 - Passport (Entry into India) Act, 1920 and
 - Passport Act, 1967

Arrest and Search:

- BSF currently has powers to arrest and search under these laws.
- It also has powers to arrest, search and seize under the NDPS Act, Arms Act, Customs Act and certain other laws.

- Its powers under these will continue to be only up to 15 km inside the border in Punjab, Assam and West Bengal, and will remain as far as 80 km in Gujarat.

Sanctions behind such Powers:

- Scarcely populated borders: At that time, border areas were sparsely populated and there were hardly any police stations for miles.
- Trans-border crimes: To prevent trans-border crimes, it was felt necessary that BSF is given powers to arrest.
- Manpower crunch: While police stations have now come up near the border, they continue to be short-staffed.

Various Issues at Borders:

- Encroachment
- Illegal Incursion
- Drug and Cattle Smuggling

Why has the Government extended the Jurisdiction?

- The objective of the move is to bring in uniformity and also to increase operational efficiency. Earlier BSF had different jurisdictions in different states.
- BSF often gets information relating to crime scenes that may be out of their jurisdiction.
- The move was also necessitated due to increasing instances of drone-dropping of weapons and drugs.

8. Graded Response Action Plan (GRAP)

Why in News?

- The Commission for Air Quality Management (CAQM) has recently said that the measures under the “very poor” and “severe” category of the Graded Response Action Plan (GRAP) will kick in only when the air quality deteriorates further and stays in prescribed levels for 48 hours.

Highlights:

- In pursuant to the Supreme Court’s order in the matter of M. C. Mehta vs. Union of India (2016) regarding air quality in the National Capital Region of Delhi, a Graded Response Action Plan has been prepared for implementation under different Air Quality Index (AQI) categories namely, Moderate & Poor, Very Poor, and Severe.
- A new category of “Severe+ or Emergency” has been added.

- The Plan was notified by the Ministry of Environment, Forests & Climate Change in 2017.
- It institutionalised measures to be taken when air quality deteriorates.
- The plan is incremental in nature - therefore, when the air quality moves from 'Poor' to 'Very Poor', the measures listed under both sections have to be followed.
- It prevents PM₁₀ and PM_{2.5} levels from going beyond the 'moderate' national AQI category.
- Till 2020, the Supreme Court-appointed Environment Pollution (Prevention & Control) Authority (EPCA) used to order States to implement GRAP measures.
- The EPCA was dissolved and replaced by the Commission for Air Quality Management (CAQM) in 2020. It is a statutory mechanism to coordinate and oversee diverse efforts to improve air quality in Delhi, Punjab, Haryana, Rajasthan and UP, with the underlying remedial approach.

9. Quantum Key Distribution (QKD)

Why in News?

- The Government has inaugurated C-DOT's (Centre for Development of Telematics) Quantum Communication Lab and unveiled the indigenously developed Quantum Key Distribution (QKD) solution.

Highlights:

- The Government has also allocated USD 1 billion for the National Mission on Quantum Technologies and Applications spanning over a period of 8 years.
- It is also called Quantum Cryptography, is a mechanism to develop secure communication.
- It provides a way of distributing and sharing secret keys that are necessary for cryptographic protocols.
- Cryptography is the study of secure communications techniques that allow only the sender and intended recipient of a message to view its contents.
- Cryptographic algorithms and protocols are necessary to keep a system secure, particularly when communicating through an untrusted network such as the Internet.
- The conventional cryptosystems used for data-encryption rely on the complexity of mathematical algorithms, whereas the security offered by quantum communication is based on the laws of Physics.
- In the QKD, encryption keys are sent as 'qubits' (or quantum bits) in an optical fibre.

- Optical fibres are capable of transmitting more data over longer distances and faster than other mediums. It works on the principle of total internal Reflections.
- QKD implementation requires interactions between the legitimate users. These interactions need to be authenticated. This can be achieved through various cryptographic means.
- QKD allows two distant users, who do not share a long secret key initially, to produce a common, random string of secret bits, called a secret key.
- The end-result is that QKD can utilize an authenticated communication channel and transform it into a secure communication channel.
- It is designed in a way that if an illegitimate entity tries to read the transmission, it will disturb the qubits – which are encoded on photons.
- This will generate transmission errors, leading to legitimate end-users being immediately informed.

10. Climate Resilience Information System and Planning (CRISP-M)

Why in News?

- The Climate Resilience Information System and Planning (CRISP-M) tool for Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) was recently launched.

Highlights:

- It will help embed climate information in the Geographic Information System (GIS) based planning and implementation of MGNREGS.
- It is a computer system that analyzes and displays geographically referenced information.
- The implementation of CRISP-M will open up new possibilities for rural communities to deal with the issues of climate change.
- This tool will be used in seven states: Bihar, Jharkhand, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha and Rajasthan.
- It is one of the largest work guarantee programmes in the world. It was launched on 2nd February 2006.
- The Mahatma Gandhi National Rural Employment Guarantee Act was passed on 23rd August 2005.
- To guarantee 100 days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work.

- Unlike earlier employment guarantee schemes, the act aims at addressing the causes of chronic poverty through a rights-based framework.
- At least one-third of beneficiaries have to be women.
- Wages must be paid according to the statutory minimum wages specified for agricultural labourers in the state under the Minimum Wages Act, 1948 (now subsumed under Code on Wages, 2019). The most important part of MGNREGA's design is its legally-backed guarantee for any rural adult to get work within 15 days of demanding it, failing which an 'unemployment allowance' must be given.
- This demand-driven scheme enables the self-selection of workers.
- There is an emphasis on strengthening the process of decentralisation by giving a significant role to the Panchayati Raj Institutions (PRIs) in planning and implementing these works.
- The act mandates Gram sabhas to recommend the works that are to be undertaken and at least 50% of the works must be executed by them.

11. Medical Termination of Pregnancy (Amendment) Act, 2021

Why in News?

- The Government has recently notified new rules under the Medical Termination of Pregnancy (Amendment) Act, 2021. The 2021 Act was passed to amend the Medical Termination of Pregnancy (MTP) Act, 1971.

Highlights:

- The gestational limit for termination of a pregnancy has been increased from 20 to 24 weeks for certain categories of women.
- A state-level medical board will be set up to decide if a pregnancy may be terminated after 24 weeks in cases of foetal malformation.
- The medical boards are to either accept or reject the proposal for medical termination of pregnancy within three days of receiving the request.
- The abortion procedure has to be done with five days of the board receiving the request for the same. The new rules will contribute towards ending preventable maternal mortality to help meet the Sustainable Development Goals (SDGs) 3.1, 3.7 and 5.6.
- SDG 3.1 pertains to reducing maternal mortality ratio whereas SDGs 3.7 and 5.6 pertain to universal access to sexual and reproductive health and rights.

- The new rules will increase the ambit and access of women to safe abortion services and will ensure dignity, autonomy, confidentiality and justice for women who need to terminate pregnancy.
- Although the new rules have increased access to abortions to some extent, they fail to correct a fundamental flaw in the MTP Act that a woman does not have the basic right to terminate a pregnancy if and when she decides.
- The formation of a state medical board raises additional concerns around their access, particularly to women from rural areas.
- The Act requires abortion to be performed only by doctors with specialisation in gynaecology or obstetrics. As there is a 75% shortage of such doctors in community health centres in rural areas, pregnant women may continue to find it difficult to access facilities for safe abortions. The society is still unable to ensure reproductive autonomy to the women, many of whom not only lack the freedom to plan pregnancies but also face multiple barriers when they seek abortions.

12. Public Sector Undertakings (PSUs)

Why in News?

- Recently, The Prime Minister dedicated the seven defence Public Sector Undertakings (PSUs), created through the restructuring of the Ordnance Factory Board (OFB), to the Nation.

Highlights:

- India's goal under 'Atmanirbhar Bharat' (self-reliant India) is to make the country, on its own, into a big Military Power.
- The Union government ordered the dissolution of the four-decade-old Ordnance Factory Board (OFB) and amalgamated 41 factories under seven new state-owned companies to manufacture defence hardware ranging from munitions to heavy weapons and vehicles.
- These new companies are headquartered in five cities.
- OFB was an umbrella body for the ordnance factories and related institutions, and was a subordinate office of the Ministry of Defence (MoD). It was a conglomerate of 41 factories, 9 training Institutes, 3 regional marketing centres and 5 regional controllers of safety.
- It was Headquartered at Kolkata.
- All employees of the erstwhile OFB (Group A, B and C) belonging to production units will be transferred to the corporate entities on deemed deputation for a period of two years without any change in their service conditions as central government staff.

- Munitions India Limited, Armoured Vehicles Nigam Limited, Advanced Weapons and Equipment India Limited, Troop Comforts Limited, Yantra India Limited, India Optel Limited, and Gliders India Limited. The concerns have been raised regarding high costs, inconsistent quality and delay in supply of OFB products by the armed forces.
- The new structure will help overcome these various shortcomings in the existing system of OFB and encourage these companies to become competitive and explore new opportunities in the market including exports.

13. What the low rank on the Global Hunger Index means for India

Why in News?

- This year's Global Hunger Index (GHI) ranks India 101 out of 116 countries for which reliable and comparable data exist.

Government's Stand:

- Is India's performance on hunger as dismal as denoted by the index or is it partly a statistical artefact?
- This question assumes immediacy, especially since the government has questioned the methodology and claimed that the ranking does not represent the ground reality.
- This calls for careful scrutiny of the methodology, especially of the GHI's components.

Understanding the GHI Methodology:

- The GHI has four components.
- The first – insufficient calorie intake – is applicable for all age groups.
- The data on deficiency in calorie intake, accorded 33% weight, is sourced from the Food and Agriculture Organization's Suite of Food Security Indicators (2021).
- The remaining three – wasting (low weight for height), stunting (low height for age) and mortality – are confined to children under five years.
- The data on child wasting and stunting (2016-2020), each accounting for 16.6% of weight, are from the World Health Organization, UNICEF and World Bank, complemented with the latest data from the Demographic and Health Surveys.
- Under-five mortality data are for 2019 from the UN Inter-Agency Group for Child Mortality Estimation.

Issues with GHI:

- The GHI is largely children-oriented with a higher emphasis on undernutrition than on hunger and its hidden forms, including micronutrient deficiencies.

- The first component — calorie insufficiency — is problematic for many reasons.
- The lower calorie intake, which does not necessarily mean deficiency, may also stem from reduced physical activity, better social infrastructure (road, transport and healthcare) and access to energy-saving appliances at home, among others. For a vast and diverse country like India, using a uniform calorie norm to arrive at deficiency prevalence means failing to recognise the huge regional imbalances in factors that may lead to differentiated calorie requirements at the State level.

Understanding the connection between stunting and wasting and ways to tackling them:

- India's wasting prevalence (17.3%) is one among the highest in the world. Its performance in stunting, when compared to wasting, is not that dismal, though. Child stunting in India declined from 54.2% in 1998–2002 to 34.7% in 2016-2020, whereas child wasting remains around 17% throughout the two decades of the 21st century. Stunting is a chronic, long-term measure of under nutrition, while wasting is an acute, short-term measure. Quite possibly, several episodes of wasting without much time to recoup can translate into stunting. Effectively countering episodes of wasting resulting from such sporadic adversities is key to making sustained and quick progress in child nutrition.
- **Way Forward:** If India can tackle wasting by effectively monitoring regions that are more vulnerable to socioeconomic and environmental crises, it can possibly improve wasting and stunting simultaneously.

Low Child Mortality:

- India's relatively better performance in the other component of GHI — child mortality — merits a mention. Studies suggest that child under nutrition and mortality are usually closely related, as child under nutrition plays an important facilitating role in child mortality. However, India appears to be an exception in this regard. This implies that though India was not able to ensure better nutritional security for all children under five years, it was able to save many lives due to the availability of and access to better health facilities.

Conclusion:

- The low ranking does not mean that India fares uniformly poor in every aspect. This ranking should prompt us to look at our policy focus and interventions and ensure that they can effectively address the concerns raised by the GHI, especially against pandemic-induced Nutrition Insecurity.

14. Farmers have Right to Protest, but can't block roads: SC

Why in News?

- The Supreme Court has said farmers protesting at Delhi borders against the three farm laws have the right to agitate but they cannot block roads indefinitely.

What is Protest?

- When a group, community, or even a person goes up to protest, it is usually to showcase their disapproval or demur against any action, policy, statement, etc of state or Government or Any Organization.
- Mostly the flow of protest is driven through political waves that also demonstrate the collective organization of people to make the government or state address their issues and take steps to overcome them.

Issues with Ongoing Protest in Delhi:

- The question as to the absolute nature of the right to protest is not even a question in the true sense here.
- We have seen the vandalism protest at Red Fort last year.
- Hence the rights mentioned above are subject to reasonable restrictions under 19 (2) and 19 (3) on grounds such as sovereignty and integrity of India, and public order.

Right to Protest in India

- The right to protest is the manifestation of three FRs:
 - ✓ Right to Freedom of Assembly
 - ✓ Right to Freedom of Association and
 - ✓ Right to Freedom of Speech
- The Constitution of India provides the right of freedom, given in Article 19 with the view of Guaranteeing individual rights that were considered vital by the framers of the Constitution.
- The Right to protest peacefully is enshrined in Article 19(1) (a) guarantees the freedom of speech and expression; Article 19(1) (b) assures citizens the right to assemble peaceably and without arms.
- **In detail: Article 19(1)**
 - ✓ It states that All citizens shall have the right:
 - a) to freedom of speech and expression;
 - b) to assemble peaceably and without arms;

- c) to form associations or unions;
- d) to move freely throughout the territory of India;
- e) to reside and settle in any part of the territory of India; and
- f) omitted
- g) to practice any profession, or to carry on any occupation, trade or business

Reasonable restrictions do exist in practice:

- Fundamental rights do not live in isolation. The right of the protester has to be balanced with the right of the commuter. They have to co-exist in mutual respect.
- Article 19(2) imposes reasonable restrictions on this.
- The court held it was entirely the responsibility of the administration to prevent Encroachments in Public Spaces.

15. Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM)

Why in News?

- Recently, as part of Azadi ka Amrit Mahotsav, a total of 152 Centre for Financial Literacy & Service Delivery (SAKSHAM Centres) across 77 districts of 13 states were launched.

SAKSHAM Centres:

- Centre for Financial Literacy & Service Delivery (CFL&SD) would act as a one stop solution/single window system for basic financial needs of Self-Help Groups (SHGs) households in rural areas.
- To provide financial literacy & facilitate delivery of financial services (savings, credit, insurance, pensions etc.) to SHG members and rural poor.
- A mobile & web-based application called “SAKSHAM” has also been developed.
- It will be used by the community resource person of the Centre to know the penetration of various financial services for each SHG & village, identify major gaps and accordingly provide training and deliver the required Financial Services.

Highlights:

- The centres were launched under Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM) of the Ministry of Rural Development.
- It is a centrally sponsored programme, launched by the Ministry of Rural Development in June 2011.
- To eliminate rural poverty through the promotion of multiple livelihoods and improved access to financial services for the rural poor households across the country.

- It involves working with community institutions through community professionals in the spirit of self-help which is a unique proposition of DAY-NRLM.
- It impacts the livelihoods through universal social mobilization by inter alia organising one-woman member from each rural poor household into Self Help Groups (SHGs), their training and capacity building, facilitating their micro-livelihoods plans, and enabling them to implement their livelihoods plans through accessing financial resources from their own institutions and the banks.
- It is implemented in a Mission mode by special purpose vehicles (autonomous state societies) with dedicated implementation support units at the national, state, district and block levels, using professional human resources in order to provide continuous and long-term handholding support to each rural poor family.

16. Jammu & Kashmir Public Safety Act (PSA), 1978.

Why in News?

- Recently, Home Minister's visit, around 700 people have been detained in the union territory of Jammu and Kashmir (J&K) and a few under the stringent Jammu & Kashmir Public Safety Act (PSA), 1978.

Highlights:

- An individual can be detained on the basis of an executive order for a maximum of two years, without trial, if their act is prejudicial to the security of the State or the maintenance of public order. Detention order is passed either by the Divisional Commissioner or the District Magistrate. The only way the administrative preventive detention order can be challenged is through a habeas corpus petition filed by relatives of the detained person.
- The High Court and the Supreme Court have jurisdiction to hear such petitions and pass a final order seeking quashing of the PSA.
- However, if the order is quashed, there is no bar on the government passing another detention order under the PSA and detaining the person again.
- There can be no prosecution or any legal proceeding against the official who has passed the order. The PSA allows for the detention of a person without a formal charge and without trial. It can be slapped on a person already in police custody; on someone immediately after being granted bail by a court. Section 8 of the PSA provides a vast number of reasons for detention, ranging from "promoting, propagating, or attempting to create, feelings of enmity or hatred or disharmony on grounds of religion, race, caste, community, or region" to incitement, instigation, abetment and actual commission of such acts.

- It leaves it to district collectors or district magistrates to decide, giving a 12-day period within which an advisory board has to approve the detention.
- No Distinction Between Minor and Major Offences:
- It allows detention for up to 1 year for disturbance of public order and 2 years for actions prejudicial to the security of the State.

17. National Steering Committee (NSC)

Why in News?

- National Steering Committee (NSC) has recently been formed for the implementation of NIPUN Bharat Mission.

Highlights:

- NIPUN (National Initiative for Proficiency in Reading with Understanding and Numeracy) Bharat Scheme was launched earlier this year as part of the National Education Policy (NEP) 2020.
- To oversee the progress of the National Mission on Foundational Literacy and Numeracy and provide Guidance on Policy Issues.
- To arrive at the target to be achieved nationally in 2026-27.
- To disseminate tools for measurement of yearly progress in the form of guidelines.
- To prepare and approve a National Action Plan (based on the State's Action Plans).
- To review programmatic and financial norms periodically to ensure they are synchronised with targets to be achieved.
- To create an enabling environment to ensure universal acquisition of foundational literacy and numeracy, so that every child achieves the desired learning competencies in reading, writing and numeracy by the end of Grade 3, by 2026-27.
- It will focus on providing access and retaining children in foundational years of schooling; teacher capacity building; development of high quality and diversified Student and Teacher Resources/Learning Materials; and tracking the progress of each child in achieving learning outcomes.
- NIPUN Bharat will be implemented by the Department of School Education and Literacy, Ministry of Education.
- A five-tier implementation mechanism will be set up at the National- State- District- Block- School level in all States and UTs, under the aegis of the centrally sponsored scheme of Samagra Shiksha.

- ‘Samagra Shiksha’ programme was launched subsuming three existing schemes: Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE).
- The aim of the scheme is to treat school education holistically, from pre-school to Class XII.
- A special package for Foundational Literacy and Numeracy (FLN) under NISHTHA (National Initiative for School Heads and Teachers Holistic Advancement) is being developed by NCERT.
- NISHTHA is a capacity building programme for "Improving Quality of School Education through Integrated Teacher Training".
- Stage-wise targets are being set in a continuum from the pre-primary or balvatika classes

18.SC sets up Committee to Examine Pegasus Allegations

Why in News?

- The Supreme Court recently appointed an expert technical committee overseen by former Supreme Court judge R.V. Raveendran to examine allegations that the Centre used Israeli software Pegasus to spy on Citizens.

About the News:

- The Apex Court stressed that the power of the state to snoop in the name of national security into the “sacred private space” of individuals is not absolute.
- The court said it consciously avoided “political thickets” but could not cower when allegations involved a “grave” threat to the privacy and free speech of the entire citizenry and raised the possibility of involvement of the Government, or even a foreign power, behind the surveillance. The court said the petitions filed before it, including ones by veteran journalists N. Ram and Sashi Kumar, Editors Guild of India and victims of alleged snooping, had raised “Orwellian concerns” about an all-pervasive technology like Pegasus.
- The court said India could not remain mute in the face of Pegasus allegations when other countries across the globe had taken them seriously.

What is Pegasus?

- It is a type of malicious software or malware classified as a spyware designed to gain access to devices, without the knowledge of users, and gather personal information and relay it back to whoever it is that is using the software to spy.
- Pegasus has been developed by the Israeli firm NSO Group that was set up in 2010.

- The earliest version of Pegasus discovered, which was captured by researchers in 2016, infected phones through what is called spear-phishing – text messages or emails that trick a target into clicking on a malicious link. Since then, however, NSO’s attack capabilities have become more advanced. Pegasus infections can be achieved through so-called “zero-click” attacks, which do not require any interaction from the phone’s owner in order to succeed.
- These will often exploit “zero-day” vulnerabilities, which are flaws or bugs in an operating system that the mobile phone’s manufacturer does not yet know about and so has not been able to fix.

Who were the Targets?

- Human Rights activists, journalists and lawyers around the world have been targeted with phone malware sold to authoritarian governments by an Israeli surveillance firm.
- Indian ministers, government officials and opposition leaders also figure in the list of people whose phones may have been compromised by the spyware.
- In 2019, WhatsApp filed a lawsuit in the US court against Israel's NSO Group, alleging that the firm was incorporating cyber-attacks on the application by infecting mobile devices with Malicious Software.

Recent Steps Taken in India against Cyber Crime:

- **Cyber Surakshit Bharat Initiative:** It was launched in 2018 with an aim to spread awareness about cybercrime and building capacity for safety measures for Chief Information Security Officers (CISOs) and frontline IT staff across all government departments.
- **National Cyber security Coordination Centre (NCCC):** In 2017, the NCCC was developed to scan internet traffic and communication metadata (which are little snippets of information hidden inside each communication) coming into the country to detect real-time cyber threats.
- **Cyber Swachhta Kendra:** In 2017, this platform was introduced for internet users to clean their computers and devices by wiping out viruses and malware.
- **Indian Cyber Crime Coordination Centre (I4C):** I4C was recently inaugurated by the government.
- **National Cyber Crime Reporting Portal** has also been launched pan India.
- **Computer Emergency Response Team - India (CERT-IN):** It is the nodal agency which deals with cybersecurity threats like hacking and phishing.

- **Legislations in India:**
 - ✓ Information Technology Act, 2000.
 - ✓ Personal Data Protection Bill, 2019.

International Mechanisms:

- **International Telecommunication Union (ITU):** It is a specialized agency within the United Nations which plays a leading role in the standardization and development of telecommunications and cyber security issues.
- **Budapest Convention on Cybercrime:** It is an international treaty that seeks to address Internet and computer crime (cybercrime) by harmonizing national laws, improving investigative techniques, and increasing cooperation among nations. It came into force on 1st July 2004. India is not a signatory to this convention.

19. Unified Database of Birth and Death

Why in News?

- The Centre has proposed amendments to a 1969 law that will enable it to “maintain the database of registered birth and deaths at the national level”.

Registration of Births and Deaths Act (RBD), 1969:

- The registration of births, deaths and stillbirths are compulsory under the provisions of RBD Act in all parts of the Country.
- The normal period of 21 days (from the date of occurrence) has been prescribed for reporting the birth, death and stillbirth events.

Why need Amendment?

- The database may be used to update the Population Register and the electoral register, and Aadhaar, ration card, passport and driving licence databases after the amendment.
- Presently, the registration of births and deaths is done by the local registrar appointed by States.

What are the Proposed Amendments?

- It is proposed that the Chief Registrar (appointed by the States) would maintain a unified database at the State level.
- It would then integrate it with the data at the “national level,” maintained by the Registrar General of India (RGI).
- The amendments will imply that the Centre will be a parallel repository of data.

Significance of the database:

- It would help update:
- Population Register prepared under the Citizenship Act, 1955;
- Electoral registers or electoral rolls prepared under the Representation of the People Act, 1951. Aadhaar database prepared under the Aadhaar Act, 2016;
- Ration card database prepared under the National Food Security Act, 2013;
- Passport database prepared under the Passport Act; and
- Driving licence database under the Motor Vehicles (Amendment) Act, 2019, and
- Other databases at the national level are subject to provisions of Section 17 (1) of the RBD Act, 1969.

20. CERT-In authorized as CVE Numbering Authority (CNA)

Why in News?

- CERT-In has partnered with the Common Vulnerabilities and Exposures (CVE) Program and has been authorized as a CVE Numbering Authority (CNA) for vulnerabilities impacting all products designed, developed and manufactured in India.

What is CVE Program?

- CVE is an international, community-based effort and relies on the community to discover vulnerabilities.
- The vulnerabilities are discovered then assigned and published to the CVE List.
- Information technology and cybersecurity professionals use CVE Records to ensure they are discussing the same issue, and to coordinate their efforts to prioritize and address the vulnerabilities.
- Partners publish CVE Records to communicate consistent descriptions of vulnerabilities.

Mission of the Program:

- The mission of the CVE Program is to identify, define, and catalog publicly disclosed cybersecurity vulnerabilities.
- The vulnerabilities are discovered then assigned and published by organizations from around the world that have partnered with the CVE Program.

Who are the CNAs?

- CNAs are organizations responsible for the regular assignment of CVE IDs to vulnerabilities, and for creating and publishing information about the Vulnerability in the associated CVE Record.

-
- The CVE List is built by CVE Numbering Authorities (CNAs).
 - Every CVE Record added to the list is assigned by a CNA.
 - The CVE Records published in the catalog enable program stakeholders to rapidly discover and correlate vulnerability information used to protect systems against attacks.
 - Each CNA has a specific Scope of responsibility for vulnerability identification and publishing.
 - Indian Computer Emergency Response Team (CERT-IN):
 - CERT-IN is an office within the Ministry of Electronics and Information Technology.
 - It is the nodal agency to deal with cyber security threats like hacking and phishing. It strengthens the security-related defense of the Indian Internet domain.
 - It was formed in 2004 by the Government of India under the Information Technology Act, 2000 Section (70B) under the Ministry of Communications and Information Technology.



4. SCIENCE & TECHNOLOGY

1. Expert Panel Clears Covaxin for Emergency Use in 2 to 18 age Group

Why in News?

- Bharat Biotech's COVID-19 vaccine Covaxin (BBV152) has been recommended for Emergency Use Authorisation (EUA) for 2-18- year-olds by the Subject Expert Committee (SEC) of the Central Drugs Standards Control Organisation (CDSCO).

About the News:

- Covaxin is the country's first indigenous, whole-virion, inactivated vaccine developed by Bharat Biotech in collaboration with the Indian Medical Research Council (ICMR) and the National Institute of Virology (NIV). If given the green signal, it will emerge as the first COVID-19 vaccine globally to be used for vaccinating children as young as 2 years.
- The company said it had submitted data from clinical trials in the 2-18 age group to the CDSCO. The positive recommendations, after due review by the SEC, were submitted to the Drugs Controller General of India (DCGI).
- A senior Central Government official stated that the Hyderabad-based Bharat Biotech had completed Phase-2 and Phase-3 trials of Covaxin on children below 18 in September and submitted the trial data. The trials were done on the age groups of 2-6, 6-12 and 12 -18.

What would be its Impact?

- Experts maintained that two doses of Covaxin could be administered to children within a gap of 28 days. For adults, the government has set 4-6 weeks between the two shots.
- This represents one of the first approvals worldwide for COVID-19 vaccines for the 2-18 age group.
- India has always been known as a vaccine and a medicine drug producer but never a medicine or a drug developer.
- This is the first time that a vaccine has been entirely developed and produced in India and its efficacy and safety have been proven to be high so much so that it is now being trialled in children." The vaccine would lead to protection of children. Currently, adults have been vaccinated, but children have been left exposed to the virus. This vaccine will bring about a positive change.

What is the Regular Procedure for Drug Approval?

- Vaccines and medicines, and even diagnostic tests and medical devices, require the approval of a regulatory authority before they can be administered.

- In India, the regulatory authority is the Central Drugs Standard Control Organisation (CDSCO). For vaccines and medicines, approval is granted after an assessment of their safety and effectiveness, based on data from trials.

About CDSCO:

- The Central Drugs Standard Control Organisation (CDSCO) under Directorate General of Health Services, Ministry of Health & Family Welfare, Government of India is the National Regulatory Authority (NRA) of India.
- Under the Drugs and Cosmetics Act, CDSCO is responsible for
 - ✓ Approval of New Drugs
 - ✓ Conduct of Clinical Trials
 - ✓ Laying down the standards for Drugs
 - ✓ Control over the quality of imported Drugs in the country and
 - ✓ Coordination of the activities of State Drug Control Organizations by providing expert advice with a view to bring about the uniformity in the enforcement of the Drugs and Cosmetics Act.
- CDSCO along with state regulators is jointly responsible for grant of licenses of certain specialized categories of critical Drugs such as blood and blood products, Vaccine and Sera.

When can Emergency use Authorisation (EUA) be granted?

- In the US, the Food and Drug Administration (FDA) grants EUA only after it has been determined that the “known and potential benefits outweigh the known and potential risks of the vaccine” (or medicine).
- This means that a EUA application can be considered only after sufficient efficacy data from phase 3 trials had been generated.
- A EUA cannot be granted solely on the basis of data from phase 1 or phase 2 trials.

What is the process of Getting an Emergency use Authorisation in India?

- Experts and activists say India’s drug regulations do not have provisions for a EUA, and the process for receiving one is not clearly defined or consistent.
- Despite this, CDSCO has been granting emergency or restricted emergency approvals to COVID-19 drugs during this pandemic for Remdesivir and favipiravir.
- Previously it has been granted permission for Covaxin and Covishield. Now covaxin will emerge as the first COVID-19 vaccine globally to be used for vaccinating children as young as 2 years.

Is there a risk in using a Product that has only been Granted a EUA?

- Now the public has to be informed that a product has only been granted an EUA and not full approval.
- In the case of a Covid-19 vaccine, for example, people have to be informed about the known and potential benefits and risks, and the “extent to which such benefits or risks are unknown”, and that they have a right to refuse the vaccine.

About WHO’s Emergency Use List (EUL):

- The WHO Emergency Use Listing Procedure (EUL) is a risk-based procedure for assessing and listing unlicensed vaccines, therapeutics and in vitro diagnostics with the ultimate aim of expediting the availability of these products to people affected by a public health emergency.
- To be eligible, the following criteria must be met:
 - ✓ The disease for which the product is intended is serious or immediately life threatening, has the potential of causing an outbreak, epidemic or pandemic and it is reasonable to consider the product for an EUL assessment, e.g., there are no licensed products for the indication or for a critical subpopulation (e.g., children).
 - ✓ Existing products have not been successful in eradicating the disease or preventing outbreaks (in the case of vaccines and medicines).
 - ✓ The product is manufactured in compliance with current Good Manufacturing Practices (GMP) in the case of medicines and vaccines and under a functional Quality Management System (QMS) in the case of IVDs.
 - ✓ The applicant undertakes to complete the development of the product (validation and verification of the product in the case of IVDs) and apply for WHO prequalification once the Product is licensed.

2. China Denies Testing of Hypersonic Technology

Why in News?

- China’s Government recently denied a recent report saying it had carried out a test of a nuclear capable hypersonic missile, stating that the launch was a “routine test of a space vehicle”.

What are the Implications for India if it is true?

- Hypersonic technology developments, in the backdrop of growing US-China rivalry and a year-long standoff with Indian forces in eastern Ladakh, is certainly a threat for India's space assets along with the Surface Assets.
- The offence system operating at these speeds would mean a requirement to develop defence systems at these Speeds.
- Several countries, including the US, Russia and China, are developing hypersonic missiles which travel at a speed five times that of sound.
- Though slower than ballistic missiles, they are harder to intercept and can be manoeuvred.

About Hypersonic Speed and Technology:

- Hypersonic speeds are 5 or more times the Mach or speed of sound.
 - ✓ **Mach Number:** It describes an aircraft's speed compared with the speed of sound in air, with Mach 1 equating to the speed of sound i.e. 343 metre per second.
- **Types (2):**
 - ✓ **Hypersonic Cruise Missiles:** These are the ones that use rocket or jet propellant through their flight and are regarded as being just faster versions of existing cruise missiles.
 - ✓ **Hypersonic Glide Vehicle (HGV):** These missiles first go up into the atmosphere on a conventional rocket before being launched towards their target.
- **Technology Used:** Most hypersonic vehicles primarily use the scramjet technology, which is a type of Air Breathing propulsion System.
- This is extremely complex technology, which also needs to be able to handle high temperatures, making the hypersonic systems extremely costly.

Ballistic Missile	Cruise Missile
<ul style="list-style-type: none"> • Travel in projectile motion and trajectory depends on gravity, air resistance and Coriolis Force. 	<ul style="list-style-type: none"> • Comparatively follows a straight trajectory of motion.
<ul style="list-style-type: none"> • Leave the earth's atmosphere and re-enter it. 	<ul style="list-style-type: none"> • The flight path is within the earth's atmosphere.
<ul style="list-style-type: none"> • Long-range missiles (300 km to 12,000 km) 	<ul style="list-style-type: none"> • Short range missiles (range upto 1000 km)
<ul style="list-style-type: none"> • E.g. Prithvi I, Prithvi II, Agni I, Agni II and Dhanush missiles. 	<ul style="list-style-type: none"> • E.g. BrahMos missiles

Ballistic Missile vs Cruise Missile:

Classification of Missiles Based on Speed:

Speed Range	Mach Number	Velocity in m/s
Subsonic	< 0.8	< 274
Transonic	0.8–1.2	274–412
Supersonic	1.2–5	412–1715
Hypersonic	5–10	1715–3430
High-hypersonic	10–25	3430–8507

Development of Hypersonic Technology in India:

- India, too, is working on hypersonic technologies.
- As far as space assets are concerned, India has already proved its capabilities through the test of ASAT under Mission Shakti.
- Hypersonic technology has been developed and tested by both DRDO and ISRO.
- Recently, DRDO has successfully flight-tested the Hypersonic Technology Demonstrator Vehicle (HSTDV), with a capability to travel at 6 times the speed of sound.
- Also, a Hypersonic Wind Tunnel (HWT) test facility of the DRDO was inaugurated in Hyderabad. It is a pressure vacuum-driven, enclosed free jet facility that simulates Mach 5 to 12.

What is Air Breathing Propulsion System?

- These systems use atmospheric oxygen, which is available up to about 50 km of earth's surface to burn the fuel stored on-board thereby making the system much lighter, more efficient and cost effective.
- Examples of Air Breathing Propulsion System include the Ramjet, Scramjet, Dual Mode Ramjet (DMRJ).
- **Ramjet:** A ramjet is a form of air breathing jet engine that uses the vehicle's forward motion to compress incoming air for combustion without an axial compressor.
 - ✓ Fuel is injected in the combustion chamber where it mixes with the hot compressed air and ignites. Ramjets cannot produce thrust at zero airspeed; they cannot move an aircraft from a standstill.
 - ✓ A ramjet-powered vehicle, therefore, requires an assisted take-off, like a rocket assist, to accelerate it to a speed where it begins to produce thrust.

- ✓ The ramjet works best at supersonic speeds and as the speed enters the hypersonic range, its efficiency starts to drop.
- **Scramjet:** A scramjet engine is an improvement over the ramjet engine as it operates at hypersonic speeds and allows supersonic combustion, which gives it its name — supersonic combustion ramjet, or scramjet.
 - ✓ The scramjet is composed of three basic components:
 - ✓ A converging inlet where incoming air is compressed,
 - ✓ A combustor where gaseous fuel is burned with atmospheric oxygen to produce heat,
 - ✓ A diverging nozzle where the heated air is accelerated to produce thrust. The exhaust gases are accelerated to hypersonic speeds using a divergent nozzle.
 - ✓ The speed at which the vehicle moves through the atmosphere causes the air to compress within the inlet. As such, no moving parts are needed in a scramjet, which reduces the weight and the number of failure points in the engine.
- **Dual Mode Ramjet (DMRJ):**
 - ✓ The third concept is a mix of ramjet and scramjet, which is called DMRJ.
 - ✓ There is a need for an engine which can operate at both supersonic and hypersonic speeds.
 - ✓ A DMRJ is an engine design where a ramjet transforms into a scramjet over Mach 4-8 range, which means, it can operate in both the subsonic and supersonic combustor mode.

3. 'Ebola is defeated', says Congolese professor who discovered virus

Why in News?

- Jean-Jacques Muyembe, the Congolese professor who first discovered the Ebola virus more than 40 years ago has recently said that the virus has been defeated. Vaccines and Medical Treatments have brought the deadly and terrifying disease under control.

About the News:

- The 79-year-old virologist was speaking at a ceremony in the Democratic Republic of Congo's capital Kinshasa marking the arrival on the market of the "Ebanga" treatment, which was approved last December by the U.S. Food and Drug Administration.
- Together with more effective clinical treatments, the availability of vaccines means the highly infectious haemorrhagic fever that once proved almost always fatal can now be contained.

Background:

- Mr. Muyembe first came across the virus in 1976 as a field epidemiologist when he was called to the village of Yambuku in northern DRC, which was then called Zaire.
- A mysterious illness had just appeared. He took a sample from a sick nun, sent it to Belgium, where microbiologist Peter Piot isolated the virus for the first time — and is widely miscredited as the man who "discovered" the disease.
- The virus was named Ebola after a river close to Yambuku.

About Ebola:

- Ebola virus disease (EVD), formerly known as Ebola haemorrhagic fever, is a severe, often fatal illness in humans.
- The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission.
- The average EVD case fatality rate is around 50%. Case fatality rates have varied from 25% to 90% in past outbreaks.
- Community engagement is key to successfully controlling outbreaks. Good outbreak control relies on case management, surveillance and contact tracing, a good laboratory service and social mobilisation.
- Early supportive care with rehydration, symptomatic treatment improves survival. There is yet no licensed treatment proven to neutralise the virus but a range of blood, immunological and drug therapies are under development.

Is Ebola Virus Disease is a Contagious Disease?

- Ebola Virus Disease can be highly contagious. The person becomes contagious when the first symptoms begin to appear like fever until he or she dies.
- After the death of a person, his or her body is extremely contagious until its cremation or burial. If an individual survives with the Ebola Virus Disease, the person remains contagious for approximately 21 to 42 days after the symptoms abate.
- It is also said that the Ebola viruses have been detected in the semen of men's for many months and in the eyes of males and females for months but it is not clear yet how much contagious is the virus in these locations.

What are the Vaccines Used?

- An experimental Ebola vaccine, called rVSV-ZEBOV proved highly protective against EVD in a major trial in Guinea in 2015.

- The rVSV-ZEBOV vaccine is being used in the ongoing 2018-2019 Ebola outbreak in DRC. Pregnant and breastfeeding women should have access to the vaccine under the same conditions as for the General Population.
- The public mistrust and Militia attacks have prevented health workers from reaching some hard-hit areas for administering the Vaccines.

4.1. SCIENCE & TECHNOLOGY SNIPPETS

1. Computer Tomography

Why in News?

- The first computed tomography image – a CT scan – of the human brain was made 50 years ago, on Oct. 1, 1971.

Computer Tomography (CT):

- A CT scan is a medical imaging technique used in radiology to get detailed images of the body noninvasively for diagnostic purposes.
- The multiple X-ray measurements taken from different angles are then processed on a computer using reconstruction algorithms to produce tomographic (cross-sectional) images (virtual “slices”) of a body.

How does it work?

- They use a narrow X-ray beam that circles around one part of your body. This provides a series of images from many different angles.
- A computer uses this information to create a cross-sectional picture. Like one piece in a loaf of bread, this two-dimensional (2D) scan shows a “slice” of the inside of your body.
- This process is repeated to produce a number of slices.
- The computer stacks these scans one on top of the other to create a detailed image of your organs, bones, or Blood Vessels.
- For example, a surgeon may use this type of scan to look at all sides of a tumor to prepare for an operation.

Its development:

- Since its development in the 1970s, CT has proven to be a versatile imaging technique.
- While CT is most prominently used in diagnostic medicine, it also may be used to form images of non-living objects.

- The 1979 Nobel Prize in Physiology or Medicine was awarded jointly to South African-American physicist Allan M. Cormack and British electrical engineer Godfrey N. Hounsfield “for the development of computer-assisted tomography”.

Threats:

- CT scans use X-rays, which produce Ionizing Radiation.
- Such radiation may damage your DNA and lead to cancer.
- The risk increases with every CT scan we get.
- Ionizing radiation may be more Harmful in children.

2. Type 1 diabetes

Why in News?

- Recently, a study conducted recently observed that it is crucial to have a good control over blood pressure and cholesterol and not just good control over blood sugar level to combat Type 1 Diabetes.

Highlight:

- Patients who have T1D have reduced life-span even with insulin being administered to them. Subjects who were able to control all the three had better glycemic and blood pressure control, more favourable lipid profiles and lower prevalence of complications which helped them to increase their life-span compared to those who could not control all the three.
- T1D prevalence in India: India is home to more than 95,000 children with T1D, reported to be the highest in the world, according to the 9th International Diabetes Federation Atlas
- What is Type 1 diabetes? In type 1 diabetes, the pancreas (a small gland behind the stomach) progressively reduces the amount of insulin (the hormone that regulates blood glucose levels) it produces until it stops producing any at all. If the amount of glucose in the blood is too high, it can, over time, seriously damage the body’s organs,
- National Programme for prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and strokes (NPCDCS) was launched in 2010 in 100 districts across 21 States, in order to prevent and control the major NCDs.
- The main focus of the programme is on health promotion, early diagnosis, management and referral of cases, besides Strengthening the Infrastructure and Capacity Building.

- The funds are being provided to States under NCD Flexi-Pool through State PIPs of respective States/UTs, with the Centre to State share in ratio of 60:40 (except for North-Eastern and Hilly States, where the share is 90:10).
- 'Fit India' movement was launched recently to highlight the need to stay healthy amid rising instances of lifestyle disorders and non-communicable diseases (NCDs).

3. Antimalarial Drugs Resistance (AMR)

Why in News?

- Recently, there is increasing evidence of the Antimalarial Drugs Resistance (AMR) against Malaria. It has been noticed while treating with the Drugs (Artemisinin or Chloroquine), either alone or with partner drugs.

Highlights:

- It is simply defined as the ability of disease-causing germs (e.g., bacteria or viruses) to continue multiplying despite the presence of drugs that usually kill them.
- Drug resistance is the reduction in effectiveness of a medication to cure a disease or condition.
- For example: With HIV (Human immunodeficiency virus), drug resistance is caused by mutations in the virus's genetic structure. These mutations lead to changes in certain HIV proteins and enzymes (e.g., protease enzyme) which helps HIV to replicate.
- The mutations in the malarial parasite have been responsible for artemisinin partial Resistance. As many as 1,044 studies conducted globally from 2010-2019 confirmed the PfK13 mutation. Imperfect coverage of antimalarial drugs, improper diagnosis, misuse of drugs and not-so-good mosquito control programmes were cited by the report as major contributory factors causing resistance against these drugs.
- These failures lead to increased exposure of the malaria parasites to drugs, increasing the risk of drug resistance
- Chloroquine (CQ) is the most commonly prescribed drug for P Vivax parasite. A World Health Organisation (WHO) report said P vivax resistance to chloroquine had been reported from all WHO regions.
- Twenty-eight countries, including India, showed the CQ Resistance.
- A widespread resistance scenario could result in a yearly excess of 22 million treatment failures, 116,000 deaths and costs including an estimated USD 130 million to change Treatment Policy.

4. Astro Robot

Why in News?

- Recently, there is increasing evidence of the Antimalarial Drugs Resistance (AMR) against Malaria. It has been noticed while treating with the Drugs (Artemisinin or Chloroquine), either alone or with partner drugs.

Highlights:

- It is simply defined as the ability of disease-causing germs (e.g., bacteria or viruses) to continue multiplying despite the presence of drugs that usually kill them.
- Drug resistance is the reduction in effectiveness of a medication to cure a disease or condition.
- For example: With HIV (Human immunodeficiency virus), drug resistance is caused by mutations in the virus's genetic structure. These mutations lead to changes in certain HIV proteins and enzymes (e.g., protease enzyme) which helps HIV to replicate.
- The mutations in the malarial parasite have been responsible for artemisinin partial Resistance. As many as 1,044 studies conducted globally from 2010-2019 confirmed the Pfk13 mutation. Imperfect coverage of antimalarial drugs, improper diagnosis, misuse of drugs and not-so-good mosquito control programmes were cited by the report as major contributory factors causing resistance against these drugs.
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5. Drone-Based Vaccine Delivery Model: i-Drone

Why in News?

- The Ministry of Health and Family Welfare has recently launched a Drone-Based vaccine delivery model named, Drone Response and Outreach in North East (i-Drone).

Highlights:

- Drone is a layman terminology for Unmanned Aircraft (UA). There are three subsets of Unmanned Aircraft- Remotely Piloted Aircraft, Autonomous Aircraft and Model Aircraft.

- Indian Council of Medical Research (ICMR) has devised the model to make sure that life-saving vaccines reach everyone.
- It has been designed to facilitate vaccine delivery to tough and hard-to-reach terrains of India. Currently, the drone based delivery project has been granted permission for implementation in Manipur and Nagaland, as well as union territory of Andaman and Nicobar Island. The permission was granted to the ICMR for conducting feasibility study of Covid-19 vaccine delivery using drones, in collaboration with IIT-Kanpur.
- It will help in overcoming the gaps in current vaccine delivery mechanisms and can be used in delivering important life-saving medicines, collecting blood samples etc.
- This technology can also be used in critical situations. It can be a game changer in addressing the challenges in health care delivery, particularly health supplies in difficult areas.
- Indian Council of Medical Research
- It is the apex body in India for the formulation, coordination and promotion of biomedical research. Its mandate is to conduct, coordinate and implement medical research for the benefit of the Society; translating medical innovations into products/processes and introducing them into the public health system.
- It is funded by the Government of India through the Department of Health Research, Ministry of Health & Family Welfare.

6. Biodegradable Polymer

Why in News?

- Scientists have recently developed a New biodegradable polymer, using Guar Gum, and Chitosan, which has high potential for packaging material.

Highlights:

- It is a guar gum-chitosan composite film which is a cross-linked polysaccharide developed with the help of solution casting method (a simple technique to make polymer films). It overcomes the challenges of polysaccharides.
- Polysaccharides is one of the biopolymers with high potential for use in synthesis of Packaging Material.
- Due to some drawbacks of polysaccharides, such as low mechanical properties, high water-solubility, and low barrier properties, they are not preferred.

- Guar Gum, and Chitosan are polysaccharides extracted from guar beans and shells of crab and shrimps.
- High water stability, high mechanical strength as well as excellent resistance towards harsh environmental conditions.
- The fabricated cross-linked film is not easily soluble in water. As per scientists, it did not dissolve even after 240 hours.
- It is highly water repellent or hydrophobic because of its high contact angle of 92.8° .
- Water vapor permeability is low as compared to the film made only from chitosan.
- Vapour permeability is a material's ability to allow a vapour (such as water vapour or, indeed any gas) to pass through it.
- It is likely to help effectively deal with the menace of piling non-biodegradable packaging materials, including water and soda bottles.
- Normally, Polymers have a wide variety of industrial and commercial uses but it is not biodegradable and hence poses a major challenge to the environment and earth's ecosystem.

7. Indian Meteorite helps study Earth's formation

Why in News?

- The researchers from the Geological Survey of India collected about 30 meteorite fragments with the largest weighing around a kilogram near the town of Katol in Nagpur in 2012.

Significance of Meteor Study:

- Now, by studying the composition of these meteorite fragments, researchers have unraveled the composition expected to be present in the Earth's lower mantle which is at about 660 km deep.
- Studying the meteorite could also tell us more about how our Earth evolved from being a magma ocean to a rocky planet.

Key Component of the Meteor: Olivine

- Initial studies revealed that the host rock was mainly composed of olivine, an olive-green mineral. Olivine is the most abundant phase in our Earth's Upper Mantle.
- Our Earth is composed of different layers including the outer crust, followed by the mantle and then the Inner Core.

How to study a Meteorite?

- The researchers took a small sample of the meteorite and examined it using special Microscopy Techniques.
- The Mineralogy was determined using a laser micro-Raman spectrometer.
- These techniques helped the team identify, characterise the crystal structure of the meteorite and determine its Chemical Composition and texture.

What does the New Study Show?

- The international team of scientists examined a section of this highly-shocked meteorite. It resembles to the first natural occurrence of a mineral called bridgmanite.
- The mineral was named in 2014 after Prof. Percy W. Bridgman, recipient of the 1946 Nobel Prize in Physics. Various computational and experimental studies have shown that about 80% of the Earth's lower mantle is made up of bridgmanite.
- By studying this meteorite sample, scientists can decode how bridgmanite crystallized during the final stages of our Earth's formation.

Bridgmanite: On Earth vs. on Meteorite

- Katol meteorite is a unique sample and it is a significant discovery.
- The bridgmanite in the meteorite was found to be formed at pressures of about 23 to 25 gigapascals generated by the shock event.
- The high temperature and pressure in our Earth's interior have changed over billions of years causing crystallisation, melting, remelting of the different minerals before they reached their current state.
- It is important to study these individual minerals to get a thorough idea of how and when the Earth's layers formed.

How does it help understand Evolution of Earth?

- The inner planets or terrestrial planets or rocky planets Mercury, Venus, Earth, and Mars are formed by accretion or by rocky pieces coming together.
- They were formed as a planet by increased pressure and high temperature caused by radioactive elements and gravitational forces. Our Earth was an ocean of magma before the elements crystallised and stabilised and the different layers such as core, mantle were formed.
- The heavier elements like iron went to the core while the lighter silicates stayed in the mantle. By using the meteorite as an analog for Earth, we can unearth more details about the Formation.

8. Mission Lucy

Why in News?

- National Aeronautics and Space Administration (NASA) is set to launch 'Lucy', its first mission to explore the Jupiter Trojan Asteroids.

Highlights:

- The solar-powered mission is estimated to be over 12 years long, during which the spacecraft will visit eight asteroids covering a distance of about 6.3 billion km to deepen the understanding of the "young solar system".
- The mission is named after 'Lucy', a 3.2 million-year-old ancestor who belonged to a species of hominins (which include humans and their ancestors). The spacecraft will be launched on an Atlas V 401 rocket. The spacecraft's first encounter will be with an asteroid that lies in the main belt that can be found between Mars and Jupiter. This asteroid is named 'Donald Johnson' after the paleoanthropologist who discovered the fossilised remains of 'Lucy'.
- The Trojan asteroids are believed to be formed from the same material that led to the formation of planets nearly 4 billion years ago when the solar system was formed.
- Therefore, the mission is designed to understand the composition of the diverse asteroids that are a part of the Trojan asteroid swarms, to determine the mass and densities of the materials and to look for and study the satellites and rings that may orbit the Trojan asteroids.
- Studying them will help scientists understand its origins and evolution, and wraill link between Nepal and Ind.

9. Black Hole Mergers

Why in News?

- Scientists from Chennai Mathematical Institute and Ors. have analysed data from the LIGO-VIRGO observatories and estimated the fraction of the binary Black Hole mergers detected so far that show potential to form Intermediate-Mass Black Holes.

Highlights:

- It is the phenomenon of merging of two or more black holes.
- Indian scientists have already observed merger of three supermassive black holes.
- Merging of two or more black holes results in different types of black holes. For eg, Intermediate-Mass Black Holes and Binary Black Holes.

- Intermediate-Mass black hole (IMBH) is a class of black hole with mass in the range **10²–10⁵ solar masses**: significantly more than stellar black holes but less than supermassive black holes.
- One of the theories of intermediate mass black hole formation has to do with ‘hierarchical Growth’.
- That is, if the black holes exist among a dense cluster of stars, the remnant (black hole) of a merger can pair up with another black hole close by to form a binary. This can eventually merge to form a second remnant which is more massive. This process, happening in a hierarchical manner, can explain intermediate mass black hole formation.
- Gravitational Waves (GW) are created when two black holes orbit each other and merge.
- “Kicks” is the opposite momentum acquired by a remnant black hole during mergers. It is a reaction to Gravitational Waves taking away energy and linear momentum during Mergers. These kicks can be quite large, giving it a velocity of up to 1000 kilometres per second.
- If this kick velocity is above the escape velocity of the star cluster in which the black hole is formed, it escapes from the environment and moves out. This hinders further hierarchical mergers.
- The extent of the kick received by the remnant can be calculated from the masses of the merging black holes and their spin. The kick estimates help understand which mergers have the possibility of forming Intermediate-Mass black holes.

10. Border Security Force (BSF)

Why in News?

- Ministry of Home Affairs has recently issued a notification to widen the jurisdiction of Border Security Force (BSF) for seizure, search and arrest up to 50km from the international border in Assam, West Bengal and Punjab.

Highlights:

- This notification replaces a 2014 order under the BSF Act, 1968, which also covered the States of Manipur, Mizoram, Tripura, Nagaland and Meghalaya.
- It also specifically mentions the two newly created Union Territories- J&K and Ladakh.
- The violations for which the BSF carries out search and seizure include smuggling of narcotics, other prohibited items, illegal entry of foreigners and offences punishable under any other Central Act among others.

- After a suspect has been detained or a consignment seized within the specified area, the BSF can only conduct “preliminary questioning” and has to hand over the suspect to the local police within 24 hours.
- The BSF does not have the powers to prosecute crime suspects.
- The BSF was raised in 1965, after the India-Pakistan war.
- It is one of the seven Central Armed Police Forces of the Union of India under the administrative control of the Ministry of Home Affairs (MHA).
- Other Central Armed Police Forces are: Assam Rifles (AR), Indo-Tibetan Border Police (ITBP), Central Industrial Security Force (CISF), Central Reserve Police Force (CRPF), National Security Guards (NSG) and Sashastra Seema Bal (SSB).
- The 2.65-lakh force is deployed along the Pakistan and Bangladesh borders.
- It is deployed on Indo-Pakistan International Border, Indo-Bangladesh International Border, Line of Control (LoC) along with Indian Army and in Anti-Naxal Operations.
- It has an air wing, marine wing, an artillery regiment, and commando units.
- BSF has been defending Sir Creek in Arabian Sea and Sundarban delta in the Bay of Bengal with its state of art fleet of Water Crafts.
- BSF has an instrumental role in helping state administration in maintaining Law and Order and conducting peaceful elections. BSF has been crusading against natural calamity to save precious human lives as and when warranted. It contributes dedicated services to the UN peacekeeping Mission by sending a large contingent of its trained manpower every year. It has been termed as the First Line of Defence of Indian Territories.

11. Cambrian Patrol Exercise

Why in News?

- Recently, the Gorkha Rifles (Frontier Force) of the Indian Army has been awarded a Gold medal in the Cambrian Patrol Exercise, which was held in Wales (the UK).

Highlights:

- It is an annual international military patrolling exercise and is referred to as the ‘Olympics of Military Patrolling’ among militaries in the world.
- It was first set up more than 40 years ago, by a group of Welsh Territorial Army soldiers who designed the training event to feature long-distance marching over the Cambrian Mountains culminating in firing.

- The teams have to cover a 50-mile course in less than 48 hrs while performing numerous types of military exercises placed throughout the rugged Cambrian Mountains and swamplands of mid-Wales, UK.
- The aim of the exercise is to test their leadership, self-discipline, courage, physical endurance, and determination.
- Joint Exercises between India and UK are Navy: Konkan, Air Force: Indradhanush and Military: Ajeya Warrior

12. Ex Yudh Abhyas 2021

Why in News?

- The 17th Indo-US Joint Military Exercise "Ex Yudh Abhyas 2021" was recently held at Joint Base Elmendorf-Richardson in Alaska (US).

Highlights:

- The previous version of the exercise was held in Bikaner's Mahajan Field Firing Ranges (Rajasthan). It is the largest running joint military training and defence cooperation endeavor between India and the US.
- The exercise was started in 2004 under the US Army Pacific Partnership Program. The exercise is hosted alternately between both countries.
- The exercise aims at enhancing understanding, cooperation and interoperability between two Armies. This will help them in undertaking joint operations at battalion level in mountainous terrain with cold climatic conditions under the ambit of the United Nations.
- Other Exercises between India and the US:
 - Exercise Tiger Triumph (Humanitarian Assistance and Disaster Relief exercise)
 - Exercise Vajra Prahar (Special Forces' Exercise)
 - Cope India (Air Force).
 - Malabar Exercise (Quadrilateral naval exercise of India, USA, Japan and Australia).
 - Red Flag (US' multilateral air exercise).

13. Geospatial Energy Map

Why in News?

- NITI Aayog has recently launched a comprehensive Geographic Information System (GIS)-based Geospatial Energy Map of India.

Highlights:

- The Association of Geospatial Industries released a report titled "Potential of Geospatial Technologies for the Water Sector in India".
- It is developed by the NITI Aayog in collaboration with Indian Space Research Organisation (ISRO) with the support of Energy Ministries.
- It provides a holistic picture of all energy resources of the country.
- It enables visualisation of energy installations such as conventional power plants, oil and gas wells, petroleum refineries, coal fields and coal blocks, district-wise data on renewable energy power plants and renewable energy resource potential through 27 thematic layers.
- A GIS is a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface. It can show many different kinds of data on one map, such as streets, buildings, and vegetation.
- It enables people to more easily see, analyze, and understand patterns and relationships.
- It attempts to identify and locate all primary and secondary sources of energy and their transportation/transmission networks to provide a comprehensive view of energy production and distribution in a country.
- It is aimed at integrating energy data scattered across multiple organizations and to present it in a consolidated, visually appealing graphical manner.
- It leverages the latest advancements in web-GIS technology and open-source software to make it interactive and user friendly.
- It will be useful in planning and making investment decisions.
- It will also aid in disaster management using available energy assets.
- Geospatial Mapping is a type of spatial analysis technique that typically employs software capable of rendering maps, processing spatial data, and applying analytical methods to terrestrial or geographic datasets, including the use of Geographic Information Systems.
- It is different from traditional mapping, as Geospatial Mapping provides us with computerized data that can be used to create a custom map designed for your needs.

14. Zeolite Oxygen Concentrators: Chemistry in 3-D

Why in News?

- To meet the demand of oxygen supply in the country during the peak of pandemic, the Defence Research and Development Organisation (DRDO) had chartered the Air India to import 'Zeolite' from different countries.

What are Zeolites?

- Zeolites are highly porous, 3-dimensional meshes of silica and alumina.
- In nature, they occur where volcanic outflows have met water.
- Synthetic zeolites have proven to be a big and low-cost boon.

Uses in Oxygen Concentrator:

- One biomedical device that has entered our lexicon during the pandemic is the Oxygen Concentrator. This device has brought down the scale of oxygen purification from industrial-size plants to the volumes needed for a Single Person.
- At the heart of this technology are synthetic frameworks of silica and alumina with nanometer-sized pores that are rigid and inflexible.
- Beads of one such material, zeolite 13X, about a millimeter in diameter, are packed into two cylindrical columns in an oxygen concentrator.

How does it work?

- Zeolite performs the chemistry of separating oxygen from nitrogen in air.
- Being highly porous, zeolite beads have a surface area of about 500 square meters per gram. At high pressures in the column, nitrogen is in a tight embrace, chemically speaking, with the zeolite.
- Interaction between the negatively charged zeolite and the asymmetric nucleus (quadrupole moment) of nitrogen causes it to be preferentially adsorbed on the surface of the zeolite. Oxygen remains free, and is thus enriched.
- Once nitrogen is captured, what flows out from the column is 90%-plus oxygen.
- After this, lowering the pressure in the column releases the nitrogen, which is flushed out, and the cycle is repeated with fresh air.

15. Submarine Launched Ballistic Missile (SLBM)

Why in News?

- North Korea has recently fired a Submarine Launched Ballistic Missile (SLBM) from off its East Coast. North Korea is barred from testing ballistic missiles and nuclear weapons under international law.

Highlights:

- It is a rocket-propelled self-guided strategic-weapons system that follows a ballistic trajectory to deliver a payload from its launch site to a Predetermined Target.

- Ballistic trajectory is the path of an unpowered object, as a missile, moving only under the influence of gravity and possibly atmospheric friction and with its surface providing no significant lift to alter the course of flight.
- It can carry conventional high explosives as well as chemical, biological, or nuclear munitions.
- The International Code of Conduct against Ballistic Missile Proliferation (ICOC), now known as the Hague Code of Conduct against Ballistic Missile Proliferation (HCOB), is a political initiative aimed at globally curbing ballistic missile proliferation.
- India is a signatory to this convention.
- Established in April 1987, the voluntary Missile Technology Control Regime (MTCR) aims to limit the spread of ballistic missiles and other unmanned delivery systems that could be used for chemical, biological, and nuclear attacks.
- India has joined the MTCR.

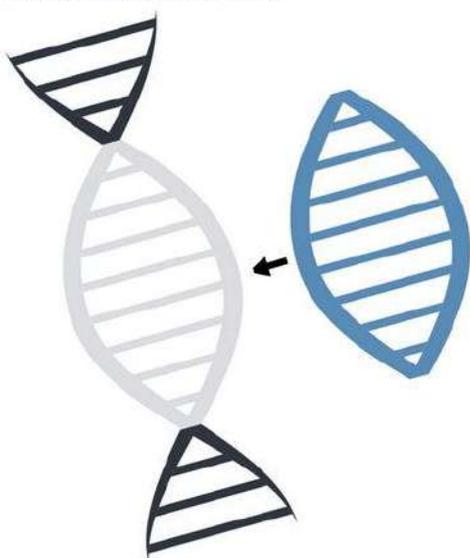
16. What are Non-Transgenic Gene Editing techniques?

Why in News?

- The Centre is yet to decide on a research proposal from scientists which would allow plants to be genetically modified without the need for conventional Transgenic Technology.

GMOs

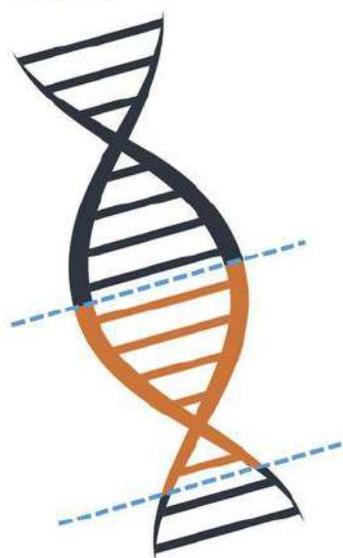
Technique: a foreign gene is inserted into the DNA strand.



Result: the crop takes on improved characteristics associated with the new gene and the genetic modification can be detected through tests.

CRISPR gene editing

Technique: gene is cut and its DNA is modified.



Result: the crop's DNA is changed, but tests cannot distinguish the genetically engineered crop from traditional techniques.

What is Genome Editing?

- Genome editing (also called gene editing) is a group of technologies that give scientists the ability to change an organism's DNA.
- These technologies allow genetic material to be added, removed, or altered at particular locations in the genome. Several approaches to genome editing have been developed.

Techs for Genome Editing

- The core technologies now most commonly used to facilitate genome editing are
 - ✓ Clustered regularly interspaced short palindromic repeats (CRISPR)- associated protein 9 (Cas9)
 - ✓ Transcription activator-like effector nucleases (TALENs)
 - ✓ Zinc-finger nucleases (ZFNs)
 - ✓ Homing endonucleases or meganucleases
 - ✓ Newer technologies
- The Institute has now moved to newer technologies such as Site-Directed Nuclease (SDN) 1 and 2. They aim to bring precision and efficiency into the breeding process using gene-editing tools such as CRISPR, whose developers won the Nobel Prize for Chemistry in 2020.

CRISPR

- CRISPR-Cas9 was adapted from a naturally occurring genome editing system in bacteria.
- The bacteria capture snippets of DNA from invading viruses and use them to create DNA segments known as CRISPR arrays. The CRISPR arrays allow the bacteria to “remember” the viruses (or closely related ones). If the viruses attack again, the bacteria produce RNA segments from the CRISPR arrays to target the viruses' DNA. The bacteria then use Cas9 or a similar enzyme to cut the virus DNA apart, which disables the virus. This method is faster, cheaper, more accurate, and more efficient than other existing Genome Editing Methods.

What is Non-Transgenic Gene Editing?

- Unlike the older GM technology which involves the introduction of foreign DNA, the new proposal involves the use of gene editing tools to directly tweak the plant's own genes instead. It does not involve inserting any foreign DNA.

Use in India:

- Scientists at the Indian Agricultural Research Institute (IARI) are in the process of developing resilient and high-yield rice varieties using such gene editing techniques.

- However, this proposal has been pending with the Genetic Engineering Appraisal Committee (GEAC) for almost two years.

Why needs such Technique?

- Similar to natural mutation: But in this case, this protein is right there in the plant, and is being changed a little bit, just as nature does through mutation.
- Faster and cheaper: It is much faster and far more precise than natural mutation or conventional breeding methods which involve trial and error and multiple breeding cycles.
- Safe for consumption: When a protein comes from an outside organism, then you need to test for safety.
- **Pathbreaking:** It is potentially a new Green Revolution.

No Approval Issues:

- The SDN 1 and SDN 2 categories of genome-edited plants do not contain any foreign DNA when they are taken to the open field trials.
- The US, Canada, Australia and Japan are among the countries which have already approved the SDN 1 and 2 technologies as not akin to GM.
- So, such varieties of rice can be exported without any problem.
- The European Food Safety Authority has also submitted its opinion that these technologies do not need the same level of safety assessment as conventional GM.

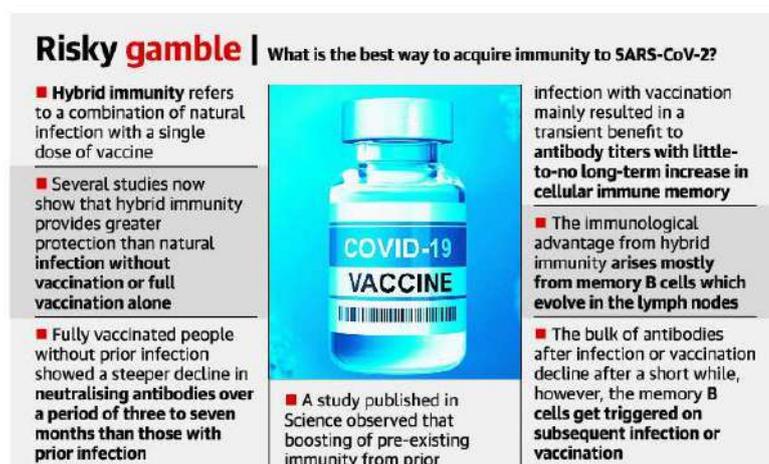
17. Hybrid Immunity

Why in News?

- A study has shown that a combination of natural infection with a single dose of vaccine provides greater immunity than either natural infection without vaccination or full vaccination in individuals.

What is the New Study?

- People without prior infection but fully vaccinated with the Pfizer or AstraZeneca vaccine showed a decline in neutralising antibodies over a period of three to seven months.
- But the decline was much less in vaccinated people with prior infection.



Risky gamble | What is the best way to acquire immunity to SARS-CoV-2?

- Hybrid immunity refers to a combination of natural infection with a single dose of vaccine
- Several studies now show that hybrid immunity provides greater protection than natural infection without vaccination or full vaccination alone
- Fully vaccinated people without prior infection showed a steeper decline in neutralising antibodies over a period of three to seven months than those with prior infection

infection with vaccination mainly resulted in a transient benefit to antibody titers with little-to-no long-term increase in cellular immune memory

- The immunological advantage from hybrid immunity arises mostly from memory B cells which evolve in the lymph nodes
- The bulk of antibodies after infection or vaccination decline after a short while, however, the memory B cells get triggered on subsequent infection or vaccination

■ A study published in Science observed that boosting of pre-existing immunity from prior

-
- People with hybrid immunity had a higher and more durable neutralising antibody response.
 - The hybrid immunity offers stronger protection than just infection or full vaccination alone.

What is Hybrid Immunity?

- It is natural immunity from an infection combined with the immunity provided by the vaccine.
- The immunological advantage from hybrid immunity arises mostly from memory B cells.

What are Memory B cells?

- In immunology, a memory B cell (MBC) is a type of B lymphocyte that forms part of the adaptive immune system.
- B lymphocytes are the cells of the immune system that make antibodies to invade pathogens like viruses.
- They form memory cells that remember the same pathogen for faster antibody production in future infections.

How do they Assist Hybrid Immunity?

- While the bulk of antibodies after infection or vaccination decline after a short while, the memory B cells get triggered on subsequent infection or vaccination.
- The memory B cells triggered by infection and those triggered by vaccination have different responses to viruses.
- Infection and vaccination expose the spike protein to the immune system in vastly different ways.
- After full vaccination, antibodies produced by natural infection continued to grow in potency and their breadth against variants for a year after infection.
- Unlike after vaccination, the memory B cells formed after natural infection are more likely to make antibodies that block immune-evading variants.

18. White Dwarf

Why in News?

- An international team recently saw a white dwarf losing its brightness in 30 minutes, which usually takes a period of several Days to Months.

Highlights:

- This peculiarity in brightness of white dwarfs can be referred to as switch on and off phenomena. Using the Hubble Space telescope and Transiting Exoplanet Survey Satellite (TESS), astronomers have identified several white dwarfs over the years.
- White dwarfs are stars that have burned up all of the hydrogen they once used as nuclear fuel. Such stars have very high density.
- A typical white dwarf is half the size of our Sun and has a surface gravity 1,00,000 times that of Earth. Stars like our sun fuse hydrogen in their cores into helium through nuclear fusion reactions. Fusion in a star's core produces heat and outward pressure (they bloat up as enormous red giants), but this pressure is kept in balance by the inward push of gravity generated by a star's mass. When the hydrogen, used as fuel, vanishes and fusion slows, gravity causes the star to collapse in on itself into white dwarfs.
- Those white dwarfs which have enough mass reach a level called the Chandrasekhar Limit.
- At this point the pressure at its center becomes so great that the star will detonate in a thermonuclear supernova (explosion).
- The white dwarf, which is discussed, is part of a binary system called TW Pictoris, where a star and a white dwarf orbit each other.
- The two objects are so close to each other that the star transfers material to the white dwarf. As this material approaches the white dwarf it forms an accretion disk or a disk of gas, plasma, and other particles around it.
- As the accretion disk material slowly sinks closer towards the white dwarf it generally becomes brighter.
- Also there are cases when the donor stars stop feeding the white dwarf disk. However, reasons for this are still not clear.
- Magnetic gating happens when the magnetic field is spinning so rapidly around the white Dwarf it creates a barrier disrupting the amount of matter the white dwarf can receive.
- This discovery will help understand the physics behind accretion – how black holes and neutron stars feed material from their nearby stars.

5. ART AND CULTURE & MISCELLANEOUS SNIPPETS

1. Nobel Prize for Physiology/Medicine, 2021

Why in News?

- Two United States-based scientists, David Julius and Ardem Patapoutian, have recently been awarded the 2021 Nobel Prize for Physiology/Medicine for their discoveries of receptors for temperature and touch.

Highlights:

- David Julius discovered TRPV₁, a heat-sensing receptor.
- His findings on the skin's sense of temperature was based on how certain cells react to capsaicin, the molecule that makes chili peppers spicy, by simulating a false sensation of heat. Ardem Patapoutian discovered two mechanosensitive ion channels known as the Piezo channels. The Piezo₁ is named after the Greek word for pressure, 'πίεσι'.
- He is credited for finding the cellular mechanism and the underlying gene that translates a mechanical force on our skin into an electric nerve signal.
- The findings have allowed us to understand how heat, cold and mechanical force can initiate the nerve impulses that allow us to perceive and adapt to the world around us.
- This knowledge is being used to develop treatments for a wide range of disease conditions, including chronic pain.

About Nobel Prizes

- The will of the Swedish scientist Alfred Nobel established the five Nobel prizes in 1895.
- The Nobel Prizes are a set of recognition given to fields of Chemistry, Literature, Peace, Physics, and Physiology or Medicine by The Nobel Foundation.
- The Nobel Foundation is a private institution established in 1900, has ultimate responsibility for fulfilling the intentions in Alfred Nobel's will.
- The prizes in Chemistry, Literature, Peace, Physics, and Physiology or Medicine were first awarded in 1901. In 1968, Sveriges Riksbank established the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.

2. Nobel Prize 2021

Why in News?

- In 2021 Nobel Prize in Physics is awarded with one half jointly to Syukuro Manabe, Klaus Hasselmann and the other half to Giorgio Parisi "for groundbreaking contributions to our understanding of complex physical systems."

About Manabe and Hasselmann:

- Awarded for work in physical modelling of Earth's climate, quantifying variability and reliably predicting global warming.
- Demonstrated how increases in the amount of carbon dioxide in the atmosphere would increase global temperatures, laying the foundations for current climate models.

About Parisi:

- Awarded for “the discovery of the interplay of disorder and fluctuations in physical systems from atomic to planetary scales.”
- He “built a deep physical and mathematical model” that made it possible to understand complex systems in fields such as Mathematics, Biology, Neuroscience and Machine learning.

Highlights:

- This is the first time climate scientists (Manabe and Hasselmann) have been awarded the Physics Nobel. Last year, the award was given for the research into black holes.
- The Nobel Prize in Physiology or Medicine 2021 has already been announced.
- The Intergovernmental Panel on Climate Change (IPCC) had won the Peace Nobel in 2007, an acknowledgement of its efforts in creating awareness for the fight against climate change.
- A Chemistry Nobel to Paul Crutzen in 1995, for his work on the ozone layer, is considered the only other time someone from atmospheric sciences has won this honour.

3. Ecological Threat Report (ETR) 2021

Why in News?

- The Institute of Economics and Peace (IEP), an international think tank has recently released the Ecological Threat Report (ETR) 2021: Understanding ecological threats, resilience and peace.

Highlights:

- This is the second edition of the ETR, which covers 178 independent states and territories.
- The ETR includes the most recent and respected scientific research on population growth, water stress, food insecurity, droughts, floods, cyclones, and rising temperature.
- Around 1.26 billion people across 30 countries are suffering from both extreme Ecological risk and low levels of resilience.

- These countries are least likely to be able to mitigate and adapt to new Ecological Threats, leading to mass Displacement.
- As many as 13 countries faced extremely high and 34 others faced high ecological threats.
- The most vulnerable countries are clustered in the Middle East and North Africa, sub-Saharan Africa and South Asia.
- Ecological degradation and conflict work in a vicious circle, whereby one degradation of resources leads to conflict and vice versa.
- Climate change will have an amplifying effect, causing further ecological degradation and pushing some countries through violent tipping points
- Global food insecurity has increased by 44% since 2014, affecting 30.4 % of the world's population in 2020, and is likely to rise further.
- Covid-19 has amplified food insecurity further and will likely have a long-lasting negative impact on world hunger due to stagnant economic growth.
- By 2040 over 5.4 billion people will live in countries facing extreme water stress.
- 70% of its population suffer from inadequate access to safely managed water, which will be compounded by high population growth.
- Eleven countries are projected to double their population between 2021 and 2050. They are all in sub-Saharan Africa.
- From 1990 to 2020, a total of 10,320 natural disasters occurred globally. Flooding has been the most common natural disaster, accounting for 42% of the total disaster count.
- In 2020, 177 countries and territories recorded a warmer average temperature compared to their historical average temperatures.

4. Kushinagar Airport

Why in News?

- When Prime Minister Narendra Modi declares open the Kushinagar International Airport in Uttar Pradesh on October 20, a sizeable Sri Lankan contingent, led by a member of the first family, will be present.

About Kushinagar:

- Kushinagar is located in the north-eastern part of Uttar Pradesh about 50 km east of Gorakhpur and is one of the important Buddhist pilgrimage sites where Buddhists believe Gautama Buddha attained Parinirvana after his death.

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- It is an international Buddhist pilgrimage circuit spanning India and Nepal. It is dotted with several other Buddhist sites in the region such as Kapilvastu, Sravasti, and Lumbini.
 - **Kapilvastu:** It is the ancient city where Gautama Buddha spent 29 years of his life.
 - **Lumbini:** According to Buddhist tradition, Lord Buddha was born in Lumbini. Lumbini is located in Nepal.
 - **Sravasti:** Sravasti was the capital of Kosala kingdom. It is located near the West Rapti river.

 - Its declaration as an “International Airport” will offer improved connectivity, wider choice of competitive costs to the air-travellers. It will result in boosting of domestic/international tourism and economic development of the regions.



6. INTERNATIONAL RELATIONS

1. World Health Organization recommends first Anti-Malarial Vaccine

Why in News?

- In a historic move, the World Health Organization (WHO) has recently endorsed the first anti-malarial vaccine, as mankind enters a key turning point in a battle waged relentlessly over decades between man and Mosquito, the Vector.

About the News:

- The WHO recently said that it was recommending the widespread use of the RTS,S/AS01 (RTS,S) malaria vaccine among children in sub-Saharan Africa and in other regions with moderate to high *P. falciparum* malaria transmission, based on results from an ongoing pilot programme in Ghana, Kenya and Malawi. The development comes at a time when the WHO and its partners have reported a stagnation in the progress against the disease that kills more than 2, 60,000 African children under the age of Five Annually.

About Malaria:

- Malaria has been one of the world's deadliest diseases. It kills more than 400,000 people a year worldwide and causes illness in millions of others. Africa is home to 70% of the world's malaria cases and 90% of deaths. In the past two decades, existing interventions have reduced the malaria burden. And India, too, has made good progress in malaria control. The disease burden has declined by 59 per cent. The success has led to the government in making a commitment to eliminate malaria by 2030. Malaria is caused by Plasmodium; the parasites are spread to people through the bites of infected female Anopheles mosquitoes, called "malaria vectors." There are 5 parasite species that cause malaria in humans, and 2 of these species – *falciparum* and *P. vivax* – pose the Greatest Threat. In 2018, *falciparum* accounted for 99.7% of estimated malaria cases in the WHO African Region 50% of cases in the WHO South-East Asia Region, 71% of cases in the Eastern Mediterranean and 65% in the Western Pacific. *Vivax* is the predominant parasite in the WHO Region of the Americas, representing 75% of malaria cases.

What are the Symptoms?

- Malaria is an acute febrile illness. In a non-immune individual, symptoms usually appear 10–15 days after the infective mosquito bite. The first symptoms – fever, headache, and chills – may be mild and difficult to recognize as malaria. If not treated within 24 hours, *falciparum* malaria can progress to severe illness, often leading to death.

- Children with severe malaria frequently develop one or more of the following symptoms: severe anaemia, respiratory distress in relation to metabolic acidosis, or cerebral malaria.
- In adults, multi-organ failure is also frequent. In malaria endemic areas, people may develop Partial Immunity, allowing Asymptomatic Infections to occur.

What are its Prevention?

- Vector control is the main way to prevent and reduce malaria transmission. If coverage of vector control interventions within a specific area is high enough, then a measure of protection will be conferred across the community.
- WHO recommends protection for all people at risk of malaria with effective malaria vector control. Two forms of vector control – insecticide-treated mosquito nets and indoor residual spraying – are effective in a wide range of Circumstances.

About the Vaccine and its Working:

- RTS,S, known by its trade name Mosquirix, uses antibodies to target proteins presented by sporozoites (such as the circumsporozoite protein of falciparum) to enhance the immune system and help prevent the parasite from infecting the liver.
- Mosquirix is also engineered using a hepatitis B viral protein and a chemical adjuvant to further boost the immune response for enhanced effectiveness.
- African Nation, Malawi took large scale pilot tests for the world's most advanced experimental malaria vaccine in a bid to prevent the disease. Some 360,000 children a year in three African countries received the world's first malaria vaccine as part of a large-scale pilot project. The vaccine was recommended by WHO for pilot introduction in selected areas of 3 African countries- Ghana, Kenya and Malawi.

What are the India's Efforts to Fight Malaria?

- Indian Government has released a National Strategic Plan (NSP) for malaria elimination for years 2017-2022, targeting eradication by 2030.
- This marked a shift in focus from malaria “control” to “elimination”. The plan provides a roadmap to achieve the target of ending malaria in 571 districts out of India's 678 districts by 2022.
- India has sustained significant decline in malaria cases, halving numbers to 5.1 million in 2018 from 9.6 million the year before. This followed a 24% decline in 2017, according to the World Malaria Report 2018.
- Since 2000, India has reduced malaria deaths by two-thirds and halved the number of malaria cases.

- Scaling up a Diagnostic Testing, Treatment and surveillance
- Ensuring an uninterrupted drug and diagnostics supply chain
- Training community workers to test all fever cases and provide medicines, and distributing medicated bed-nets for prevention, under its 'test-treat-track' in the endemic north-Eastern States and Odisha.

World Malaria Report 2020 at Global Level:

- Malaria cases globally numbered about 229 million, an annual estimate that has remained virtually unchanged over the last four years.
- In 2019, it claimed about 4,09,000 lives, compared to 4,11,000 in 2018.
- The report noted that the 11 highest-burden countries viz. Burkina Faso, Cameroon, the Democratic Republic of the Congo, Ghana, India, Mali, Mozambique, Niger, Nigeria, Uganda and Tanzania, account for 70% of the global estimated case burden and 71% of global estimated deaths from malaria.
- Countries in South-East Asia made particularly strong progress, with reductions in cases and deaths of 73% and 74%, respectively.

World Malaria Report 2020 on India:

- India is the only high endemic country which has reported a decline of 17.6% in 2019 as compared to 2018.
- The Annual Parasite Incidence (API, the number of new infections per year per 1000 population) reduced by 18.4% in 2019 as compared to 2018. India has sustained API less than one since the year 2012.
- India has also contributed to the largest drop in cases region-wide, from approximately 20 million to about 6 million.
- The percentage drop in the malaria cases was 71.8% and deaths were 73.9% between 2000 to 2019. India achieved a reduction of 83.34% in malaria morbidity and 92% in malaria mortality between the year 2000 and 2019, thereby achieving Goal 6 of the Millennium Development Goals.
- States of Odisha, Chhattisgarh, Jharkhand, Meghalaya and Madhya Pradesh (high endemic states) disproportionately accounted for nearly 45.47% of malaria cases in 2019. 63.64% of malaria deaths were also reported from these states.
- The figures and trends between the last two decades clearly show the drastic decline in malaria, hence the Malaria Elimination target of 2030 looks Achievable.

2. Indo- Nepal Border issue

Why in News?

- Nepalese political parties have a general consensus over the fact that Kalapani in Uttarakhand is part of Nepal's sovereign territory, said former Foreign Minister Prakash Sharan Mahat.

What's the Issue?

- Kalapani is shown as part of Nepalese sovereign territory in the new map, which was unveiled on May 20, 2020 and made part of the insignia of the Nepalese state, by an amendment on June 13, 2020.
- The old map does not show the region of Kalapani-Lipulekh-Limpiyadhura, which is part of India's Pithoragarh District.

Lipulekh Territorial Dispute between India & Nepal:

- Lipulekh pass is located atop the Kalapani at a tri-junction between India, China and Nepal.
- The Indo-Nepal border dispute over Lipulekh dates back to 1997 when for the first time Nepal raise objections against the decision of India and China to open Lipulekh pass for travelling to Mansarovar.
- Lipulekh pass is an ancient route made for trade and pilgrimage purposes by Bhutiya people.
- The route was closed by India following the Indo-China war of 1962. However, lately in the beginning of May 2020, India reopened the route for Kailash Mansarovar pilgrimage after constructing 22 km long road on the pass.

Why Lipulekh is a disputed Territory between India and Nepal?

- Lipulekh pass opens from Gunji village. Nepal claims that the village and the road is its territory.
- On the other hand, India and China signed a trade treaty in 1954 declaring Lipulekh pass as the Indian gateway.
- Moreover, both the countries signed another treaty in 2015 for trading through Lipulekh Pass. However, this time Nepal protested against the move staking claim over Kalapani area.



Kalapani Territorial Dispute between India & Nepal:

- Kalapani, largely a valley, appears on the Kailash Mansarovar route and is located at an altitude of 3600m, bordering India's Uttarakhand and Nepal's Sudur Paschim Pradesh.
- Kalapani is majorly formed of Himalayan rivers know by the names Kali, Mahakali or Sharda in India & Nepal. India and Nepal are bound to settle all the boundary disputes including Kalapani through bilateral talks under an agreement signed in 1998.
- India's Indo-Tibetan Border Police has been controlling the Kalapani and nearby areas since the Indo-China war of 1962.

What is Nepal's claim over Kalapani?

- Nepali Government claims that towards the west of Kalapani flows the main Kali River which falls in its territory. As per the Treaty of Sugauli, the Kali River is located in Nepal's western border that it shares with India. The treaty was signed between Nepal and British East India Company in 1816. Indian Government claims that a ridgeline located towards the east of Kalapani territory is a part of the Indian Union. The treaty of Sugauli mentions nothing about this ridgeline.

Why has there been dispute between India & Nepal over Kalapani?

- Though treaty of Sugauli clearly mentions about the Kali River and its location in Nepal, there were a few subsequent maps drawn by British surveyors which show the origin of Kali River from Different Places.
- This digression from the treaty led to territorial disputes between India and Nepal. Even the size of Kalapani is different in various sources.

What are the three aspects of Territorial dispute between India & Nepal?

- **Treaty of Sugauli:** Nepal and the British East India Company in 1816 signed the Treaty of Sugauli to end the territorial war. The treaty demarcated Uttarakhand's Kumaon with River Kali as a boundary between India and Nepal. However, the river Kali has been shifting its course from time to time.
- **Origin of Rival Kali:** The place of its origin is also not known. India claims that the river originates from streams of Kalapani and Nepal claims that river originates from its Kuthi Yankti stream.
- **Gunji Village:** River Kali bisects the Byans area and the southeast of Byans includes the Gunji village which is claimed by Nepal as its territory. Gunji village is the gateway for Mansarovar Yatra. The Byans and its areas were transferred to Nepal by Britishers following the Treaty of Sugauli.

3. Iran makes more 20% enriched Uranium

Why in News?

- Iran has produced more than 120 kilograms (265 pounds) of 20% enriched uranium, the country's nuclear chief said, far more than what the U.N. nuclear watchdog IAEA reported last Month.

About the Issue:

- Under the 2015 nuclear deal with world powers, the other signatories were to provide Iran with 20% enriched uranium needed for its research reactor.
- Since it was not delivered, it started to produce it to avoid their problems.
- Under the terms of the nuclear deal, Iran was prohibited from enriching uranium above 3.67% with the exception of its research reactor activities. Enriched uranium above 90% can be used in a nuclear weapon.
- In September 2021, the International Atomic Energy Agency said Iran's stockpile of uranium enriched to up to 20% fissile purity was estimated at 84.3 kilograms (185 pounds) up from 62.8 kilograms (138 pounds) three months earlier.
- Scientists estimate that at least 170 kilograms (375 pounds) of enriched uranium is needed to make a bomb.

What is Uranium Enrichment?

- Natural uranium consists of two different isotopes - nearly 99% U-238 and only around 0.7% of U-235.
- U-235 is a fissile material that can sustain a chain reaction in a nuclear reactor.
- Enrichment process increases the proportion of U-235 through the process of isotope separation (U-238 is separated from U-235).
- For nuclear weapons, Enrichment is required up to 90% or more which is known as Highly Enriched Uranium/weapons-grade Uranium.
- For nuclear reactors, Enrichment is required up to 3-4% which is known as Low Enriched Uranium/reactor-grade Uranium.

Iran Nuclear Program and JCPOA

- In 2015, Iran with the P5+1 group of world powers - the USA, UK, France, China, Russia, and Germany agreed on a long-term deal on its nuclear programme.
- The deal was named as Joint Comprehensive Plan of Action (JCPOA) and in common parlance as Iran Nuclear Deal.

- Under the deal, Iran agreed to curb its nuclear activity in return for the lifting of sanctions and access to Global Trade. The agreement allowed Iran to accumulate small amounts of uranium for research but it banned the enrichment of uranium, which is used to make reactor fuel and nuclear weapons. Iran was also required to redesign a heavy-water reactor being built, whose spent fuel would contain plutonium suitable for a bomb and to allow international inspections. In May 2018, the USA abandoned the deal criticizing it as flawed and reinstated and tightened its sanctions. The USA held that it would attempt to force all countries to stop buying Iranian oil and put pressure on Iran to negotiate a new nuclear accord. The top Iranian general Qassem Soleimani (the commander of the Al-Quds Force of Iran's Islamic Revolutionary Guard Corps, IRGC) was assassinated by the USA during his visit to Iraq. This escalated tensions in the international arena.
- Amid rising tensions, Britain, France and Germany declared that Iran was violating the 2015 pact and launched a dispute mechanism that could eventually see the matter referred back to the Security Council and the reimposition of UN sanctions.
- Since sanctions were tightened, Iran has been steadily breaking some of its commitments to pressure the remaining signatories to find a way to provide Sanctions relief.

What is the Concern?

- Former President Donald Trump unilaterally pulled the United States from the JCPOA in May 2018, calling it defective, and slapped sanctions on the Middle Eastern country.
- Following that decision, the Trump administration, led by its State Department, carried out a so-called maximum pressure campaign with sanctions at its core to force Iran back to the negotiating table on a New Deal. In response, Iran repeatedly reneged on its commitments under the JCPOA. Under the previous administration, relations between Washington and Tehran sank to a record low that included maritime skirmishes and the United States assassinating military leader Qassem Soleimani in a drone strike in January 2020. Relations between the two sank to their lowest level in decades on Jan. 11, 2020, when Iran, in a heightened state of alert after it fired multiple missiles at two U.S. military bases in Iraq in retaliation for Soleimani's death, shot down an Ukrainian passenger jet leaving Tehran airport, killing all 176 on board.

Way Forward:

- All countries part of the 2015 deal should engage constructively and resolve all issues peacefully and through dialogue. Both the USA and Iran must act with strategic restraint as any crisis in West Asia will not only affect the region as a whole but will have a detrimental impact on global affairs as well.

4. India and Israel Free Trade Agreement

Why in News?

- India and Israel recently agreed to resume negotiations on a Free Trade Agreement (FTA) from Next Month as the two sides are confident to conclude the long-pending deal by June Next Year.

About the News:

- External Affairs Minister S Jaishankar announced after he met Alternate Prime Minister and Foreign Minister Yair Lapid that it will be concluded by June of next year.
- Israel has also joined the International Solar Alliance, a global initiative that India has spearheaded, with Jaishankar and Israel's Energy Minister Karine Elharrar signing on the Agreement.

What are the other Important Events?

- In order to ease travel between the Two Countries amidst the Covid pandemic, India and Israel have also agreed to mutually recognise vaccination certificates.
- He will also be holding talks with leading academics from all over Israel, business community leaders and interacting with the Indian Jewish community.
- Jaishankar will also be visiting places of historical significance to India, demonstrating its long-term presence in the region and constructive role played in shaping the history of the region.

Historical Background:

- India and Israel elevated bilateral relations to a strategic partnership during the historic visit of Prime Minister Narendra Modi to Israel in July 2017.
- Since then, the relationship between the two countries has focused on expanding knowledge-based partnership, which includes collaboration in innovation and research, including boosting the 'Make in India' Initiative.

India's Stand on Israel-Palestine Conflict:

- India was one of the few countries to oppose the United Nations' partition plan in November 1947, echoing its own experience during independence a few months earlier.
- India recognised Israel in 1950 but it is also the first non-Arab country to recognise Palestine Liberation Organisation (PLO) as the sole representative of the Palestinians. India is also one of the first countries to recognise the statehood of Palestine in 1988.

- In 2014, India favoured the United Nations Human Rights Council's (UNHRC) resolution to probe Israel's human rights violations in Gaza. Despite supporting the probe, India abstained from voting against Israel in UNHRC in 2015.
- As a part of Link West Policy, India has de-hyphenated its relationship with Israel and Palestine in 2018 to treat both the countries mutually independent and exclusive.
- In June 2019, India voted in favour of a decision introduced by Israel in the UN Economic and Social Council (ECOSOC) that objected to granting consultative status to a Palestinian Non-Governmental Organization.



5. Turkey added to FATF Grey List

Why in News?

- The Financial Action Task Force (FATF) has added Turkey, along with Jordan and Mali, in its revised list of “jurisdictions under increased monitoring”, also known as the FATF grey list. There are now 23 countries in the list.

About the News:

- If countries fail to prevent international money laundering and terrorist financing, then they shall be placed on the grey list. According to the FATF, when a jurisdiction is placed under increased monitoring, “it means the country has committed to swiftly resolve the identified strategic deficiencies within agreed timeframes and is subject to extra checks”.
- The FATF took two countries — Botswana and Mauritius — out of the grey list.
- It is because these countries had made significant progress in addressing the strategic AML/CFT (Anti-Money Laundering/Combating the Financing of Terrorism) deficiencies identified earlier by the FATF and included in their respective action plans.

About FATF:

- The Financial Action Task Force (FATF) is an **inter-governmental body** established in 1989 during the **G7 Summit** in Paris.
- The objectives of the FATF are to **set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing** and other related **threats to the integrity of the international financial system**.

- Its Secretariat is located at the Organisation for Economic Cooperation and Development (OECD) headquarters in Paris.
- Member Countries: As of 2019, it consists of thirty-seven member jurisdictions. India is one of the members.
 - ✓ **FATF has Two Lists:**
 - ✓ **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.
 - ✓ **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.
- The FATF Plenary is the decision making body of the FATF. It meets three times per year.

FATF and Pakistan:

- Pakistan was placed on the grey list by the FATF in June 2018 and was given a **27 Point plan of Action** to complete by October 2019, or face the risk of being placed on the black list with Iran and North Korea.
- Pakistan was previously placed on the FATF's grey list in February 2012, and had been removed from the grey list in February 2015 after it passed a National Action Plan (NAP) to deal with terrorism after the Peshawar School massacre in December 2014.
- It was placed under severe restrictions in the years 2008-2012.
- Now due to its failure to completely implement the 27-point action plan to check terror financing Pakistan is likely to be retained in the FATF's Grey list.
- The FATF noted the insufficiency of Pakistan's implementation as "serious concerns".
- The main purpose behind the decision is to not punish rather than incentivise, to make the required changes and make them faster.

What are the Impacts?

- By remaining on the "Grey List", it **would be difficult for countries on Grey list to get financial aid from the International Monetary Fund (IMF), World Bank and European Union**, making its financial condition more precarious.

6. Srinagar Students booked under UAPA

Why in News?

- The J&K police recently lodged two First Information Reports (FIRs) under the Unlawful Activities Prevention Act (UAPA) a day after multiple videos allegedly showed students of two medical colleges in Srinagar celebrating the Pakistan cricket team's victory over India in the T20 World Cup on Sunday.

About the News:

- Multiple videos, including those of medical students, went viral on social media on Sunday night, immediately after the Pakistan Team won the match in Dubai.
- In a few videos, students were seen cheering and raising slogans. The videos evoked sharp reactions on social media, with demands for action against these students.
- The cases have been filed under Section 13 of the UAPA and Sections 105-A and 505 of the Indian Penal Code (IPC).
- Several medical students termed the police action "harsh" and "unprecedented".
- They said that students have been cheering for all the players, irrespective of their teams, who played well during the India-Pakistan clash. It's a sport and people entertain themselves by cheering for their favourites. It's unfortunate the police took such a harsh decision after coming under pressure from social media activists.

About UAPA:

- UAPA passed in 1967 aims at effective prevention of unlawful activities associations in India.
- Unlawful activity refers to any action taken by an individual or association intended to disrupt the territorial integrity and sovereignty of India.
- The Act assigns absolute power to the central government, by way of which if the Centre deems an activity as unlawful then it may, by way of an Official Gazette, declare it so.
- It has death penalty and life imprisonment as highest punishments.
- Under UAPA, both Indian and foreign nationals can be charged. It will be applicable to the offenders in the same manner, even if crime is committed on a foreign land, outside India.
- Under the UAPA, the investigating agency can file a charge sheet in maximum 180 days after the arrests and the duration can be extended further after intimating the court.
- The 2004 amendment, added "terrorist act" to the list of offences to ban organisations for terrorist activities, under which 34 outfits were banned.

- Till 2004, “unlawful” activities referred to actions related to secession and cession of territory.
- In August 2019, Parliament cleared the Unlawful Activities (Prevention) Amendment Bill, 2019 to designate individuals as terrorists if the individual commits or participates in acts of terrorism, prepares for terrorism, promotes terrorism or is otherwise involved in terrorism.
- The Act empowers the Director General of National Investigation Agency (NIA) to grant approval of seizure or attachment of property when the case is investigated by the said agency.
- The Act also empowers the officers of the NIA, of the rank of Inspector or above, to investigate cases of terrorism in addition to those conducted by the DSP or ACP or above rank officer in the state.

Criticisms of UAPA:

- The law is often misused and abused. It could be used against political opponents and civil society activists who speak against the government and brand them as “terrorists.”
- The 2019 amendment gives unfettered powers to investigating agencies.
- The law is against the federal structure; given that ‘Police’ is a state subject under 7th schedule of Indian Constitution.

What Needs to be done?

- Anti-terror laws should not be used as tool to silence the critics of government.
- A committee may be set up to examine and supervise the process of designating individuals as terrorists and investigation of cases with objectivity and fairness.
- Arbitrariness under the law should be checked through Judicial Review.

6. INTERNATIONAL RELATIONS SNIPPETS

1. India, Australia to Conclude free trade pact by end 2022

Why in News?

- India and Australia have agreed to conclude a Free Trade Agreement (FTA) by the end of 2022.

What is a Free Trade Agreement (FTA)?

- A FTA is a pact between two or more nations to reduce barriers to imports and exports Among Them.

- Under a free Trade Policy, goods and services can be bought and sold across International borders with little or no government tariffs, quotas, Subsidies, or Prohibitions to inhibit their exchange.
- The concept of free trade is the opposite of trade Protectionism or Economic Isolationism.

Key Benefits Offered by FTA:

- **Reduction or Elimination of Tariffs on Qualified:** For example, a country that normally charges a tariff of 12% of the value of the incoming product will rationalize or eliminate that tariff.
- **Intellectual Property Protection:** Protection and enforcement of intellectual property rights in the FTA partner country is upheld.
- **Product Standards:** FTA enhances the ability for domestic exporters to participate in the development of product standards in the FTA partner country.
- **Fair Treatment for Investors:** FTA provides treatment as favourably as the FTA partner country gives equal treatment for investments from the partner country.
- **Elimination of Monopolies:** With FTAs, global monopolies are eliminated due to increased competition.

How many FTAs does India have?

- India has signed its first Free Trade Agreement (FTA) with Sri Lanka in 1998.
- Likewise, India had FTAs with: Nepal, Bhutan, Thailand, Singapore, ASEAN, Japan and Malaysia.
- India has signed Preferential Trade Agreements such as:
 - Asia Pacific Trade Agreement (APTA) with Bangladesh, China, India, Lao PDR, Republic of Korea, and Sri Lanka
 - Global System of Trade Preferences (GSTP)
 - India – MERCOSUR PTA etc. with South American countries

Types of Trade Agreements

1. Free Trade Agreement – discussed above

2. Preferential Trade Agreement

- ✓ In this type of agreement, two or more partners give preferential right of entry to certain products. This is done by reducing duties on an agreed number of tariff lines.
- ✓ Here a positive list is maintained i.e. the list of the products on which the two partners have agreed to provide preferential access.
- ✓ Tariff may even be reduced to zero for some products even in a PTA.

- ✓ India signed a PTA with Afghanistan.

3. Comprehensive Economic Partnership Agreement

- ✓ Partnership agreement or cooperation agreement are more comprehensive than an FTA.
- ✓ CECA/CEPA also looks into the regulatory aspect of trade and encompasses an agreement covering the regulatory issues.
- ✓ CECA has the widest coverage. CEPA covers negotiation on the trade in services and investment, and other areas of economic partnership.
- ✓ It may even consider negotiation on areas such as trade facilitation and customs cooperation, competition, and IPR. India has signed CEPAs with South Korea and Japan.

4. Comprehensive Economic Cooperation Agreement

- ✓ CECA generally cover negotiation on trade tariff and Tariff rate quotas (TRQs) rates only.
- ✓ It is not as comprehensive as CEPA.
- ✓ India has signed CECA with Malaysia.

5. Framework Agreement

- ✓ Framework agreement primarily defines the scope and provisions of orientation of the potential agreement between the trading partners.
- ✓ It provides for some new area of discussions and set the period for future liberalisation.
- ✓ India has previously signed framework agreements with the ASEAN, Japan etc.

6. Early Harvest Scheme

- ✓ An Early Harvest Scheme (EHS) is a precursor to an FTA/CECA/CEPA between two trading partners. For example, early harvest scheme of RCEP has been rolled out.
- ✓ At this stage, the negotiating countries identify certain products for tariff liberalization pending the conclusion of actual FTA negotiations.
- ✓ An Early Harvest Scheme is thus a step towards enhanced engagement and confidence building.

2. India's Path to Power: Strategy in a World Adrift

Why in News?

- A report titled "India's Path to Power: Strategy in a World Adrift" has recently highlighted several Foreign policy recommendations for India in the present context.

Highlights:

- It underlined that strategic autonomy, openness and inclusive economic growth are the key guiding principles.
- With the rise of China and India, and parallel decline of European Union and US' hegemony, the global balance of power is shifting towards Asia.
- This gets reflected in the growing popularity of the Indo-pacific region among western countries. There is an increasing trend towards multipolarity in Asia and the world. It is in India's interest to reinforce this trend.
- In this context, India should re-orient its foreign policy towards mobilising the larger constituency of developing countries and emerging economies with which it has convergent interests. Such interests should be advanced through reinforcing multilateral institutions and processes.
- Strategic autonomy must go in parallel with the further strengthening of partnerships with the US, Japan and Europe, which share India's security concerns and development prospects.
- Also, India-Russia relations will continue to be relevant in dealing with issues in the region and in responding to global challenges.
- Even though in some respects, globalisation may have stalled, in the past and in the coming future, it will be driven by rapid technological advancement.
- Therefore, in order to enhance its economic prospects and improve the welfare of its people, India must maintain an outward orientation of its economy.
- If India wants to play an expanded regional & global role and become a net security provider, it needs to better manage the threats and opportunities emanating from neighbouring countries.
- In this context, India should deal with the Chinese challenge.
- This is because China acknowledges that India is the only country in the neighbourhood with the comparable area, population, history, manpower, and scientific and technological capabilities, who can surpass it.
- It also asserted that China-Pakistan collusion demands India to adopt a politically guided strategic approach.
- There have been several instances where many countries have cited reservations to various domestic policies of India. Citizenship Amendment Act, 2019 is an example.

- In this context, domestic policies should reflect inclusivity, reducing inequalities, and delivering core responsibilities of health, education and public security to all its citizens. Also, there is a need to realise that India's innate cosmopolitanism is derived from its extraordinary diversity.

3. Henley Passport Index 2021

Why in News?

- India has been ranked 90th in the most powerful passport report 'Henley Passport Index 2021'.

Key Points:

- **About the Index:**
 - ✓ The Henley Passport Index is the original ranking of all the world's passports according to the number of destinations their holders can access without a prior visa.
 - ✓ Originally created by Dr. Christian H. Kaelin (chairman of Henley & Partners), the ranking is based on exclusive data from the International Air Transport Association (IATA), which maintains the world's largest and most accurate database of travel information.
 - ✓ It was launched in 2006 and includes 199 different passports.
 - ✓ Japan and Singapore stood at the top of this year's list, with their passport holders allowed to travel visa-free to 192 countries, while South Korea and Germany share the second position.
 - ✓ For the third consecutive year, Japan has secured the top position.
 - ✓ Meanwhile, Afghanistan, Iraq, Syria, Pakistan, and Yemen are among the least powerful.
 - ✓ India fell down to the 90th position, with its passport holders allowed to travel visa-free to 58 countries.
 - ✓ India shares the rank with Tajikistan and Burkina Faso.
 - ✓ India was ranked 85th in the January 2021's index', (84th) in 2020 and (82nd) in 2019.

4. Green Pacts inked at India, Denmark Summit

Why in News?

- India and Denmark signed two agreements on research in climate change, while another MoU on setting up a "green hydrogen" electrolyzer plant.

- This was the first summit-level visit to India since the COVID pandemic and the first State visit by a Danish leader since a bilateral freeze on ties a decade ago.
- This is in continuance to the joint declaration of the “Green Strategic Partnership” that India and Denmark forged after a virtual summit between PMs Modi and Frederiksen in September 2020.

Areas of Cooperation:

- There are agreements to pursue joint cooperation in the field of health technology and agriculture. Joint ventures on food safety, cold chains, food processing, and water management are to be finalized.
- Agreement between the Council of Scientific and Industrial Research and the Geological Survey of Denmark to conduct Groundwater Mapping.
- MoU between the Indian Institute of Science and Danfoss Industries to set up a research center on carbon-based cooling systems.
- The commercial MoU between Reliance Industries Limited and Stiesdal Fuel Technologies will work on the development of a “Hydrogen Electrolyser” for zero-carbon hydrogen to be manufactured in India.
- There are plans to build four factories for the production of solar PV modules, electrolyzers, fuel cells, and storage batteries in Gujarat.
- The two leaders also discussed the situation in Afghanistan and shared common concerns on terrorism, the rights of women and minorities, and the need for an inclusive Government.

Significance of Green Hydrogen:

- **Environmental:** Reduction of Carbon Footprint, Achievement of INDC targets, net-zero emissions by 2050, and limit global temperature rises to 1.5C.
- **Profitable:** Could supply up to 25% of the world’s energy needs by 2050 and become a US\$10 trillion addressable market by 2050.
- Production costs have fallen by 40% since 2015 and are expected to fall by a further 40% through 2025.
- Potential demand for imported hydrogen in China, Japan, South Korea, and Singapore could reach \$9.5 billion by 2030.
- Energy Security can be ensured in a sustainable manner.
- Reduce India’s dependency on crude oil, helping stabilize the Current Account Deficit.

Other Measures taken by India:

- National Hydrogen Energy Mission was formally announced in the Union budget for 2020-21. India also plans to extend the production-linked incentive (PLI) scheme for manufacturing electrolysers, which are used for producing green hydrogen.
- India is scheduled to host a two-day summit on green hydrogen, with countries like Brazil, Russia, China, and South Africa set to take part in it.

5. Global Minimum Tax Deal

Why in News?

- A global deal to ensure Big Companies pay a minimum tax rate of 15% and make it harder for them to avoid taxation has been agreed by 136 countries.

What is the News?

- The OECD said four countries – Kenya, Nigeria, Pakistan and Sri Lanka – had not yet joined the Agreement. However, the countries behind the accord together accounted for over 90% of the global Economy.

Why a Global Minimum Tax?

- With budgets strained after the COVID-19 crisis, many governments want more than ever to discourage Multinationals from shifting profits – and tax revenues – to low-tax Countries.
- Increasingly, Income from Intangible sources such as drug patents, software and royalties on intellectual property has migrated to these jurisdictions.
- This has allowed companies to avoid paying higher taxes in their traditional home countries.
- The Minimum tax and other provisions aim to put an end to decades of tax competition between governments to attract foreign investment.

How would a Deal Work?

- The global minimum tax rate would apply to overseas profits of multinational firms with 750 million euros (\$868 million) in sales globally. Govts could still set whatever local corporate tax rate they want. However, buif companies pay lower rates in a particular country, their home governments could “top up” their taxes to the 15% minimum, eliminating the advantage of shifting profits. A second track of the overhaul would allow countries where revenues are earned to tax 25% of the largest multinationals’ so-called excess profit – defined as profit in excess of 10% of revenue.

What Happens Next?

- The next step is for finance ministers from the Group of 20 economic powers to formally endorse the deal, paving the way for adoption by G20 leaders at an end October summit.
- Nonetheless, questions remain about the US position which hangs in part on a domestic tax reform the Biden administration wants to push through the US Congress.
- The agreement calls for countries to bring it into law in 2022 so that it can take effect by 2023, an extremely tight timeframe given that previous international tax deals took years to implement.
- Countries that have in recent years created national digital services taxes will have to repeal them.

What will be the Economic Impact?

- The OECD, which has steered the negotiations, estimates the minimum tax will generate \$150 billion in additional global tax revenues annually.
- Taxing rights on more than \$125 billion of profit will be additionally shifted to the countries where they are earned from the low tax countries where they are currently booked.
- Economists expect that the deal will encourage multinationals to repatriate capital to their country of headquarters, giving a boost to those economies.
- However, various deductions and exceptions baked into the deal are at the same time designed to limit the impact on low tax countries like Ireland, where many US groups base their European Operations.

Base Erosion and Profit Shifting (BEPS):

- BEPS refers to corporate tax planning strategies used by multinationals to “shift” profits from higher-tax jurisdictions to lower-tax jurisdictions.
- It thus “erodes” the “tax base” of the higher-tax jurisdictions.
- Corporate tax havens offer BEPS tools to “shift” profits to the haven, and additional BEPS tools to avoid paying taxes within the haven.
- It is alleged that BEPS is associated mostly with American technology and life science multinationals.

6. Govt pushes for a reset of India-ASEAN FTA

Why in News?

- The Commerce and Industry Minister has called for a renegotiation of the India-ASEAN free trade agreement (FTA).

Why Such Move?

- The MCI aims to prevent its misuse by ‘third parties’ and remove trade restrictions as well as non-tariff barriers that he said had hurt Indian exports disproportionately since the pact was operationalized in 2010.
- The focus needed to be on new rules to eliminate misuse ‘by third parties outside ASEAN’, the minister said, hinting at China.
- India had to deal with several restrictive barriers on exports in the ASEAN region, particularly in the agriculture and auto sectors.

ASEAN:

- Officially the Association of Southeast Asian Nations, ASEAN is an economic union comprising 10 member states in Southeast Asia. It promotes intergovernmental cooperation and facilitates economic, political, security, military, educational, and sociocultural integration between its members and other countries in Asia.

India-ASEAN Free Trade Agreement:

- The initial framework agreement for ASEAN–India Free Trade Area (AIFTA) was signed on 8 October 2003 in Bali, Indonesia. The FTA came into effect on 1 January 2010.
- The FTA had emerged from a mutual interest of both parties to expand their economic ties in the Asia-Pacific region.

Background of the AIFTA:

- India’s Look East policy was reciprocated by similar interests of many ASEAN countries to expand their interactions westward. After India became a sectoral dialogue partner of ASEAN in 1992, India saw its trade with ASEAN increase relative to its trade with the rest of the world. Between 1993 and 2003, ASEAN-India bilateral trade grew at an annual rate of 11.2%, from US\$2.9 billion in 1993 to US\$12.1 billion in 2003.
- Total Indian FDI into ASEAN from 2000 to 2008 was US\$1.3 billion.
- Acknowledging this trend and recognising the economic potential of closer linkages, both sides recognised the opportunities to pave the way for the establishment of an ASEAN–India Free Trade Area (FTA).

Structure of the AIFTA:

- The signing of the ASEAN-India Trade in Goods Agreement paves the way for the creation of one of the world’s largest FTAs – a market of almost 1.8 billion people with a combined GDP of US\$2.8 trillion.

- It sees tariff liberalisation of over 90 percent of products traded between the two dynamic regions, including the so-called “special products”.
- The products include palm oil (crude and refined), coffee, black tea and pepper.

Criticism:

- While there are many benefits to the ASEAN-India FTA, there is concern in India that the agreement will have several negative impacts on the economy.
- **Opening-up its Market:** This FTA will allow them to increase the market access of their products.
- **No specific Gains:** It is criticised, however, that India will not experience as great an increase in market access to ASEAN countries as ASEAN will in India.
- **Export driven ASEAN:** The economies of the ASEAN countries are largely export-driven. Considering India’s expansive domestic market, the ASEAN countries will look eagerly towards India as a home for its exports.
- **Huge trade deficit:** Since the early 2000s, India has had an increasing trade deficit with ASEAN. It is feared that a gradual liberalisation of tariffs and a rise in imported goods into India will threaten several sectors of the economy.
- **Inaccessible Markets:** As a dominant exporter of light manufacturing products, ASEAN has competitive tariff rates that make it difficult for India to gain access to the industry market in ASEAN countries.
- **Cheaper Imports:** The state of Kerala is an important exporter in the national export of plantation products. It fears that cheap imports of oil palm, rubber, coffee, and fish would lower domestic production, adversely affecting farmers and ultimately its economy.

7. Europe as a valuable strategic partner

Why in News?

- Last week’s in-person summit in Delhi was with the Danish prime minister, Mette Frederiksen.

Europe as a Valuable Partner:

- Few Asian countries view Europe with strategic suspicion. Many in Asia see Europe as a valuable partner.
- As the deepening confrontation between the US and China begins to squeeze South East Asia, Europe is widely seen as widening the strategic options for the region.

- The perspective is similar in Delhi, which now sees Brussels as a critical element in the construction of a multipolar world.
- Cultivate Europe: As External Affairs Minister Subrahmanyam Jaishankar puts it, India's strategy is to "engage America, manage China, cultivate Europe, reassure Russia, bring Japan into play".
- EU's Strategy for India: The EU outlined a strategy for India in 2018 to focus on four themes — sustainable economic modernisation, promotion of a rules-based order, foreign policy coordination, and security cooperation.
- At the summit in Portugal in May this year, the EU and India agreed to resume free trade talks and develop a new connectivity partnership that would widen options for the world beyond the Belt and Road Initiative. Rebalancing the international system: Above all, there is a recognition in both Delhi and Brussels that the India-EU strategic partnership is crucial for the rebalancing of the international system amidst the current global flux.

Possibilities with smaller European countries:

- Europe looms so large in the Indian diplomatic agenda today and smaller European states draw unprecedented political attention from Delhi.
- That Denmark, a country of barely six million people, can establish a significant green partnership with India, is a reminder that smaller countries of Europe have much to offer in India's economic, technological, and social transformation.
- Luxembourg brings great financial clout, Norway offers impressive maritime technologies, Estonia is a cyber-power, Czechia has deep strengths in optoelectronics, Portugal is a window to the Lusophone world, and Slovenia offers commercial access to the heart of Europe through its Adriatic sea port at Koper.
- As India begins to realise this untapped potential, there are new openings with the 27-nation EU headquartered in Brussels.

EU's important role in Indo-Pacific:

- The EU's Indo-Pacific strategy is likely to have a much greater impact on the region more immediately and on a wider range of areas than military security.
- Area's of impact range from trade and investment to green partnerships, the construction of quality infrastructure to digital partnerships, and from strengthening ocean governance to promoting research and innovation. Defence and security are important elements of the EU's Indo-Pacific strategy that "seeks to promote an open and rules-based regional security .

architecture, including secure sea lines of communication, capacity-building and enhanced naval presence in the Indo-Pacific. Whatever the specific circumstances of the AUKUS deal and its impact on France, the US wants all its partners, especially Europe, to contribute actively to the reconstitution of the Asian balance of power.

- Working with Quad: The EU strategy, in turn, sees room for working with the Quad in the Indo-Pacific, while stepping up security cooperation with a number of Asian partners, including India, Indonesia, Japan, the Republic of Korea, Singapore and Vietnam.
- India is conscious that Europe can't match America's military heft in the Indo-Pacific.
- But it could help strengthen the military balance and contribute to regional security in multiple other ways.

8. India invited to become full-time IEA member

Why in News?

- International Energy Agency (IEA) has invited India, the world's third-largest energy Consumer, to become its full-time member.

International Energy Agency (IEA):

- The IEA is an autonomous intergovernmental organization established in the framework of the Organisation for Economic Co-operation and Development (OECD) in 1974 in the wake of the 1973 oil crisis.
- Based in Paris, IEA was initially dedicated to responding to physical disruptions in the supply of oil, as well as serving as an information source on statistics about the international oil market. In the decades since, its role has expanded to cover the entire global energy system, encompassing traditional energy sources such as oil, gas, and coal as well as cleaner and faster growing ones such as solar PV, wind power and biofuels.
- It is best known for the publication of its annual World Energy Outlook.

Role and Responsibility:

- The Agency's mandate has broadened to focus on providing analysis, data, policy recommendations and solutions to help countries ensure secure, affordable and sustainable energy for all. In particular, it has focused on supporting global efforts to accelerate the clean energy transition and mitigate climate change.
- The IEA has a broad role in promoting rational energy policies and multinational energy technology co-operation with a view to reaching net Zero Emissions.

India and IEA:

- India, in March 2017, became an associate member of the Paris-based body which advises industrialised nations on energy policies.
- Today the IEA acts as a policy adviser to its member states, as well as major emerging economies such as Brazil, China, India, Indonesia and South Africa to support energy security and advance the clean energy transition worldwide.

Significance of the Invitation:

- This proposal if accepted will require New Delhi to raise Strategic oil reserves to 90 Days Requirement. India is becoming Increasingly influential in Global Energy Trends.

9. Explained: Patrolling Points along LAC

Why in News?

- The standoffs between Indian and Chinese troops in Ladakh on the Line of Actual Control (LAC), where initial steps towards disengagement have taken place, are around a number of patrolling points or PPs in Galwan, Hot Springs and Gogra areas.



What Exactly are Patrolling Points?

- PPs are patrolling points identified and marked on the LAC, which are patrolled with a stipulated frequency by the Security Forces.
- They serve as a guide to the location of the LAC for the soldiers, acting as indicators of the extent of 'actual control' exercised on the territory by India.
- By regularly patrolling up to these PPs, the Indian side is able to establish and assert its physical claim about the LAC.

Are all the Patrolling Points numbered?

- Some of the PPs are prominent and identifiable geographical features, such as a pass, or a nala junction where no numerals are given.
- Only those PPs, where there are no prominent features, are numbered as in the case of PP14 in Galwan Valley.

Are all on the Patrolling Points bang on the LAC?

- Mostly, yes. Except for the Depsang plains in northern Ladakh, where PP10, PP11, PP11A, PP12 and PP13 – from Raki Nala to Jivan Nala – do not fall on the LAC.
- These are short of the LAC, on the Indian side.

Are these Patrolling Points not manned?

- The PPs are not posts and thus not manned.
- Unlike on the Line of Control (LoC) with Pakistan, the border with China is not physically held by the Army all along.
- They are just physical markers on the ground, chosen for their location and have no defensive potential or tactical importance for the Army.
- If the Patrolling Points are not manned, how is the claim actually asserted?
- The claim is asserted by the Army or joint Army-ITBP patrols as they show more visible presence in these areas. This is done by physically visiting PPs with a higher frequency, as the deployment has moved closer to the LAC and due to Improved Infrastructure.
- As the Chinese may not see when the Indian patrols visit these PPs, they will leave come cigarette packets or food tins with Indian markings behind.
- That lets the Chinese know that Indian soldiers had visited the place, which indicates that India was in control of these areas.

Who has given these Patrolling Points?

- These PPs have been identified by the high-powered China Study Group, starting from 1975 when patrolling limits for Indian forces were specified.
- It is based on the LAC, after the government accepted the concept in 1993, which is also marked on the maps with the Army in the border areas.
- But the frequency of patrolling to PPs is not specified by the CSG – it is finalised by the Army Headquarters in New Delhi, based on the recommendations made by the Army and ITBP.

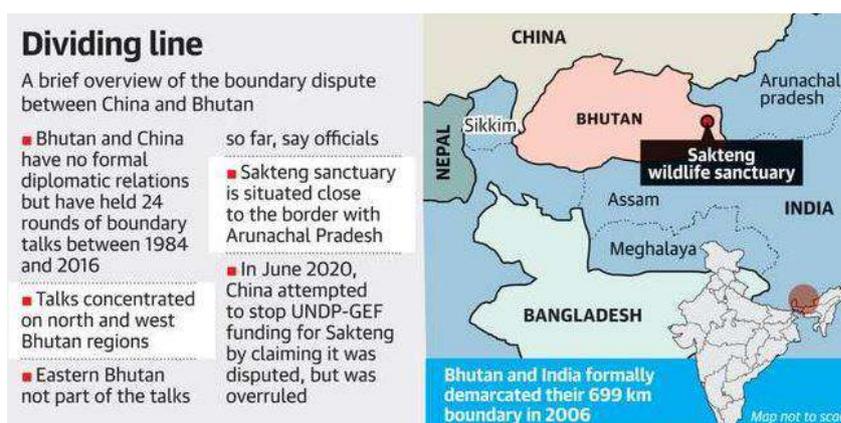
What is this Frequency?

- The frequency of reaching various PPs are given in the annual patrolling programme.
- Based on the terrain, the ground situation and the location of the LAC, the duration for visiting each PP is specified – it can vary from once a month to twice a year.
- **Major Friction Area: Hot Springs:**
- Hot Springs lies in the Chang Chenmo River valley, close to Kongka La, a pass that marks the Line of Actual Control.
- India's Patrolling Point 15, it is not a launchpad for any offensive action though the area did see action before and during the 1962 war.
- China's unwillingness to pull back its platoon-sized unit from Hot Springs is a sign of the difficulties that lie in normalising the situation.
- The PLA has traditionally had a major base east of Kongka La.
- The pass also marks the border between two of China's most sensitive provinces – Xinjiang to the north and Tibet to the south.

10. Bhutan-China Border Agreement

Why in News?

- In a step towards resolving their boundary disputes, Bhutan and China signed an agreement on a three-Step roadmap to help speed up talks to “break the deadlock” in negotiations.



Bhutan-China Border Issues:

- Bhutan shares an over 400-km-long border with China.
- Doklam: China wants to exchange the valleys to the north of Bhutan with the pasture land to the west (including Doklam), totalling 269 square kilometres.

- Jakarlung and Pasamlung valleys: located near Tibet to Bhutan's North, which measure 495 sq. kms. Sakteng Wildlife Sanctuary Project: China claims this area (near to Arunachal Pradesh) in eastern Bhutan as its own.

What is the Recent Agreement?

- The roadmap "for Expediting the Bhutan-China Boundary Negotiations", is expected to progress on the boundary talks process that has been delayed for five years.
- It was stalled due to the Doklam standoff in 2017, and then by the Covid Pandemic.
- Although China and Bhutan do not have official diplomatic relations they have engaged in 24 rounds of ministerial-level talks to resolve their border dispute.

Implications for India:

- The boundary issue between China and Bhutan is special because it not only relates to Bhutan but also has become a negative factor for China-India ties.
- China control much of the Doklam: Since the 2017 stand-off with India, Beijing has already strengthened its de facto control over much of the Doklam plateau, located strategically along the India-China-Bhutan trijunction.
- Bhutan supports it: This agreement has been equally endorsed and appreciated by Bhutan and China. Deadlock at LAC talks: Its timing is particularly significant New, given India-China border talks on their 17-month-old standoff at the Line of Actual Control appear to have hit an deadlock.
- India's strategic risks: This has big implications for India, since the Doklam swap would have given China access to the strategically sensitive "chicken neck" of the Siliguri corridor.
- India's interest

(a) Doklam

- ✓ The Doklam plateau remains hugely critical for India due to the Siliguri Corridor that lies to the south of Doklam.
- ✓ The corridor, also known as the 'Chicken's Neck', is a 22-km wide major arterial road connecting mainland India with its northeastern states and thus it is a highly sensitive area for China.

(b) Sakteng: the hotspot

- ✓ The Sakteng sanctuary adjoins West Kameng district and Tawang districts in India's Arunachal Pradesh state.
- ✓ Its strategic value lies in its proximity to Arunachal Pradesh, where China claims around 90,000 sq km of Indian territory.

- ✓ Tawang, the major bone of contention between India and China in the eastern sector of their border dispute, lies to the northeast of the Sakteng.
- ✓ Bhutan has to balance its ties with India as well as China.
- ✓ We need to explore channels that India can activate with Bhutan when it comes to the highly sensitive matter of settling the boundary dispute between them and China.

11. UAVs boost Army watch in eastern sector

Why in News?

- The Army Aviation has recently got control of Heron-I unmanned aerial vehicles (UAV) in the eastern sector.

Heron-I Unmanned Aerial Vehicles (UAV):

- It is a medium-altitude long-endurance (MALE) unmanned air vehicle (UAV) system primarily designed to perform strategic reconnaissance and surveillance operations.
- It was developed by the Malat division of Israel Aerospace Industries.
- These are not equipped with offensive weapons and are confined to being used in reconnaissance missions. With this, India has the capability to attack enemy positions and even moving targets deep inside enemy territory without having to send across a fighter aircraft.

Details:

- This brings all aviation assets under one roof and augments its ability to keep an eye on Chinese activities across the border. In the last few years, the Army and Air Force have significantly upgraded their defences in the eastern sector, including induction of new equipment, as part of efforts to match China's build-up and infrastructure development on its side of the Line of Actual Control (LAC). There has also been a major impetus to infrastructure development in the region. During the standoff in eastern Ladakh, the Army Aviation had seen a significant increase in the employment of helicopters along the northern borders.
- The Army Aviation Brigade at Missamari, Assam was raised in March 2021 to enable better command and control of aviation resources. The Brigade operates the Cheetah and Advanced Light Helicopter (ALH) Dhruv utility helicopters, Rudra weaponised ALH and Heron-I UAVs.

Significance:

- There are certain advantages of UAVs or remotely piloted aircraft (RPA) being with Army Aviation. Heron-I unmanned aerial vehicles (UAV) were earlier with the Artillery.

- All aerial assets under one umbrella allows optimised employment of RPAs during operations in conjunction with other aviation assets.
- In the future battlefield, manned and unmanned aircraft teaming will reap huge dividends.

12. COP 26 United Nations Climate Change Conference

Why in News?

- The COP 26 United Nations Climate Change Conference will be hosted by the UK from 31st October to 12th November.

Highlights:

- Intergovernmental Panel on Climate Change (IPCC) published its assessment report on Earth's climate, highlighting heat waves, droughts, extreme rainfall and sea-level rise in the coming decades.
- COP 26 Goals: According to the United Nations Climate Change Framework Convention (UNFCCC), COP26 will work towards four goals:
- To secure Global Net-Zero by Mid-Century and keep 1.5 Degrees within reach.
- Countries are being asked to come forward with ambitious 2030 emissions reductions targets that align with reaching net zero by the middle of the century.
- To deliver on these stretching targets, countries will need to Accelerate the phase-out of coal, Curtail deforestation, Speed up the switch to electric vehicles and Encourage investment in renewables.
- Countries will work together to 'protect and restore ecosystems and build defences, warning systems and resilient infrastructure and agriculture to avoid loss of homes, livelihoods and even lives.'
- Developed countries must make good on their promise to mobilise at least USD100bn in climate finance per year. Another important task at the COP26 is to 'finalise the Paris Rulebook'. Leaders will work together to frame a list of detailed rules that will help fulfil the Paris Agreement.
- Update its Nationally Determined Contributions (NDCs).
- (NDCs detail the various efforts taken by each country to reduce the national emissions)
- Sector by sector plans are needed to bring about development.
- Decarbonisation of the electricity, transport sector and starting to look at carbon per passenger mile is needed.
- Aggressively figure out how to transition the coal sector.

13. The Outlines of a National Security Policy

Why in News?

- National security concepts have, in the two decades of the 21st century, undergone fundamental changes. Cyberwarfare has vastly reduced the deterrent value of conventional deterrents.

Emergence of Cyberwarfare:

- In the 21st century, after cybertechnology enters as an important variable in nations' defence policies. Geographical land size or GDP size will be irrelevant in war-making capacity or deterrence. These fundamental changes are entirely due to the earlier 20th century innovations in cybertechnology and software developments.
- Drones, robots, satellites and advanced computers as weapons are already in use.
- Some examples of further innovations are artificial intelligence and nanotechnology.
- Tracking those cyber warfare threat will need a new national security policy.
- By credible accounts, China, recently, publicly cautioned Indians to sit up and take notice by using cybertechnology to shut down Mumbai's electric supply in populated areas of the city, for a few hours.

Four Dimensions of National Security Policy:

- **Objectives:** the objective of the National Security Policy in the 21st century is to define what assets are required to be defended, the identity of opponents.
- Although the novel coronavirus is perhaps accidental, it has completely destabilised peoples globally and their governments in all nations of the world over.
- This is a preview of the kinds of threats that await us in the coming decades which a national security policy will have to address by choosing a nation's priorities.
- **Priorities:** National security priorities will require new departments for supporting several frontiers of innovation and technologies such as hydrogen fuel cells, desalination of seawater, thorium for nuclear technology, anti-computer viruses, and new immunity-creating medicines. This focus on a new priority will require compulsory science and mathematics education, especially in applications for analytical subjects.
- **Strategy:** The strategy required for this new national security policy will be to anticipate our enemies in many dimensions and by demonstrative but limited pre-emptive strikes by developing a strategy of deterrence of the enemy.

- For India, it will be the China cyber capability factor which is the new threat for which it has to devise a new strategy.
- **Resource Mobilisation:** The macroeconomics of resource mobilisation depends on whether a nation has ‘demand’ as an economic deficit or not.
- If demand for a commodity or service is in deficit to clear the market of the available supply of the same, then liberal printing of currency and placing it in the hands of consumers is recommended for the economy to recover the demand-supply parity.
- A way to increase demand is by lowering the interest rate on bank loans or raising the rates in fixed deposits which will enable banks to obtain liquidity and lend liberally for enhancing investment for production. If it is ‘supply’ that is short or in deficit compared to demand, then special measures are required to incentivise to encourage an increase in supply.

14. Crises in Pakistan is an occasion to reflect on the long-term regional consequences

Why in News?

- Whether it can or should make a difference to Pakistan’s internal politics, India must pay greater attention to the internal dynamics of our most difficult neighbour and more purposefully engage a diverse set of actors in that polity.

India’s Interventions in Internal Affairs of Neighbours:

- Except for Pakistan, in most other countries of the subcontinent, India is drawn quickly into their internal political arguments.
- Delhi has always exercised some influence on the outcomes of those contestations.
- It is enough to note that India’s interventions are a recurring pattern in the subcontinent’s international relations. Even when Delhi is reluctant to get into the weeds of these conflicts, the competing parties in the neighbourhood demand India’s intervention on their behalf. All of the contestants, of course, resolutely oppose India’s meddling when it goes against them. But Delhi has rarely been a decisive player in Pakistan’s internal politics. Delhi’s hands-off attitude is surprising, given India’s huge stakes in the nature of Pakistan’s policies and their massive impact on regional security.

Current Crises in Pakistan:

- Internal crises: Among the many challenges confronting Pakistan is the fresh breakdown in civil-military relations.

- Pakistan's economy is in a tailspin as it struggles to negotiate a stabilisation package with the International Monetary Fund.
- The militant religious movement Tehreek-e-Labbaik Pakistan (TLP) has mounted a fresh march against the capital demanding the release of its arrested leader.
- External crises: The internal crises are sharpened by worsening external conditions.
- In Afghanistan, Pakistan has succeeded in restoring the Taliban to power.
- The celebrations have not lasted too long; the long-awaited victory is turning sour.
- The Arab Gulf states that have been fast friends of Pakistan are now tilting towards India.
- Once a favourite partner of the West, Pakistan today faces tensions in its ties with the US and Europe.
- More broadly, nuclear weapons and a powerful army seem unable to stop Pakistan's relative decline in relation to not just India but also Bangladesh.
- Pakistan's economy is now 10 times smaller than that of India and is well behind Bangladesh.

Suggestions:

- Whether it can or should make a difference to Pakistan's internal politics, India must pay greater attention to the internal dynamics of our most difficult neighbour and more purposefully engage a diverse set of actors in that polity.
- For Delhi, it is always about narrow political arguments with Rawalpindi and Islamabad; it is as if the people of Pakistan do not exist.
- For India, the crises in Pakistan should be an occasion to reflect on the long-term regional consequences of Pakistan's internal turbulence.
- It might be argued that that unlike elsewhere in the neighbourhood, Delhi's leverage in Pakistan's politics is limited. But it is by no means negligible.

15.A festering crisis in the Palk Strait

Why in News?

- Five fishermen from Tamil Nadu have lost their lives in the Palk Strait in 2021 in reported incidents between the Indian fishermen and Sri Lankan Navy.
- Indian fishermen while trying to earn a living, reportedly cross the International Maritime Boundary Line, between India and Sri Lanka.
- They are often intercepted in Sri Lankan waters by the Sri Lankan Navy for "illegal Fishing".

- Tamil Nadu fishermen's associations have accused the Sri Lankan Navy of brutally attacking the fishermen, while Sri Lanka has denied the allegations.

Palk Strait Issue:

- The fishermen's deaths serve as a stark reminder of the unresolved fisheries conflict in the Palk Strait. The issue has become acute from the time Sri Lanka's 30 year-long civil war ended in 2009. At the end of the civil war, Sri Lanka's northern Tamil fishermen, who were displaced and barred access to the sea, began returning to their old homes.
- The resumption of fishing activities from North Sri Lankan fishermen led to tension with Tamil fishermen on the other side of the sea over the marine resources of the region.

Bottom Trawling:

- The practice of bottom trawling by Tamil Nadu fishermen is a grave concern.
- The bottom trawling fishing method involves dragging large fishing nets along the seabed, scooping out prawns, small fishes and virtually everything else at one go. This practice is deemed destructive and antithetical to sustainable fishing practices. It involves a large volume of bycatch which could be destructive to fishing populations. As a result, the fish catch has fallen drastically and many varieties of fish have been vanishing.
- Also, incessant bottom trawling along the coast of Tamil Nadu over the years has meant that the Tamil Nadu fishermen are drawn to the relatively resource-rich Sri Lankan waters.

Livelihood Issue:

- The daily wage fishermen are largely dependent on fishing and any disruption in the fishing activity poses a huge risk to the lives of their families. While the vessel owners have been able to reap substantial profits, the fishermen receive only meagre incomes while facing huge risks to their lives.

Approach of Sri Lanka:

- The Sri Lankan state's response to the problem has been largely a military and legal one, tasking its Navy with patrolling the seas and arresting "encroachers", banning trawling, and levying stiff fines on foreign vessels engaged in illegal fishing in its territorial waters.
- This has been inconsistent with the need for a more holistic humanitarian approach as proposed by the Indian side.

Impact on the bilateral relation between India and Sri Lanka:

- The Palk Bay conflict could be the biggest test yet to the bilateral relationship between India and Sri Lanka. The issue has gained political mileage in both countries and hence could have a disastrous Impact on the Relationship.

16. Queen Heo Hwang-ok Memorial Park

Why in News?

- The Ram Katha Park has been recently renovated which will be renamed as Queen Heo Hwang-ok memorial park. The Korean queen is believed to have had Indian roots.

Highlights:

- India and South Korea in 2001 signed an agreement to develop Ayodhya and Gimhae as sister cities. Earlier, in March 2021 Indian Defence Minister and his South Korean counterpart inaugurated the India-Korea Friendship Park in a ceremony at the Delhi Cantonment. She was a Korean queen who is believed to have been born Princess Suriratna of Ayodhya, daughter of King Padmasen and Indumati.
- Padmasen ruled the ancient kingdom of Kausala (Kosala), a region that extended from present-day UP to Odisha. The memorial park now comprises Queen and King pavilions with their busts in place, and a pond to represent Princess Suriratna's journey.
- Her story is described in Samguk Yusa (Memorabilia of Three Kingdoms).
- It is a 13th-century collection of legends, folktales and history of Korea's three kingdoms — Goguryeo, Baekje and Silla — and some other regions.
- In 48 BC, the princess travelled to Korea from the ancient land of 'Ayuta' and married Kim Suro, founder and King of Geumgwan Gaya in south-eastern Korea.
- There is no consensus among historians on the location of 'Ayuta' as some historians believe that the princess could actually be from Thailand's Ayutthaya kingdom.
- While in the popular imagination, it is associated with Ayodhya in Uttar Pradesh, there is no Indian account of the legend. She travelled by boat along with an entourage, having been sent by her father, who is said to have had a dream about her marrying king Suro.
- A pagoda, believed to have been brought by the queen from India to calm the ocean gods, is placed next to the tomb. According to the legend, the princess had taken a golden egg to Korea, and the park includes an Egg made of Granite.

17. Traffic Management Policy Framework for Drones

Why in News?

- The Ministry of Civil Aviation has recently notified a traffic management policy framework for drones. This could be regarded as the first step towards allowing Beyond Visual Line of Sight (BVLOS) drone operations.

Highlights:

- **Traffic Management Framework:** The rules envisages private, third-party service providers for ensuring safe operations.
- Under the framework, Unmanned Traffic Management Service Providers (UTMSP) will extend automated, algorithm-driven software services instead of voice communication as in the traditional Air Traffic Management (ATM) systems.
- **Scope of Regulation:** All drones (except nano drones operating in the green zone) shall be required to share their real-time location through the network to the Centre.
- Law enforcement and security agencies will also have access to some information in the UTM ecosystem on a need-to-know basis.
- **Responsibility of UTMSP:** They will primarily be responsible for segregating and separating a drone from other drones and manned aircraft in the airspace below 1,000 feet in the country. The UTMSP will be assisted by Supplementary Service Providers (SSPs), who will maintain data about terrain, weather, location of manned aircraft and provide services such as insurance, data analytics and drone fleet management.
- Digital Sky platform shall continue to be the interface for government stakeholders to provide approvals and permissions to drone operators. It provides end-to-end governance of drones related activities in India.
- **Financial Provisions:** The policy also allows UTMSPs to levy a service fee on users, a small portion of which will also be shared with the Airports Authority of India.
- **Significance of the Rules:** India has started taking steps towards enabling advanced use cases like delivery of goods using unmanned aircraft and is also looking at human transportation using unmanned aircraft.