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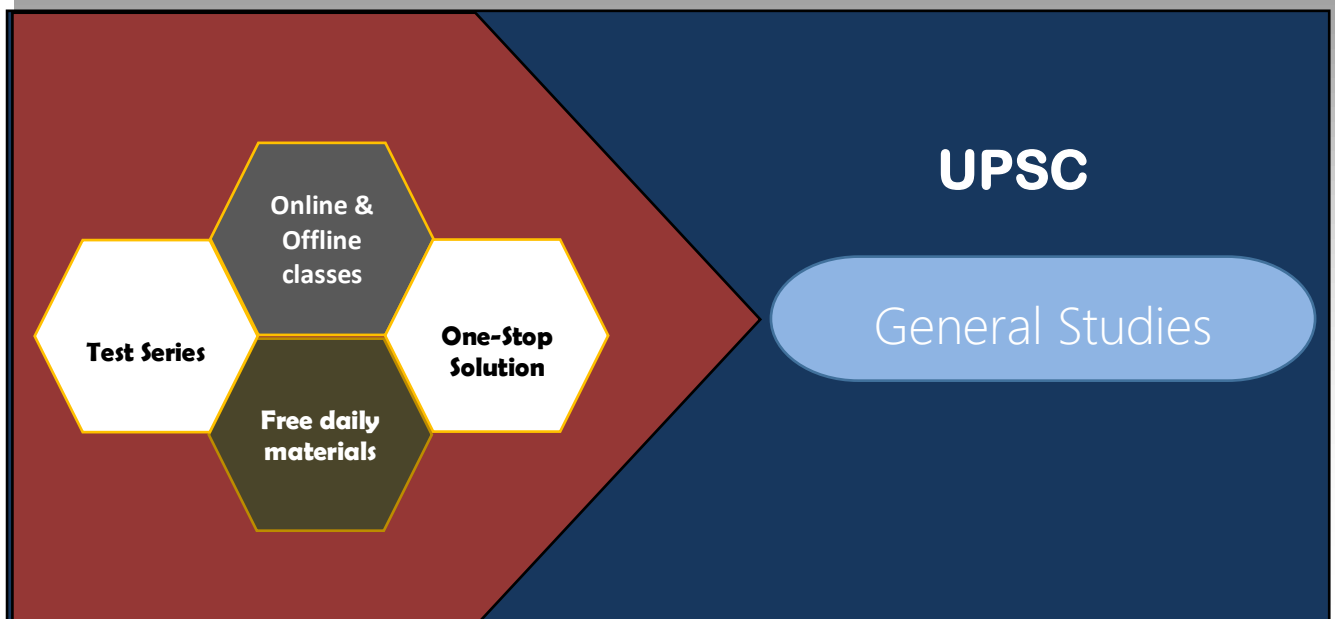
Monthly current affairs magazine

CURRENT AFFAIRS

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THE HINDU & INDIAN EXPRESS**



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GS 1 : Heritage and culture ,Geography of the World and Society

1. Chola inscriptions on qualifications for civic officials

In the Kancheepuram district of Tamil Nadu, some Chola-era inscriptions on Kanthaleeswarar Temple bear testimony to the qualifications required for members of the village administrative council.

Inscription details: Kudavolai System

- The Kudavolai system was very vital and unique feature of administration of villages of Cholas.
- In the system one representative is elected from each ward and every village had 30 wards.
- The village administrative committee was called as variyam.
- The election was unique as names of contestants were written on palm leaf and put in a pot.

Taxation details

- The rulers were considerate while taxing agricultural produce.
- For areca nuts, only 50% tax would be collected for the first 10 years after cultivation. Farmers would pay full tax only after the trees started yielding fruits.
- Similarly, 50% tax was imposed on banana crops until the yield.

GS 2 : Polity, Governance, International Relations

1. Making parties constitutional

The article talks about the need for making political parties in India constitutional.

Importance and Nature of Political Parties:

A political party is an organised group of citizens who hold common views on governance and act as a political unit that seeks to obtain control of the government with a view to further the agenda and policy they profess.

- They are indispensable links between the people and the representative machinery of government.
- Political parties maintain a continuous connection between the people and those who represent them either in government or in the opposition.
- Political parties have extra-legal growth in almost every democratic country.
 - The American Constitution does not presume the existence of political parties.
 - In Britain too, political parties are still unknown to the law.

Similarly, political parties in India are extra-constitutional, but they are the breathing air of the political system.

The German Model:

- The Basic Law of the Federal Republic of Germany gives constitutional status to political parties. Its Article 21 deals with their status, rights, duties and functions.
- It provides:
 - Political parties shall participate in the formation of the political will of the people. They may be freely established. Their internal organisation must conform to democratic principles. They must publicly account for their assets and for the sources and use of their funds.
 - Parties that, by reason of their aims or the behaviour of their members, seek to undermine or abolish the free democratic basic order or to endanger the existence of the Federal Republic of Germany shall be unconstitutional.
 - The Federal Constitutional Court shall rule on the question of unconstitutionality. Details shall be regulated by federal laws.

Internal Democracy in Political Parties:

- Political parties in developed nations maintain high levels of internal democracy.
- In the U.K., the Conservative Party has the National Conservative Convention as its top body. It has a Central Council and an Executive Committee. The Central Council elects its President, a Chairman and Vice-Chairmen at its annual meeting. It also elects an Executive Committee which meets once a month.
- In the U.S., both the Democratic and the Republican parties have the National Committee as their top decision-making body. The National Committee plays an important role in the presidential election and agenda-setting.

The German Model for India:

- As compared to the U.S. and the U.K. models, the German model of constitutionalising political parties is more desirable for India.
- Section 29A(5) of the Representation of the People Act, 1951 is the only major statutory provision dealing with political parties in India.
 - It orders that a political party shall bear true faith and allegiance to the Constitution of India as by law established, and to the principles of socialism, secularism and democracy, and would uphold the sovereignty, unity and integrity of India.

Conclusion:

- The Indian Constitution is one of the longest constitutions in the world. It even elaborately deals with co-operative societies.
- The right to form co-operative societies is a fundamental right under Article 19 (1)(c), but the right to form political parties is not.
- Political parties are the agents of democracy and safety valves in the political system. They desperately need reform.
- Hence, it is high time to constitutionalise political parties to ensure in-party democracy, to impart transparency in their finances, and to de-communalise them.

2. Various terms related to Indian Monsoon

The monsoon is likely to begin withdrawing from the mainland from October 6, said the India Meteorological Department (IMD).

Let us learn all terminologies related to Monsoon.

What is Monsoon?

- Indian monsoon, the most prominent of the world's monsoon systems, which primarily affects India and its surrounding water bodies.
- It blows from the northeast during cooler months and reverses direction to blow from the southwest during the warmest months of the year.

Onset of Monsoon

- This process brings large amounts of rainfall to the region during June and July.
- As the high-sun season (that is, the Northern Hemisphere summer) moves northward during April, India becomes particularly prone to rapid heating because the highlands to the north protect it from any incursions of cold air.

- There are three distinct areas of relative upper tropospheric warmth – namely, (1) above the southern Bay of Bengal, (2) above the Plateau of Tibet, and (3) across the trunks of the various peninsulas that are relatively dry during this time.
- These three areas combine to form a vast heat-source region.
- In contrast, a heat sink appears over the southern Indian Ocean as the relatively cloud-free air cools by emitting long-wavelength radiation.
- Monsoon winds at the surface blow from heat sink to heat source.

Peak period

- The position of the easterly jet controls the location of monsoonal rains, which occur ahead and to the left of the strongest winds and also behind them and to the right.
- The surface flow, however, is a strong, south-westerly, humid, and unstable wind that brings humidifies of more than 80 percent and heavy squally showers that are the “burst” of the monsoon.
- The overall pattern of the advance follows a frontal alignment, but local episodes may differ considerably.

Key areas

- Most spectacular clouds and rain occur against the Western Ghats in India, where the early monsoonal airstream piles up against the steep slopes, then recedes, and piles up again to a greater height.
- Each time it pushes thicker clouds upward until wind and clouds roll over the barrier and, after a few brief spells of absorption by the dry inland air, cascade toward the interior.
- Various factors, especially topography, combine to make up a complex regional pattern.

Break in Monsoon

- During the south-west monsoon period after having rains for a few days, if rain fails to occur for one or more weeks, it is known as break in the monsoon.
- These dry spells are quite common during the rainy season.
- In northern India rains are likely to fail if the rain-bearing storms are not very frequent along the monsoon trough or the ITCZ over this region.
- Over the west coast the dry spells are associated with days when winds blow parallel to the coast.

Withdrawal of Monsoon

- By August the intensity and duration of sunshine have decreased, temperatures begin to fall, and the surge of south-westerly air diminishes spasmodically almost to a standstill in the northwest.

- In September, dry, cool, northerly air begins to circle the west side of the highlands and spread over north-western India.
- The easterly jet weakens, and the upper tropospheric easterlies move much farther south.
- Because the moist southwesterlies at lower levels are much weaker and variable, they are soon pushed back.
- The rainfall becomes extremely variable over most of the region, but showers are still frequent in the south-eastern areas and over the Bay of Bengal.
- By early October, variable winds are very frequent everywhere.

Winter rains

- At the end of the month, the entire Indian region is covered by northerly air and the winter monsoon takes shape.
- The surface flow is deflected by the Coriolis force and becomes a north-easterly flow.
- Tropical depressions and cyclones are important contributing factors.
- Most of India thus begins a sunny, dry, and dusty season.
- Conversely, the western slopes of the Karakoram Range and Himalayas are then reached by the midlatitude frontal depressions that come from the Atlantic and the Mediterranean.
- The winter rains they receive, moderate as they are, place them clearly outside the monsoonal realm.

3. A State, a 'clean sweep' and the art of sanitation

The article talks about the commendable progress made by Madhya Pradesh in implementing the Swachh Bharat Abhiyan.

Swachh Bharat Abhiyan:

- This campaign was launched by the Prime Minister on 2nd October 2014 to honour Mahatma Gandhi's vision of a clean country.
- The Swachh Bharat Abhiyan (SBA), or Clean India Mission, aimed to provide every family with sanitation facilities, including toilets, solid and liquid waste disposal systems.
- The call to achieve the goal by October 2, 2019, and make this an appropriate tribute to Mahatma Gandhi, the Father of the Nation, on his 150th birth anniversary was well-received by all Indian citizens and the international community, too.

Details:

- Madhya Pradesh (MP) Government followed a comprehensive and scientific approach in implementing the Swachh Bharat Abhiyan.

- Urban Madhya Pradesh received its ODF certification on October 2, 2017.
- Rural Madhya Pradesh received its ODF certification the following year on October 2, 2018.
- As of today, Madhya Pradesh ranks third in the country in the cleanliness survey, 2020.
- Indore has been ranked the cleanest city in the country in Swachh Survekshan (Cleanliness Survey) since 2017. It has become India's first 'Water Plus' city in Swachh Survekshan 2021.
 - It achieved this feat by treating its wastewater to a satisfactory level, before releasing it into rivers.

The capital city of Bhopal has bagged the title of the cleanest and the greenest capital of the country in the cleanliness survey of 2020.

MP's Course of Action in Implementing SBA:

- A comprehensive exercise was initiated to identify the sanitation issues people faced through a series of interactions with all identified stakeholders.
- Consequently, insights were gathered to inform the strategy to make Madhya Pradesh 100% Open Defecation Free (ODF) by 2019.
- Swachhta (cleanliness) was made an individual's responsibility, both at a personal and public level.
- People's participation was the driving force behind the success of Swachh Bharat Abhiyan in Madhya Pradesh.
- A multi-pronged strategy was designed involving the construction of toilets, implementing tough regulatory steps such as levying fines for open defecation and encouraging behavioural change through innovation.
 - This approach guaranteed the sustenance of changed behaviours and the longevity of the impact of efforts.

Good leadership encouraged a sustained change of behaviour. Right from a Collector to a local level leader at the gram panchayat level, they took the message of cleanliness to the people.

What followed was a remarkable change in the attitudes of the people as they began to own the movement.

The collective efforts of the citizens of Madhya Pradesh and the State machinery have brought about an irreversible positive transformation in sanitation, right down to the grassroots.

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

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

Missions

[A] 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.

[B] 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. Shringla begins four-day visit to Sri Lanka today

In News :

Foreign Secretary Harsh Shringla is in Colombo for a four-day visit to Sri Lanka.

Details:

- The visit of the Foreign Secretary will provide an opportunity to:
 - review the bilateral ties
 - review the progress of ongoing bilateral projects
 - build on the ongoing cooperation to tackle COVID-related disruptions.
- The visit is being seen as an attempt to reset ties that have been under a strain over:
 - The Sri Lankan decision to cancel an MoU with India and Japan for Colombo's East Container Terminal.
- Slow progress in a number of other proposals, including the Trincomalee oil farms, the Sampur power project (which is being converted to a solar project), and the development of the northern part of the island nation.
- In particular, India has been concerned by the perception that while Indian projects have taken inordinately long to be cleared, projects by China have been cleared even during the pandemic.
 - Example: The Sri Lankan government's Parliament vote to facilitate the \$1.4 billion China-backed Colombo Port City development.
 - The ruling Rajapaksa administration passed a Bill, titled 'Colombo Port City Economic Commission', in Parliament, outlining proposed laws for the \$1.4 billion Port City being built on reclaimed land at Colombo's seafront.
 - It is touted by the government as an investment hub for foreign capital.

Agenda:

- Assessing progress on a number of infrastructure and energy projects, and Sri Lanka's need for economic assistance will be at the top of the agenda.
- He is expected to raise concerns about the reconciliation process and promises of devolution of power to northern Sri Lanka, which have remained unfulfilled more than a decade after the end of the war on the Liberation Tigers of Tamil Eelam (LTTE) in 2009.

5. CJI for forming special panels to probe 'atrocities' by police

In News :

Chief Justice of India N.V. Ramana has expressed his strong reservations about the conduct of police officers and bureaucracy in the country.

Details:

- Chief Justice of India has said that he is 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.
- Some police officers are in the spotlight for committing serious crimes.
 - Recently, police officers in Gorakhpur, Uttar Pradesh, have been accused of causing the death of a businessman during a raid in a hotel.
 - In Tamil Nadu, the CBI chargesheeted nine policemen for the custodial deaths of father-son duo P. Jayaraj and J. Benicks.
 - There have been instances of district administration officers caught on video manhandling citizens during the lockdown.
- The Supreme Court had raised the issue of nexus between politicians in power and police officers.
- Also, earlier, the Supreme Court had orally referred to a disturbing trend, where police officials, who had sided with the party in power, are later targeted when another political dispensation comes to power.

6. New pill to patients with COVID-19

Molnupiravir:

- Molnupiravir is an investigational **anti-viral drug for COVID-19** being developed by pharmaceutical major Merck and Ridgeback Biotherapeutics.
- The drug works by **inhibiting the process by which the virus replicates**. It alters critical enzymes that are necessary for the virus to begin replicating in the body's host cells.
- Phase 3 trials of the drug have shown promising results.

Significance:

- Molnupiravir is a pill and hence will **not be required to be administered**
- It would also be **cheaper than the monoclonal antibody therapy**.
- The drug has shown '**consistent efficacy**' across viral variants Gamma, Delta and Mu in those with mild or moderate disease

7. Digital health mission

In News:

- The launch of the Ayushman Bharat Digital Mission (ABDM).

Details:

- The Ayushman Bharat Digital Mission (ABDM) aims to give every citizen a unique digital health ID and provisions for users to access and link personal records with their unique ID to create a longitudinal health history.
 - The unique health ID will be a randomly generated 14-digit identification number. The ID will give the user unique identification, authentication and will be a repository of all health records of a person.
 - The user will also set up a Personal Health Records (PHR) address.

Significance:

- The Digital Ecosystem will enable facilities like digital consultation and hence will facilitate easy, affordable and accessible treatment.
- The new system will not only simplify processes of hospitals but also increase ease of living for the patients.
- The introduction of a unique health identification card at the national level would be a game changer in monitoring, providing and managing healthcare for all citizens. The digital ecosystem provides a more holistic and inclusive model for healthcare in India.
- The meta data could provide valuable insights not only for the government's evidence based policy making but also to insurance companies, international researchers, and pharma companies.

Challenges:

- Data security and privacy of an individual remains a concern with the new system. Despite provisions such as making citizen's consent mandatory for sharing their information, such provisions can be easily manipulated by interested entities.
- The lack of access to technology, poverty and lack of understanding may hamper the mission.
- India's previous experience with respect to similar attempts like the One Nation One Ration card, PM-JAY card, Aadhaar card, etc., had brought to light many issues such as errors. The DHM is also likely to face similar issues.
- Also India faces structural issues like the acute shortage of healthcare professionals and healthcare facilities. The digital health mission will be rendered ineffective without such bare minimum resources.

8. Panel set up to implement Assam Accord

Context:

- The Assam government has set up an eight-member sub-committee to examine and prepare a framework for the implementation of all clauses of the Assam Accord of 1985.

Assam Accord:

- It was a tripartite accord **signed between the Government of India, State Government of Assam and the leaders of the Assam Movement in 1985.**
- The signing of the Accord led to the conclusion of a six-year agitation that was launched by the All Assam Students' Union (AASU) in 1979, **demanding the identification and deportation of illegal immigrants from Assam.**
- Among the many clauses of the accord, clause 6 holds immense value. The **Clause 6 of the Accord** pertains to the constitutional, legislative and administrative safeguards to “protect, preserve and promote the cultural, social, linguistic identity and heritage of the Assamese people”.

9. What are the concerns of digital health mission?

The Ayushman Bharat Digital Mission (ABDM), was recently launched by the PM.

About Ayushman Bharat Digital Mission

- The pilot project of the National Digital Health Mission was announced by PM Modi during his Independence Day speech from the Red Fort on August 15, 2020.
- The mission will enable access and exchange of longitudinal health records of citizens with their consent.
- This will ensure ease of doing business for doctors and hospitals and healthcare service providers.

The key components of the project include

- **Health ID** for every citizen that will also work as their health account, to which personal health records can be linked and viewed with the help of a mobile application,
- **Healthcare Professionals Registry (HPR)**

- **Healthcare Facilities Registries (HFR)** that will act as a repository of all healthcare providers across both modern and traditional systems of medicine

How will it work?

- In order to be a part of the ABDM, citizens will have to create a unique health ID – a randomly generated 14-digit identification number.
- The ID will give the user unique identification, authentication and will be a repository of all health records of a person.
- The ID can also be made by self-registration on the portal, downloading the ABDM Health Records app on one's mobile or at a participating health facility.
- The beneficiary will also set up a Personal Health Records (PHR) address for the issue of consent, and for future sharing of health records.

Major privacy issues involved

- **Informed Consent:** The citizen's consent is vital for all access. A beneficiary's consent is vital to ensure that information is released.
- **Data leakages issue:** Personalised data collected at multiple levels are a "sitting gold mine" for insurance companies, international researchers, and pharma companies.
- **Digital divide:** Other experts add that lack of access to technology, poverty, and lack of understanding of the language in a vast and diverse country like India are problems that need to be looked into.
- **Data Migration:** The data migration and inter-State transfer are still faced with multiple errors and shortcomings in addition to concerns of data security.

Other challenges

- **Existing digitalization is yet incomplete:** India has been unable to standardise the coverage and quality of the existing digital cards like One Nation One Ration card, PM-JAY card, Aadhaar card, etc., for accessibility of services and entitlements.
- **Lack of healthcare facilities:** The defence of data security by expressed informed consent doesn't work in a country that is plagued by the acute shortage of healthcare professionals to inform the client fully.
- **Lack of finance:** With the minuscule spending of 1.3% of the GDP on the healthcare sector, India will be unable to ensure the quality and uniform access to healthcare that it hoped to bring about.

10. Panel set up to implement Assam Accord

The Assam government on Saturday set up an eight-member sub-committee to examine and prepare a framework for the implementation of all clauses of the Assam Accord of 1985.

What is Assam Accord?

- The Assam Accord was a Memorandum of Settlement (MoS) signed the Government of India and the leaders of the Assam Movement.
- It the movement demanded the identification and deportation of all illegal foreigners – predominantly Bangladeshi immigrants.
- They feared that past and continuing large scale migration was overwhelming the native population, impacting their political rights, culture, language and land rights.
- The Assam Movement caused the estimated death of over 855 people.
- It ended with the signing of the Assam Accord in 1985.

What are the major clauses of Assam Accord?

- Clause 5: Foreigners Issue
- Clause 6: Constitutional, Legislative & Administrative safeguards
- Clause 7: Economic Development
- Clause 9 : Security of International Border
- Clause 10: Prevention of Encroachment of Government lands
- Clause 11: Restricting acquisition of immovable property by foreigners
- Clause 12: Registration of births and deaths

Which clauses are being discussed?

- A sub-committee has been tasked to examine and prepare a framework for implementation of all clauses of Assam Accord in general with special emphasis on Clause 6, Clause 7, Clause 9 and Clause 10.

11. How Election Commission decides on party symbols

Context:

The Election Commission of India (ECI) has frozen the 'Bungalow' election symbol of the Lok Janshakti Party (LJP), so that **neither of the two factions of the party will be able to use it in the coming Assembly byelections** for the Kusheshwar Asthan and Tarapur seats in Bihar.

Background:

This is not something new. Over the last few years, two other prominent cases of parties splitting, followed by a tussle over the election symbol, have been seen with regard to the Samajwadi Party (Cycle) and the AIADMK (Two leaves) in 2017.

As per the guidelines, to get a symbol allotted:

1. A party/candidate has to provide a list of three symbols from the EC's free symbols list at the time of filing nomination papers.
2. Among them, one symbol is allotted to the party/candidate on a first-come-first-serve basis.
3. When a recognised political party splits, the Election Commission takes the decision on assigning the symbol.

Powers of Election Commission:

The **Election Symbols (Reservation and Allotment) Order, 1968** empowers the EC to recognise political parties and allot symbols.

- Under Paragraph 15 of the Order, it can decide disputes among rival groups or sections of a recognised political party staking claim to its name and symbol.
- The EC is also the only authority to decide issues on a dispute or a merger. The Supreme Court upheld its validity in **Sadiq Ali and another vs. ECI in 1971**.

How many types of symbols are there?

As per the **Election Symbols (Reservation and Allotment) (Amendment) Order, 2017**, party symbols are either:

1. **Reserved:** Eight national parties and 64 state parties across the country have "reserved" symbols.
2. **Free:** The Election Commission also has a pool of nearly 200 "free" symbols that are allotted to the thousands of unrecognised regional parties that pop up before elections.

What are the Election Commission's powers in a dispute over the election symbol when a party splits?

On the question of a **split in a political party outside the legislature**, Para 15 of the Symbols Order, 1968, states: "When the Commission is satisfied that there are rival sections or groups of a recognised political party each of whom claims to be that party the Commission may decide that one such rival section or group or none of such rival sections or groups is that recognised political party and **the decision of the Commission shall be binding on all such rival sections or groups.**"

- **This applies to disputes in recognised national and state parties** (like the LJP, in this case). For splits in registered but unrecognised parties, the EC usually advises the warring factions to resolve their differences internally or to approach the court.

Please note that before 1968, the EC issued notifications and executive orders under the Conduct of Election Rules, 1961.

12. Connectivity projects in Sri Lanka

In News:

India's Foreign Secretary who is on a visit to Sri Lanka has stressed the need for the conclusion of connectivity projects in Sri Lanka.

Details:

- India has underscored the need for early conclusion of bilateral projects in Sri Lanka.
- It has sought the enhancement of connectivity by air and sea between the neighbouring countries, which are seeking to reset ties amid a strain in ties.
- The foreign secretary, referring to halted, or delayed projects awaiting a push for revival or completion has asserted:
 - With the easing of the situation in Sri Lanka, it may be time to work on connectivity initiatives like the Jaffna to Chennai flight, ferry services between Karaikal and Kankesanthurai, and Dhanushkodi and Talaimanar and the Buddhist corridor with the new international airport at Kushinagar.

Note:

During his virtual bilateral summit with Mr. Mahinda Rajapaksa in 2020, the Prime Minister of India had announced a \$15 million grant for the promotion of Buddhist ties, aimed at deepening people-to-people linkages between the two countries.

13. Ayushman Bharat Revised

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

Health Benefit Package (HBP 2.2)

- Rates of some packages have been increased by 20% to 400%.
- Rates of around 400 procedures have been revised
- One new additional medical management package related to black fungus has also been added.
- The revised packages for oncology will enhance cancer care for the beneficiaries in the country.
- **Benefit:** The rationalised HBP will further improve the uptake of schemes in private hospitals leading to reduced out-of-pocket expenditure.

National Health Authority (NHA)

- NHA has been set-up to implement PM-JAY.
- **Ministry:** Ministry of Health and Family Welfare
- It has full functional autonomy.
- NHA is governed by a Governing Board chaired by the Union Minister for Health and Family Welfare.
- It is 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.

About Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY)

- This scheme is a Centrally sponsored scheme with some Central sector components.
- PMJAY offers a sum insured of 5 lakh per family for secondary care (which doesn't involve a super specialist) as well as tertiary care. For the beneficiaries, this is a free scheme.
- It is an entitlement-based scheme that targets the beneficiaries as identified by latest Socio-Economic Caste Census (SECC) data

- The insurance cost is shared by the centre and the state mostly in the ratio of 60:40.

14. State of the World's Children Report: UNICEF

In News : The UNICEF report 'The State of the World's Children 2021; On My Mind: promoting, protecting and caring for children's mental health' details the significant impact of COVID-19 pandemic on children's mental health.

- Around 14 percent of 15 to 24-year-olds in India, or 1 in 7, reported often feeling depressed or having little interest in doing things.
- Almost 46,000 adolescents die from suicide each year, among the top five causes of death for their age group.
- More than 1.6 billion children have suffered some loss of education.
- Meanwhile, wide gaps persist between mental health needs and mental health funding. The report finds that about 2 per cent of government health budgets are allocated to mental health spending globally.

Way Forward: It calls for commitment, communication and action as part of a comprehensive approach to promote good mental health for every child, protect vulnerable children and care for children facing the greatest challenges.

- Urgent investment in child and adolescent mental health across sectors, not just in health, to support a whole-of-society approach to prevention, promotion and care.
- Integrating and scaling up evidence-based interventions across health, education and social protection sectors - including parenting programmes that promote responsive, nurturing caregiving and support parent and caregiver mental health; and ensuring schools support mental health through quality services and positive relationships.
- Breaking the silence surrounding mental illness, through addressing stigma and promoting better understanding of mental health and taking seriously the experiences of children and young people.

15. A strategy for India in a world that is adrift

This article discusses new situations prompted by the tectonic shifts in India's internal and external environment to take another look at India's path to power in a world between orders.

New global order: No Order

- **Multipolarity:** The world is today adrift. We are neither in a bipolar Cold War nor in a multipolar world, though perhaps tending towards a world of several power centres.
- **Lack of cohesion:** The lack of a coherent international response to the COVID-19 pandemic is proof of an absence of international order and of the ineffectiveness of multilateral institutions.
- **Climate ignorance:** So is the ineffective international response to climate change and other transnational threats.

Major shifts in global order

- Secular stagnation
- Retreat from globalisation
- Regionalisation of trade
- Shifting balance of power
- Rise of China and others
- Structural China-United States strategic rivalry

All above factors have shifted the geopolitical and economic centres of gravity from the Atlantic to Asia.

Major Concerns

- **Chauvinism:** Inequality between and within states has bred a narrow nationalism and parochialism.
- **Existential threats:** We are entering a new polarised information age, and face ecological crises of the Anthropocene, making climate change an existential threat.

Asia as the nucleus: With focus on China

- **Shift of focus by the US:** Over the next decade we expect Asia to remain the cockpit of geopolitical rivalries, and that the US remains the most formidable power, though its relative power is declining.
- **China at the centre:** China sees a window of opportunity but acts in a hurry, suggesting that she believes that window may close or is already closing due to push back from the West and others.

China's expansionism

- China's crowded geography constrains her both on land and at sea.

- Hence it expects her profile and power to continue expanding, particularly in our periphery.
- The result is likely continued friction, some cooperation, and quasi-adversarial relations between India and China, which others will take advantage of.
- Overall, we do not expect conventional conflict between the great powers in Asia, though other forms and levels of violence and contention in the international system will rise, with Taiwan a special case.

Opportunities in disguise for India

- The uncertainty and changing geopolitical environment clearly pose considerable challenges to Indian policy.
- However, it also throws up certain opportunities, enhancing our strategic options and diplomatic space, if we adjust policies internally and externally, particularly in the subcontinent.

How can India reap the benefits?

- **Enhancing ties with the US:** Increasing security congruence with the US could enable growing cooperation in fields significant for India's transformation: energy, trade, investment, education and health.
- **Climate cooperation:** Other areas in which India and the U.S. could increase cooperation are: climate change and energy, tech solutions for renewable energy, and on digital cooperation.
- **Neighbourhood first:** Several middle powers like Sri Lanka, Bangladesh, Indonesia in the neighbourhood are now India's natural partners.
- **Digital space:** This time of transition between orders is also when new standards and norms are being developed, particularly in the digital space. India can and must be present at the creation.
- **Maritime cooperation:** At sea, the balance is today more favourable to us than before, possibly more so than on the continent. India must bat for the creation of a Maritime Commission in IOR.

Bottlenecks in India's neighbourhood policy

- **Over securitisation of policy:** towards our neighbours has driven trade underground, criminalised our borders.
- **Conducive environment for entry of China:** This has enabled the large-scale entry of Chinese goods destroying local industry in the northeast.
- **Lack of self-strengthening:** While lessening dependence on China, and seeking external balancing, our primary effort has to concentrate on self-strengthening.

- **Lack of socio-political enterprise:** If there is one country which in terms of its size, population, economic potential, scientific and technological capabilities can match or even surpass China, it is India.

Way forward for India

(A) Bringing multipolarity in Asia.

- The way forward should be based on the core strategic principles in Non-Alignment 2.0 which are still relevant: independent judgement, developing our capacities, and creating an equitable and enabling international order for India's transformation.
- Today's situation makes India's strategic autonomy all the more essential.

(B) Making an issue-based coalition

- India must adjust to changing circumstances. We have no choice but to engage with this uncertain and more volatile world.
- One productive way to do so would be through issue-based coalitions including different actors, depending on who has an interest and capability.

(C) Reviving SAARC

- India must craft and reinvigorate regional institutions and processes in the neighbourhood, reviving the South Asian Association for Regional Cooperation (SAARC) for instance.
- India could be the primary source of both prosperity and security in the neighbourhood – the subcontinent and the Indian Ocean Region.

Conclusion

- Economic policy must match political and strategic engagement.
- Globalisation has been central to India's growth.
- A more active regional and international role for India is incompatible with a position on the margins of the global economy.
- Self-reliance in today's world and technologies can only be realised as part of the global economy.
- We should not imitate China's claims to being a civilisational state and its adoption of victimhood.
- Instead, we should affirm our own strength and historic national identity.

16. Government asks Supreme Court to set norms for quota in promotions

Background

- The top court has called it “disturbing” that the Union government did not discontinue reservation in promotion for people belonging to SC/STs.
- It referred to their numbers exceeded the upper ceiling of 15% and 7.5% respectively, of positions in some classes of central government jobs.

What was the case?

- The Union government has been pressing for reservation in promotion proportionate to the population of SCs and STs as per a 1995 judgment by the top court in the RK Sabharwal case.
- It wants it to be left open to the Centre and states to decide on promotional avenues for SCs and STs.
- It claims that the condition regarding collection of quantifiable data to show inadequacy of representation of SCs/STs is “vague”.
- Advocates representing general category have contended that the reservation cannot be for an indefinite period and that it must stop as soon as the upper ceiling has been reached.
- Further, they have emphasised that reservation in promotion should be cadre-based only after quantifiable data is collected and the creamy layer has been excluded.

Defying the need for quantifiable data

- Attorney General sought to convince the court that the roster system, based on the proportionate population of SCs/STs, has been working quite well in all government departments.
- The condition of collecting quantifiable data on inadequacy of representation of SCs/STs may not be required at all.
- He urged that there is no need to verify any further or collect quantifiable data after the roster system.

Referring to the Nagaraj Case

- Article 16(4A) of Indian Constitution allows reservations to SCs and STs in promotions, as long as the government believes that they are not adequately represented in government services.
- In 2006, a Constitution bench’s ruling in the M Nagaraj case made it incumbent upon the state to collect quantifiable data showing inadequacy of representation in public employment.

- This was to be done in addition to maintaining overall administrative efficiency.

Why such demand by the Centre?

- The Attorney General has said that it is tough for a member of the SC/ST to reach the 'Group A' category jobs.
- The time has come for the apex court to firm up and draw the basis for reservation in promotions for SC/ST candidates to fill up vacancies in top jobs.
- The Bench 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 said, efforts are on to ensure adequate representation in Groups B and C. This was not fair, it remarked.

17. Intolerance and vandalism in Afghanistan of concern: India

In News:

Recently, there were reports of vandalism in a Sikh place of worship in Kabul. Such reports of intolerance and vandalism in Afghanistan have raised concerns across the world and in India.

UN Security Council Resolution 2593:

- The international community continues to insist that the Taliban should fulfil the goals outlined in the UN Security Council Resolution 2593.
 - It articulates and guides the collective approach of the global community towards Afghanistan.
 - The resolution talks of ensuring that the Afghan territory is not used for terrorist acts, it talks of safe passage of Afghans and foreign nationals.
 - It expects the Taliban to form an inclusive government and foster freedom and diversity.
 - UNSC Resolution 2593 has asked Afghanistan to be shaped like a country that respects minorities and women.

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

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

- **Members:**
- 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.

19. Palk Bay Scheme

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.

20. Chief Justice appointment cleared by Government

In News :

Recently, the Central Government cleared the appointment of Eight new Chief Justices for High Courts along with the transfer of five Chief Justices.

Appointment procedure of HC Judges:

- **Article 217** of the Constitution: It states that the Judge of a High Court shall be appointed by the President in consultation with the Chief Justice of India (CJI), the Governor of the State.

- In the case of appointment of a Judge other than the Chief Justice, the **Chief Justice of the High Court is consulted.**
- **Consultation Process:** High Court judges are recommended by a **Collegium** comprising the **CJI and two senior-most judges.**
- The proposal, however, is initiated by the 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.

Transfer procedure of HC Judges:

- **Article 222** of the Constitution makes provision for the transfer of a Judge (including Chief Justice) from one High Court to any other High Court. The initiation of the proposal for the transfer of a Judge should be made by the Chief Justice of India whose opinion in this regard is determinative.
- Consent of a Judge for his first or subsequent transfer would not be required.
- All transfers are to be made in public interest i.e., for promoting better administration of justice throughout the country.

Evolution of Collegium System:

- It is the system of appointment and transfer of judges that has evolved through judgments of the SC, but not by an Act of Parliament or by a provision of the Constitution.
 - **First Judges Case (1981):** It declared that the “primacy” of the Chief Justice of India’s (CJI) recommendation on judicial appointments and transfers can be refused by the President and consultation doesn’t mean concurrence.
 - Thus, 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 means 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 (for example for the transfer of HC judges).

Issues involved in appointment:

- **Cumbersome Process:** There are inordinate delays in the appointment of High Court judges and it leads to the pendency of cases.

- **Lack of Transparency:** There is no objective criteria for selection and people come to know about judges only after selection. It also promotes nepotism in the judiciary. The consultations of the Collegium are also not discussed in any public platform.
- **Instances of Politicisation:** In many cases, there is indication that due to the unfavorable judgments of certain judges the political executive hinders their appointments, elevation, or transfer. This reflects poorly on the concept of independence of the judiciary.
- **Improper Representation:** Certain sections of societies have higher representation whereas many vulnerable sections have nil representation.

Attempts of Reform:

- The attempt was made to replace the Collegium with a 'National Judicial Appointments Commission (NJAC)' in 2014 through the 99th Constitutional Amendment Act, 2014. However, the Constitutional Bench of the Supreme Court declared NJAC unconstitutional in 2015, citing that it violates the Basic Structure Doctrine of the Constitution on the ground that it posed a threat to the independence of the judiciary.

Way Forward

- It is high 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 the 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. Judiciary should balance accountability as well as independence provided by the Constitution.

21. A 'Taiwan flashpoint' in the Indo-Pacific

In News

If the rising confrontation between the United States and China erupts into a clash of arms, the likely arena may well be the Taiwan Strait.

Historical background of the Taiwan issue

- The Guomindang (KMT) forces under Chiang Kai-shek lost the 1945-49 civil war to the Chinese Communist Party (CCP) in 1949. forces under Mao Zedong.
- Chiang retreated to the island of Taiwan and set up a regime that claimed authority over the whole of China and pledged to recover the mainland eventually.
- The CCP in turn pledged to reclaim what it regarded as a “renegade” province and achieve the final reunification of China.
- **Role of the U.S.:** Taiwan could not be occupied militarily by the newly established People’s Republic of China (PRC) as it became a military ally of the United States during the Korean War of 1950-53.
- This phase came to an end with the **U.S. recognising the PRC as the legitimate government** of China in 1979, ending its official relationship with Taiwan and abrogating its mutual defence treaty with the island.
- **Strategic ambiguity policy of the US:** Nevertheless, the U.S. has declared that it will “maintain the ability to come to Taiwan’s defence” while not committing itself to do so.
- This is the policy of “strategic ambiguity”.
- The PRC has pursued a typical carrot and stick policy to achieve the reunification of Taiwan with the mainland.
- It has held out the prospect, indeed preference for peaceful reunification, through promising a high degree of autonomy to the island under the “**one country two systems**”.
- The “one country two systems” formula first applied to Hong Kong after its reversion to Chinese sovereignty in 1997.

China-Taiwan economic links

- Taiwan business entities have invested heavily in mainland China and the two economies have become increasingly integrated.
- Between 1991 and 2020, the stock of Taiwanese capital invested in China reached U.S. \$188.5 billion and bilateral trade in 2019 was U.S. \$150 billion, about 15% of Taiwan’s GDP.
- By the same token, China is capable of inflicting acute economic pain on Taiwan through coercive policies if the island is seen to drift towards an independent status.

Prospects for peaceful reunification

- Taiwan has two major political parties.

- The KMT, dominated by the descendants of the mainlanders remains committed to a one-China policy.
- The **Democratic Progressive Party (DPP)**, on the other hand, is more representative of the indigenous population of the island, and favours independence.
- Faced with aggressive threats from China and lack of international support, the demand for independence has been muted.
- Ever since the DPP under Tsai Ing-wen won the presidential elections in 2016, **China has resorted to a series of hostile actions** against the island, which include economic pressures and military threats.
- One important implication of this development is that **prospects for peaceful unification have diminished**.
- Sentiment in Taiwan in favour of independent status has increased.

Role of the US

- While the U.S. does not support a declaration of independence by Taiwan, it has gradually reversed the policy of avoiding official-level engagements with the Taiwan government
- The first breach occurred during the Donald Trump presidency.
- The Joe Biden officials have continued this policy.
- The Taiwanese representative in Washington was invited to attend the presidential inauguration ceremony (Biden), again a first since 1979.
- Reports have now emerged that U.S. defence personnel have been, unannounced, training with their Taiwanese counterparts for sometime.

Implications for Quad and India

- The recent crystallisation of the Quad, of which India is a part, and the announcement of the AUKUS, with Australia being graduated to a **power with nuclear-powered submarines**, may act as a deterrent against Chinese moves on Taiwan.
- But they may equally propel China to advance the unification agenda before the balance changes against it in the Indo-Pacific.
- For these reasons, Taiwan is emerging as a potential trigger point for a clash of arms between the U.S. and China.

Conclusion

In pursuing its Indo-Pacific strategy, India would do well to keep these possible scenarios in mind.

22. Iran makes 20% more enriched uranium

In News:

Iran's nuclear chief has said that the country has produced more than 120 kg of 20% enriched uranium.

Issue:

- The nuclear deal, known as the Joint Comprehensive Plan of Action, or JCPOA, promises Iran economic incentives in exchange for limits on its nuclear programme, and is meant to prevent Iran from developing a nuclear bomb.
 - Under the terms of the nuclear deal, Iran was prohibited from enriching uranium above 3.67 per cent with the exception of its research reactor activities.
 - Enriched uranium above 90 per cent can be used in a nuclear weapon.
- The U.S. unilaterally pulled out of the deal in 2018 under then-President Donald Trump, but Britain, France, Germany, China and Russia have tried to preserve the accord.
- Under the 2015 nuclear deal with world powers, the other signatories were to provide Iran with 20% enriched uranium needed for its research reactor. But according to Iran, it was not delivered.
- The 20 per cent uranium enrichment process was launched as a part of Iran's Strategic Action Plan to counter US sanctions, which was approved by the Iranian parliament in December 2020.

23. India invited to become full-time IEA member

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.

24. India to attend G20 virtual meeting on Afghanistan

In News : Indian Prime Minister will attend an extraordinary virtual meeting of G20 leaders on Afghanistan to be held on October 12.

- The G20 meeting is likely to deliberate on both political as well as humanitarian issues regarding the country.

G20

- The G20 is the international forum that brings together the world's major economies. Its members account for more than 80% of world GDP, 75% of global trade and 60% of the population of the planet.

- The G20 comprises **19 countries and the European Union**. The 19 countries are Argentina, Australia, Brazil, Canada, China, Germany, France, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom and the United States
- The forum has met every year since 1999 and includes, since 2008, a yearly Summit, with the participation of the respective Heads of State and Government.
- Italy is the current chair of G20.

25. SC on National Green Tribunal (NGT)

In News : The Supreme Court has declared the National Green Tribunal's (NGT) position as a "unique" forum endowed with suo motu (action taken by a court of its own accord) powers to take up environmental issues across the country.

Key takeaways from SC's judgement

- 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, even in the absence of an application, can self-ignite action either towards Improvement or towards prevention of harm.
- 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 (improvement) or remedial in nature.
- NGT is a complimentary, competent, specialised forum to deal with all environmental multidisciplinary issues both as original and also as an appellate authority.

NGT

- It is a statutory body established in 2010, as per the National Green Tribunal Act.
- It is a specialised judicial body equipped with expertise solely for the purpose of adjudicating environmental cases in the country.
- The chairperson of the NGT is a retired judge of the Supreme Court
- It shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908 but shall be guided by principles of natural justice.
- Tribunal's orders are binding and it has power to grant relief in the form of compensation and damages to affected persons.

26. G20 Extraordinary Summit on Afghanistan

In News: India participated virtually in the G20 Extraordinary Summit on Afghanistan

- Convened by Italy (holds the G20 Presidency)
- Issues: related to the humanitarian situation; concerns relating to terrorism; and human rights in Afghanistan.

India's Views on Afghanistan

- Over the last two decades, India has contributed to promoting socio-economic development and capacity building of youth and women in Afghanistan (over 500 development projects)
- Emphasized the need for the international community to ensure that Afghanistan has immediate and unhindered access to humanitarian assistance.
- There's a need to enhance our joint fight against the nexus of radicalization, terrorism and the smuggling of drugs and arms in the region.
- Conveyed support for the important role of the United Nations in Afghanistan and called for renewed support of the G20 for the message contained in UN Security Council Resolution 2593 on Afghanistan.

G20

- The G20 is the international forum that brings together the world's major economies.
- Its members account for more than 80% of world GDP, 75% of global trade and 60% of the population of the planet.
- The G20 comprises 19 countries and the European Union. The 19 countries are Argentina, Australia, Brazil, Canada, China, Germany, France, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom and the United States
- The forum has met every year since 1999 and includes, since 2008, a yearly Summit, with the participation of the respective Heads of State and Government.

27. Swachh Bharat Mission (Urban)

In News: Cabinet approved the continuation of Swachh Bharat Mission (Urban) till 2025-26, with focus on

- Sustainability of Open Defecation Free (ODF) outcomes,
- Achieving scientific processing of Solid Waste in all cities, and
- Managing Wastewater in cities with less than 1 lakh population in Census 2011 [cities not covered under (AMRUT)].

Key Components

Sustainable Sanitation:

1. Ensuring complete access to sanitation facilities to serve additional population migrating from rural to urban areas in search of employment and better opportunities over the next 5 years.
2. Complete liquid waste management in cities in less than 1 lakh population – ensure that systems and processes are set up in every city so that all wastewater is safely contained, collected, transported and treated and no wastewater pollutes our water bodies.

Sustainable Solid Waste Management:

1. 100 percent source segregation of waste along with functional Material Recovery Facilities (MRFs) in every city, with a focus on phasing out single use plastic
2. Setting up of construction & demolition (C&D) waste processing facilities and deployment of mechanical sweepers in National Clean Air Programme (NCAP) cities and in cities with more than 5 lakh population
3. Remediation of all legacy dumpsites, so that 14,000 acres of locked up land lying under 15 crore tonnes of legacy waste are freed up.

Objectives of SBM(U)

- Eradication of open defecation in all statutory towns
- 100% scientific management of municipal solid waste in all statutory towns
- Effecting behaviour change through Jan Andolan

28. Pandora Papers

Pandora Papers

- The Pandora Papers is a leak of almost 12 million documents and files that reveals hidden wealth, tax avoidance and, in some cases, money laundering by some of the world's rich and powerful.

- The data was obtained by the **International Consortium of Investigative Journalists** in Washington DC, which has been working with more than 140 media organisations and more than 600 journalists from 117 countries on its biggest ever global investigation.
- The ICIJ has also said that the “data trove covers more than 330 politicians and 130 Forbes billionaires, as well as celebrities, drug dealers, royal family members and leaders of religious groups around the world”.

Is this the first time that such financial papers have been leaked?

- Since at least 2008, files indicating the manipulations by the rich have been stolen from financial institutions.
- In 2008, a former employee of the **LGT Bank of Liechtenstein** offered information to tax authorities.
- Again in 2008, Hervé Falciani obtained **confidential data on HSBC bank accounts** from remote servers and gave the data to then French Finance Minister Christine Lagarde, who then passed it on to the various governments, including India.
- In 2017, the **Paradise Papers** were leaked out mostly from the more than 100-year-old offshore law firm, Appleby, which operates globally.
- In 2016, the **Panama Papers** were obtained by hacking the server of the Panamanian financial firm, Mossack Fonseca.
- The leaked documents from Luxembourg, the “**Luxembourg Leaks**”, appeared in 2014.

The modus operandi

- The leaked papers now and even earlier have exposed the international financial architecture and illicit financial flows.
- For instance, Panama Papers highlighted the template used in other tax havens. The Pandora Papers once again confirm this pattern.
- Tax havens enable the rich to hide the true ownership of assets by using: trusts, shell companies and the **process of ‘layering’**.
- The process of layering involves moving funds from one shell-company in one tax haven to another in another tax haven and liquidating the previous company. This way, money is moved through several tax havens to the ultimate destination.
- Since the **trail is erased at each step**, it becomes difficult for authorities to track the flow of funds.
- **Financial firms offer their services** to work this out for the rich. They provide ready-made shell companies with directors, create trusts and ‘layer’ the movement of funds. Only the moneyed can afford these services.

- It appears that most of the **rich in the world use such manipulations** to lower their tax liability even if their income is legally earned. Even citizens of countries with low tax rates use tax havens.

Implications

- **Rise of Tax Havens:** Over the three decades, tax havens have enabled capital to become highly mobile, forcing nations to lower tax rates to attract capital. This has led to the 'race to the bottom',
- **Impairs Welfare Provision of Government:** Layering of money through tax havens results in a shortage of resources with governments to provide public goods, etc., in turn adversely impacting the poor.
- **Legally correct but morally wrong:** Strictly speaking, not all the activity being exposed by the Pandora Papers may be illegal, however, it is morally wrong for the rich to evade taxes which could have otherwise the poor people.
- **Complex Legal Process:** The authorities will have to prove if the law of the land has been violated in each of these revelations. Each country will have to conduct its investigations and prove what part of the activity broke any of their laws.
 - In the United Kingdom, the laws regarding financial dealings are very favourable to the rich and their manipulations.
- **Misplaced Focus on Unorganised Sector:** Indian Government's focus on the unorganised sector as the source of black income generation is also misplaced since data indicate that it is the organised sector that has been the real culprit and also spirits out a part of its black incomes through Tax Havens & layering.

Conclusion

- An interesting recent development (October 8) has been the agreement among almost 140 countries to levy a 15% minimum tax rate on corporates. Though it is a long shot, this may dent the international financial architecture.
- Other steps needed to tackle the curse of illicit financial flows are ending banking secrecy and a Tobin tax on transactions.

29. Rising Natural Gas Prices

In News : The is supposed to be an off season. Winter is yet to set in. But natural gas prices soared over the past few months, especially in Europe. The price of natural gas in Europe is now six times higher than what it was last year. Across the continent, natural gas inventories are falling.

What's driving up the prices?

1. Supply Constraints

- Global energy demand fell in 2020 when economies slipped into COVID-induced lockdowns.
- When growth returned this year, especially to Asian economies, demand shot up and energy producers struggled to meet the growing demand, pushing up prices.
- Even in the **U.S., the world's largest natural gas producer**, prices rose from \$1.7 per million British thermal units on March 31 to \$6.3 per mBtu on October 5.
- Europe, which is heavily dependent on imports to meet its energy demand, was particularly hit hard.
- As part of Europe's shift towards cleaner energy, many countries had moved away from coal to gas to produce electricity. This increased **Europe's reliance on gas**.
- On the other side, the Europe's natural gas production has shrunk over the years, as many countries **shut down production fields over environmental concerns**.
- If Europe's natural gas production (excluding Russia) was about 300 billion cubic metres in 2005, it fell to less than 200 bcm in 2021. Europe's main producer of natural gas, has seen its production shrink from 117.6 bcm in 2015 to 105.3 bcm in 2021. This has left **Europe largely dependent on Russia**.

2. Energy Geopolitics

- As prices shot up amid growing worldwide demand and falling production in Europe, **supplies from Russia via a pipeline** that passes through Ukraine and Poland also reduced, which made the situation worse.
- Russia has built another gas pipeline, **Nord Stream 2**, which will take Russian gas directly to Germany bypassing Ukraine and Poland (who are critical of Putin). But **supplies to Europe through Nord Stream 2 are yet to start** as the pipeline is awaiting approval from European authorities.
 - US & several countries in Europe remain critical of Nord Stream-2 pipeline, because they believe that the pipeline will enhance Russia's leverage over Europe and would also allow Russia to economically punish Ukraine and Poland.
- In the past when Europe's energy demand shot up, Russia had stepped up supplies. However, Russian exports to Europe this year were lower than they were in 2019.

- This has fuelled speculation that Mr. Putin is using the energy crunch in Europe to get approval from the EU for the Nord Stream 2 pipeline. Russia has dismissed such criticism, saying Russia has no role in the energy crunch.

What lies ahead?

- The situation has calmed after Russian President Vladimir Putin assured Europe of increasing the supplies.
- But Mr. Putin didn't say how Russia was going to increase its supplies – through the existing pipeline or Nord Stream 2?
- It is to be seen if additional supplies would be tied to a quick approval for the Nord Stream- 2 pipeline.
- Furthermore, the Russian domestic gas market also remains tight. **Inventories are running low**, and winter is coming, which would shoot up demand constraining Russia's export capacity.
- And demand is rising not only in Europe and the Americas, but also in Asia. **Coal shortages in India** and China could drive up prices of natural gas further.

30. China-Taiwan Rift

In News : Democratically ruled Taiwan has complained of stepped-up military and political pressure from Beijing to force it to accept Chinese rule.

- Over the last weekend, Chinese President Xi Jinping reiterated a vow to reunify Taiwan.
- This was followed by People's Liberation Army Daily's official newspaper in a brief report on its Weibo microblogging account, saying China's military had carried out beach landing and assault drills in the province directly across the sea from Taiwan, though it did not link these exercises to current tensions with Taipei.
- According to reports China's air force has also carried out a series of aerial intrusions into Taiwan's Air Defence Identification Zone recently with a record 38 aircraft on October 1, when China marked its National Day, followed by 39 on October 2, 16 on October 3 and 56 on October 4.
- While Taiwan's Defence Minister described the current tensions between the two nations as the worst in 40 years, Taiwanese President has said that her country will not be forced to bow to China.
- Also, Taiwan is entirely dependent on the US for its defence against possible Chinese aggression – and that is why every spike in military tensions between China and Taiwan injects more hostility in the already strained relationship between Washington and Beijing.

Background

- Taiwan, officially known as the Republic of China (ROC) (earlier known as Formosa), is an island off the southern coast of China that has been governed independently from mainland China since 1949.
- The People's Republic of China (PRC) views the island as a province, while in Taiwan—a territory with its own democratically elected government that is home to twenty-three million people—political leaders have differing views on the island's status and relations with the mainland.
- The PRC asserts that there is only “one China” and that Taiwan is an inalienable part of it. Beijing says Taiwan is bound by an understanding reached in 1992 between representatives of the Chinese Communist Party (CCP) and the Kuomintang (KMT) political party then ruling Taiwan.
- Referred to as the 1992 Consensus, it states that there is only “one China” but allows for differing interpretations, by which both Beijing and Taipei agree that Taiwan belongs to China, while the two still disagree on which entity is China's legitimate governing body.
- The tacit agreement underlying the 1992 Consensus is that Taiwan will not seek independence.
- In Taiwan, the Chinese government's objective has long been what it calls “peaceful reunification” – “reunification” even though Taiwan has never been under the jurisdiction or control of the People's Republic of China or the Chinese Communist Party.
- To achieve that goal, Beijing has for years tried to simultaneously coax and coerce Taiwan's adherence with both the promise of economic benefits and military threats.

Challenge for the US

- President Joe Biden has so far walked a thin line between pledging support for Taiwan, and keeping the lid on tensions with Beijing.
- After speaking with Xi earlier this month, he said they had agreed to abide by the “Taiwan Agreement”, under which US support for the “One China Policy” is premised on Beijing not invading Taiwan.
- The AUKUS pact among the US, UK, and Australia, under which Australia will be supplied with nuclear submarines, has imparted a new dimension to the security dynamics of the Indo-Pacific. Taiwan has welcomed the pact, while China has denounced it as seriously undermining regional peace.

Implications for India

- India should review its One China Policy – it should use the Tibet card, and develop more robust relations with Taiwan to send a message to Beijing.

- India and Taiwan currently maintain “trade and cultural exchange” offices in each other’s capitals. In May 2020, the swearing-in of Tsai was attended virtually by BJP MPs Meenakshi Lekhi (now MoS External Affairs) and Rahul Kaswan. In 2016, New Delhi had dropped plans to send two representatives for Tsai’s first inaugural at the last minute.
- Talks with Taipei are ongoing to bring a \$7.5-billion semiconductor or chip manufacturing plant to India. Chips are used in a range of devices from computers to 5G smartphones, to electric cars and medical equipment (the need to build a “safe supply chain for semiconductors”).

31. 2021 Global TB report: WHO

In News : According to the 2021 Global TB report released recently by the World Health Organization (WHO), for the first time in over a decade, Tuberculosis (TB) deaths have increased globally.

- WHO modelling projections suggest that the number of people developing TB and dying from the disease could be much higher in 2021 and 2022.

Key findings of the report

- **Reduced notifications:** India (41%) was among the top countries which contributed most to the global reduction in **TB notifications** between 2019 and 2020 which is not a good sign.
 - India, along with Indonesia (14%), the Philippines (12%), China (8%) and 12 other countries, accounted for 93% of the total global drop in notifications.
- **Increase in cases:** The WHO estimated that some 4.1 million people currently suffer from TB but had not been diagnosed with it or had not officially reported to the national authorities. This figure is up from 2.9 million in 2019.
- **Reduced provision:** There was also a reduction in the provision of TB preventive treatment. Some 2.8 million people accessed this in 2020, a 21% reduction since 2019.
- **Drug-resistant TB:** The number of people treated for drug-resistant TB fell by 15%.
- **Increased deaths:** In 2020, more people died of TB.
- **Reasons for increase in deaths:**
 - Reallocation of Human, financial and other resources from tackling TB to COVID-19, limiting the availability of essential services.
 - People struggled to seek care during lockdowns.

Tuberculosis (TB)

- TB is caused by **bacteria** (*Mycobacterium tuberculosis*) that most often affect the lungs.
- **Transmission:** TB is spread from person to person through the air. When people with TB cough, sneeze or spit, they propel the TB germs into the air.
- **Symptoms:** Cough with sputum and blood at times, chest pains, weakness, weight loss, fever and night sweats.
- TB is a treatable and curable disease.
- **Multidrug-resistant tuberculosis (MDR-TB)** is a form of TB caused by bacteria that do not respond to **isoniazid** and **rifampicin**, the 2 most powerful, first-line anti-TB drugs. It is treatable and curable by using second-line drugs.
- **Extensively drug-resistant TB (XDR-TB)** is a more serious form of MDR-TB caused by bacteria that do not respond to the most effective second-line anti-TB drugs, often leaving patients without any further treatment options.

Initiatives by India

- **Eliminating TB by 2025:** India is committed to eliminating tuberculosis by 2025, five years ahead of the global target of 2030.
- **National Tuberculosis Elimination Programme:** To align with the ambitious goal, the programme has been renamed from the Revised National Tuberculosis Control Programme (RNTCP) to National Tuberculosis Elimination Programme (NTEP).

32. New Defence Public Sector Undertakings (DPSU) launched

In News : Indian Prime Minister recently launched seven new Defence Public Sector Undertakings (DPSU), incorporated after the dissolution of the Ordnance Factory Board (OFB).

- Under the initiative of Atmanirbhar Bharat, the goal is to make India a military power globally on its own strength and also develop a modern indigenous defence industry.

Key takeaways

- The Ministry of Defence (MoD) has converted all pending orders with the 41 factories of the OFB into deemed contracts worth over Rs. 65,000 crore for the new companies.
- The over 70,000 employees of the OFB (Group A, B & C) units have been transferred to the new DPSUs on terms of foreign service without any deputation allowance initially for a period of two years.

- The new structure will help overcome various shortcomings in the existing system of OFB and encourage companies to become competitive and explore new opportunities in the market including exports.
- The seven new companies are 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.

33. Bhutan-China Border Agreement

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.

Conclusion

- 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.

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

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 undernutrition**, 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 **undernutrition and mortality are usually closely related**, as child undernutrition 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.

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36. International Maritime Boundary Line (IMBL)

The Tamil Nadu police have issued an alert on the possibility of an attack on fishermen crossing the International Maritime Boundary Line (IMBL) for fishing in Sri Lankan waters.

About International Maritime Boundary Line (IMBL)

- A maritime boundary is a conceptual division of the Earth's water surface areas using physiographic or geopolitical criteria.
- As such, it usually bounds areas of exclusive national rights over mineral and biological resources, encompassing maritime features, limits and zones.
- Generally, a maritime boundary is delineated at a particular distance from a jurisdiction's coastline.
- Although in some countries the term maritime boundary represents borders of a maritime nation that are recognized by the **United Nations Convention on the Law of the Sea**.
- The terminology does not encompass lake or river boundaries, which are considered within the context of land boundaries.

The delineation of maritime boundaries has strategic, economic, and environmental implications.

Classification

Maritime spaces can be divided into the following groups based on their legal status:

1. **Under the sovereignty and authority (exercising power) of a coastal State:** internal waters, territorial sea, and archipelagic waters,
2. **With mixed legal regime, which fall under both the jurisdiction of the coastal State and under the international law:** contiguous zone, the continental shelf and the exclusive economic zone, and
3. **That can be used by all States (including land-locked ones) on an equal basis:** high seas.

Zones

The zones of maritime boundaries are expressed in concentric limits surrounding coastal and feature baselines.

1. **Inland waters**—the zone inside the baseline.
2. **Territorial sea**—the zone extending 12 nm. from the baseline
3. **Contiguous zone**—the area extending 24 nm. from the baseline

4. **Exclusive Economic Zone**—the area extending 200 nm from the baseline except when the space between two countries is less than 400 nm

37. Anticipatory bail

Context:

The Supreme Court has 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.

The concept of anticipatory bail:

- The provision of anticipatory bail under **Section 438** was introduced when CrPC was amended in 1973.
- **As opposed to ordinary bail**, which is granted to a person who is under arrest, in anticipatory bail, a person is directed to be released on bail even before arrest made.
- **Time limit:** The Supreme Court (SC) in **Sushila Aggarwal v. State of NCT of Delhi (2020)** case delivered a significant verdict, ruling that no time limit can be set while granting anticipatory Bail and it can continue even until the end of the trial.
- It is **issued only by the Sessions Court and High Court.**

Significance:

- The reason for enactment of Section 438 in the Code was parliamentary acceptance of the crucial underpinning of **personal liberty in a free and democratic country.**
- Parliament wished to foster **respect for personal liberty and accord primacy to a fundamental tenet of criminal jurisprudence**, that everyone is presumed to be innocent till he or she is found guilty.

Recent observations made by the Supreme Court on its usage?

1. HCs and SC are given powers to grant anticipatory bail to the accused because of the premium that the Constitution places on **the right to liberty guaranteed under Article 21.**
2. The grant or rejection of an application under CrPC has a direct bearing on **the right to life and liberty of an individual.** Therefore, the provision needs to

be read liberally, and considering its beneficial nature. The courts must not read in restrictions that the legislature have not explicitly provided for.

3. In doing so, the court may also exercise its powers under **Article 142 of the Constitution** to pass such an order.

Need for such protection:

An accused, besides being an accused, may also be **the primary caregiver or sole breadwinner of the family**. His arrest may leave his loved ones in a state of starvation and neglect.

- In the **1980 Gurbaksh Singh Sibbia vs State of Punjab case**, a five-judge Supreme Court bench led by then Chief Justice Y V Chandrachud ruled that **438 (1) is to be interpreted in the light of Article 21 of the Constitution (protection of life and personal liberty)**.

38. Like Minded Developing Countries (LMDC)

In News : Recently, the Union Minister for Environment Forest and Climate Change virtually participated in the Like Minded Developing Countries (LMDC) Ministerial meeting titled **'Preparations for COP 26 on Climate Change - Expectations and Challenges'**.

- This meeting has been hosted by Bolivia ahead of the 26th climate change conference to be held in Glasgow.
- A ministerial statement was endorsed by the LMDC Ministers during the meeting, expressing their full support for the COP26 Presidency.

Like-Minded Developing Countries(LMDC) group

- LMDC comprises around 25 developing countries from Asia and other regions.
- It organises themselves as a block of negotiators in international organizations such as the United Nations.
- They represent more than 50% of the world's population.
- **Member countries:** Algeria, Bangladesh, Belarus, Bhutan, China, Cuba, Egypt, India, Indonesia, Iran, Malaysia, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Sudan, Syria, Vietnam, and Zimbabwe.

26th Conference of Parties (COP26)

- The COP26 is the 26th United Nations Climate Change conference.

- It is scheduled to be held in Glasgow, Scotland, between 31 October and 12 November 2021, under the presidency of the United Kingdom.
- The conference comes months after the 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.
- 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."

Four Goals of COP26

- Secure global net-zero by mid-century and keep 1.5 degrees within reach.
- Adapt to protect communities and natural habitats.
- Mobilise finance.
- Work together to deliver.

39. Rising Fuel Prices

In News : The price of crude oil is nearing its highest level since 2018, as the price of Brent Crude breached the \$85 per barrel mark by Oct 15th (\$42.5 per barrel a year ago). This is happening as the price of natural gas and coal are also hitting record highs, intensifying the energy shortage.

Why are fuel prices rising?

- **Economic Recovery:** Global crude oil prices are rising on the back of a sharp increase in global demand as the world economy recovers from the pandemic.
- **Supply not increasing commensurately:** In its latest round of meetings, the OPEC+ group of oil producing countries reaffirmed that they would increase total crude oil supply by only 400,000 barrels per day in November despite a sharp increase in prices.
 - OPEC+ had agreed to sharp cuts in supply in 2020 in response to Covid-19 global travel restrictions in 2020 but the organisation has been slow to boost production as demand has recovered.
- **Rise in Prices of other energy resources:**

•

- Supply side issues in the US including disruptions caused by hurricane Ida and lower than expected natural gas supplies from Russia amid increasing demand in Europe have raised the prices of natural gas.
- International coal prices have also reached all-time highs as China faces a coal shortage that has led to factories across China facing power outages.
- A faster than expected recovery in global demand has pushed the price of Indonesian coal up from about \$60 per tonne in March to about \$200 per tonne in October.
- Naturally, when prices of these energy resources increase, it will have impact on prices of crude oil as well.

What is the impact on India?

- High crude oil prices have contributed to the regular increase in **prices of petrol and diesel** across the country in 2021.
- The price of petrol in Delhi is Rs 105.84 per litre in Oct 15th, while the price of diesel is at Rs 94.6 per litre.
- High fuel prices will feed into increased cost of goods & services causing **inflation in the economy**.
- **The demand for diesel in India** was expected to go up in the next few months with the upcoming festive season set to accelerate the economic recovery and push up diesel consumption. Diesel accounts for about 38% of petroleum product consumption in India and is a key fuel used in industry and agriculture.
- Rising Fuel prices can dampen the festive consumption (travel & increased cost of goods) & **hurt economic recovery prospects**.
- The increase in gas prices has put upward pressure on the price of both Compressed Natural Gas (CNG) used as a transport fuel and Piped Natural Gas (PNG) used as a cooking fuel.
- High international prices of coal have added to a **coal shortage** at India's thermal power plants

Way Forward

India and other oil importing nations have called on OPEC+ to boost oil supply faster, arguing that elevated crude oil prices could undermine the recovery of the global economy.

40. Carbon Markets Conundrum at COP26

In News : The success of COP26 at Glasgow, that will take place from 31 October to 12 November 2021, depends to a great extent on the conclusion of carbon markets discussions

- Article 6 of the Paris Agreement introduces provisions for using international carbon markets to facilitate fulfilment of Nationally Determined Contributions (NDCs) by countries.

Why Carbon Markets in significant for India?

- Developing countries, particularly India, China and Brazil, gained significantly from the carbon market under the **Clean Development Mechanism (CDM) of the Kyoto Protocol**.
- India registered 1,703 projects under the CDM which is the **second highest** in the world. Total carbon credits known as Certified Emission Reductions (CERs) issued for these projects are around 255 million amounting to **U.S.\$2.55 billion**.
- Therefore, logically, India has a lot to gain from a thriving carbon market. However, with the ratification of the Paris Agreement, the rules of the game have changed.
- Unlike the Kyoto Protocol, now **even developing countries are required to have mitigation targets**.
- Developing countries are faced with a **dilemma of either selling** their carbon credits in return for lucrative foreign investment flows or use these credits to achieve their own mitigation targets.
- This has made Article 6 a highly sensitive issue that requires careful balancing of interests and expectations.
- While over 50% of the countries have communicated their intention of using market mechanisms to achieve NDC targets, India is not one of them as it aims to rely on domestic mitigation efforts to meet its NDC goals.
- It is the developed countries that would rely more on market mechanisms for achieving their climate targets as they would be comparatively low-cost options.

What are the critical issues with Article 6 of Paris Agreement?

The three critical issues that would be hotly debated in Article 6 negotiating rooms are Clean Development Mechanism (CDM) Transition, Accounting rules and Share of Proceeds to the Adaptation Fund. Let us examine them one by one.

CDM transition:

- The Clean Development Mechanism (CDM) projects have gone through due diligence and **credits have been issued under UNFCCC oversight**. Therefore, the Article 6 mechanism should honour the previous decisions
- However, some countries have cast doubts on the **environmental integrity of these credits** and while there is greater acceptance for transition of projects/activities, the same is not the case for transition of credits.
- If the decision regarding transition of CDM is not favourable, it could lead to a loss of billions of dollars worth of potential revenue to India alone. This can result in the formation of the new supervisory body under the Paris Agreement that can re-examine the validity and rigour of such credits.

Accounting rules:

- Article 6.4 mechanism is meant to incentivise the private sector and public entities to undertake mitigation activities for sustainable development.
- Under this mechanism, a country can purchase emission reductions from public and private entities of the host country and use it to meet its NDC targets.
- However, this **does not automatically imply that emission reductions transferred from a host country** be adjusted against its NDC targets.
- It must be appreciated that **these reductions represent additional efforts of the private sector or public entities** to mitigate greenhouse gas emissions, and in fact raise global climate ambition.
- This is also in line with the provision of Article 6.5 of the Paris Agreement wherein the host country is not required to undertake corresponding adjustment for the projects outside its NDC.
- Therefore, such efforts will be additional to what have been committed in the NDC.
- Robust accounting will ensure that there will be no double-counting of emission reductions.

Share of Proceeds (SOP) to the Adaptation Fund:

- For developing countries, adaptation is a necessity.
- However, it remains severely underfunded compared to financing for mitigation activities.
- While developing countries emphasise that the SOP must be uniformly applied to Articles 6.2 and 6.4 to fund adaptation, developed countries want to restrict its application to Article 6.4.
- This would disincentivise the Article 6.4 mechanism and limit voluntary cooperation to the cooperative approaches under Article 6.2 favoured by developed countries.

Conclusion

- In a way, carbon markets allow developed countries to keep emitting greenhouse gases while developing countries benefit from the revenue generated from the sale of their carbon credits.
- Central to the discussions on Article 6 is equitable sharing of carbon and developmental space. Climate justice demands that developing countries get access to their fair share of global carbon space.
- As developing countries are nudged to take greater mitigation responsibilities, a facilitative carbon market mechanism that respects the principles enshrined in UNFCCC would greatly help accelerate their transition to low carbon development pathway.

GS 3 : Economy, Science and Technology, Environment

1. Hidden debt rising for partners of China's BRI plan

In News :

- Study on the **increasing debt among countries borrowing from China.**

Details:

- A new study by AidData, a development research lab at the College of William & Mary in the U.S., has found that the **Chinese debt burdens among many countries under China's Belt and Road Initiative (BRI) are substantially larger than previously estimated.**
- Notably, **most of this debt remains hidden** from the country's accounts as an increasing number of the project deals are being struck not directly between governments but structured through often opaque arrangements with a range of financing institutions. Hence they remain systematically under-reported to the World Bank's Debtor Reporting System (DRS).
 - Currently, nearly 70% of China's overseas lending is now directed to state-owned companies, state-owned banks, special purpose vehicles, joint ventures, and private sector institutions. This leads to what experts have termed as **opaque lending practices of China.**

The study estimates that the average government is under-reporting its actual and potential repayment obligations to China by an amount that is equivalent to 5.8% of

its GDP and collectively, these **under-reported debts are worth approximately \$385 billion.**

42 countries now have debt exposure to China in excess of 10% of GDP.

- India ranked 23rd in the list of top recipients of Chinese loans from 2000 to 2017, receiving \$8.86 billion.

Debt trap diplomacy:

- There has been a **surge in lending from Chinese institutions over the past two decades.**
- There are reports about China using **relatively high valued interest loans with short maturity lengths to fund mostly non-viable projects.** This invariably impacts the ability of the borrowing nations to repay the debt back to China. This sort of predatory lending has resulted in **debt distress** in many borrowing countries.
- Chinese institutions use collateralisation to mitigate repayment risk and have been able to **take over strategic assets** in some countries. Also in some cases, the borrowing countries have been forced into accepting **economic concessions in exchange for debt relief.**
 - Sri Lanka has had to hand over the Hambantota port to China over a 99-year lease due to the inability to repay back the Chinese loans.
 - China has also secured a large swathe of land in the strategic Pamir mountains from Tajikistan in exchange for debt forgiveness.

China has thus been able to use debt to establish a dominant position in the international development finance market.

The financial and economic dominance may also be converted into **political leverage** which can be used to **influence domestic and foreign policy decisions** of indebted countries.

Factors contributing to debt trap:

- **Lack of adequate financing options** for infrastructure projects for middle and low-income countries
- **Predatory lending practices of China**
- **Scandals and corruption**
 - A high proportion of the BRI infrastructure project portfolio has encountered major implementation problems, such as corruption scandals or labour violations.

Implications for India:

- Debt distress and coercive tactics from China may help China increase its political influence among India's neighbouring countries like Sri Lanka,

Bangladesh, Myanmar and Nepal. This could **strain the bilateral relations** with such countries.

- Also, the commercial assets being taken over by China in exchange for debt relief could be used by China for military purposes. This poses serious **security risks** for India.

Way forward:

- The international community must provide alternatives to Chinese infrastructure financing.
- Initiatives like the **Asia-Africa Growth corridor (India-Japan collaboration), Global Infrastructure facility (G-20) and Build Back Better World Partnership (G-7)** should be expanded to meet the infrastructural needs of the developing countries.

2. India, Australia to conclude free trade pact by end 2022

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

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:
 1. Asia Pacific Trade Agreement (APTA) with Bangladesh, China, India, Lao PDR, Republic of Korea, and Sri Lanka
 2. Global System of Trade Preferences (GSTP)
 3. 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.

3. India's Current Account Balance sees a spike

India's current account balance saw a far lower surplus of \$6.5 billion (0.9% of GDP) in the first quarter compared with a surplus of \$19.1 billion (3.7% of GDP) a year earlier.

What is External Sector?

- The external sector is the portion of a country's economy that interacts with the economies of other countries.
- In the goods market, the external sector involves exports and imports.
- In the financial market it involves capital flows.

Various terminologies related:

[A] Balance of Payment (BoP)

- BoP is the difference between all money flowing into the country in a particular period of time (e.g., a quarter or a year) and the outflow of money to the rest of the world.
- These financial transactions are made by individuals, firms and government bodies to compare receipts and payments arising out of trade of goods and services.

- It consists of two components: the current account and the capital account.
- The current account reflects a country's net income, while the capital account reflects the net change in ownership of national assets.

(1) Current Account

- Current account of BoP consists of all transactions relating to goods, services and income, it is functionally classified into merchandise and
- Current account deficit is the situation where payments on the country are more than the payments into the country.
- In current account surplus, there is a net inward payment into the country on the current.

(2) Capital Account

- The capital account records the net flow of investment transaction into an economy.
- Investments (FDI and FII) and borrowings (ECB) are part of the capital account.

[B] Balance of Trade

- Trade "balance" of a country shows the difference between what it earns from its exports and what it pays for its imports.
- If this number is in negative – that is, the total value of goods imported by a country is more than the total value of goods exported by that country – then it is referred to as a "trade deficit".
- If India has a trade deficit with China then China would necessarily have a "trade surplus" with India.

4. GST collections hit 5-month high

India's gross Goods and Services Tax (GST) revenues crossed ₹1.17 lakh crore in September, hitting a five-month high.

What is the news?

- September's revenues were 23% higher than a year ago and 27.3% more than collections in the pre-pandemic month of September 2019.
- Revenues from import of goods were 30% higher while indirect tax collected on domestic transactions, including the import of services, were 20% higher in September, compared to the same month in 2020.

- Among the major States, GST revenues grew 29% in Karnataka, 28% in Gujarat, followed by 22% in Maharashtra and 21% each in Tamil Nadu and Andhra Pradesh.
- Telangana recorded a 25% surge in revenues, while Odisha saw a sharper 40% rise.

Significance

- This clearly indicates that the economy is recovering at a fast pace.
- Coupled with economic growth, anti-evasion activities, especially action against fake billers have also been contributing to the enhanced GST collections.
- It is expected that the positive trend in the revenues will continue and the second half of the year will post higher revenues.

Issues underlying

- Though GST revenues are picking up pace after the impact of the Covid-19 pandemic, revenue buoyancy under GST is being seen as a concern.
- This is especially after the legally mandated compensation to states for revenue shortfall from the GST implementation comes to an end in June 2022.

5. What is Computer Tomography?

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

About 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.

6. Ethanol production

In News Almost two million tonnes (MT) of sugar were diverted for ethanol production during the last sugar season (October 2020 to September 2021).

About Ethanol and its production

- Ethanol can be produced from sugarcane, maize, wheat, etc which are having high starch content.
- In India, ethanol is mainly produced from sugarcane molasses by fermentation process.
- Ethanol can be mixed with gasoline to form different blends.
- As the ethanol molecule contains oxygen, it allows the engine to more completely combust the fuel, resulting in fewer emissions and thereby reducing the occurrence of environmental pollution.

- Since ethanol is produced from plants that harness the power of the sun, ethanol is also considered as renewable fuel.

7. A tiny plant that can 'digest' low density plastic sheets

In News:

- Researchers from University of Madras and Presidency College, Chennai, have isolated an **alga that breaks down low density polyethylene**.

Background:

Plastic pollution:

- **Around 5.6 million metric tonnes of plastic waste is generated each year in India.** Worryingly, **only 60% of the plastic used in India is collected and recycled.** Hence a large proportion of Plastic waste is continuing to accumulate and leading to adverse environmental impacts.
- The usual means of disposal of plastic waste involves **incineration, land-filling** and recycling. These methods have limitations and also sometimes produce **side-effects that are hazardous to the environment.**
- Hence there has been growing **emphasis on biodegradation methods** that are safe and environment friendly.

Details:

- The alga identified is **microalga Uronema africanum Borge**. This is a species of microalgae that is commonly found in Africa, Asia and Europe.
- The alga used for the study has been harvested from a lake in Chennai.
- The microalga was found to **produce enzymes, hormones, toxins such as cyanotoxins and some polysaccharides** which were able to **slowly degrade polyethylene into monomers** which will not have harmful effect in the atmosphere.
 - Low-density polyethylene is highly resistant to degradation.
- The researchers are planning to collaborate with industry to take up this technology in to a pilot scale and finally large-scale study.

Significance:

- The development gains significance given that the identified algae could be used as an agent of **biodegradation of plastic sheets and thus it offers a solution to Plastic pollution in India.**

8. Govt. notifies new rules to clear retro tax mess

Context:

- The Union government has notified **new rules under the Income Tax Act** for specifying the process to be followed by affected taxpayers to **settle the retrospective tax disputes**.
- Union Finance Minister had recently introduced the **Taxation Laws (Amendment) Bill in the Lok Sabha to nullify the retrospective tax clauses** that were introduced in 2012 and had issued draft rules to resolve the pending tax disputes.
- Affected companies like Cairn Energy had envisaged interest to settle their dispute with the Indian government.

Background:

Retrospective tax clause:

- The retrospective tax clauses were introduced in 2012 to **bring past indirect transfer of Indian assets under the ambit of taxation**.
- This provision was invoked against foreign investors such as **Vodafone and Cairn Energy**.
 - Vodafone had in 2007 purchased a 67% stake in Hutchison Whampoa.
 - Cairn Energy had undertaken a corporate reorganisation in 2006-07.
- **Large tax demands** were raised against these companies and upon their failure to pay, their assets were frozen by the Indian authorities.

Concerns:

- The retrospective tax and consequent tax demand had been **termed “tax terrorism”** by a few sections and it had become a point of **concern for potential investors**.
- This provision was thought to go **against the principle of tax certainty** and damage India’s reputation as an attractive foreign investment destination.

Steps taken by the affected companies:

- This move of the Indian government was challenged by the affected companies. Separate **international arbitration tribunal** verdicts in the Vodafone and Cairn cases have ruled against India’s retrospective tax demands.

- Cairn Energy, which was awarded \$1.2 billion by an international tribunal, filed cases in at least ten global jurisdictions, including the U.S., the U.K., Canada and Japan, to seize India's assets in lieu of the award as the government did not abide by the tribunal's decision.
- Cairn Energy has recently secured an order from a French court to freeze India's assets in Paris.

Details:

- The Income-Tax (31st Amendment) Rules, 2021, introduce a new portion pertaining to 'indirect transfer prior to May 28, 2012 of assets situated in India'.
- As per the conditions laid down under this new rules, firms disputing retrospective tax demands will have to **withdraw all legal proceedings** including arbitration, mediation efforts and **waive all rights to claim costs or attach Indian assets** and also **indemnify the government** on costs and liabilities from any action pursued by other interested parties (including shareholders) in future. They would also have to give an undertaking that such initiatives will not be reopened.

9. Toxic firecrackers

In News:

- The Supreme Court has come down heavily on the firecracker industry after revelation from the CBI enquiry pointing to **rampant violation of the SC ban on the use of toxic ingredients in firecrackers.**

Background:

Pollution caused by fire crackers:

- **Firecrackers use different metal salts to get different colours.** Barium compounds produce green light and Strontium and Lithium salts produce red light.
- The burning of firecrackers resulting in **emission of particles and gases** is a major source of **air pollution.** It gives rise to higher levels of Aluminium, Barium, Potassium, Sulphur, Iron and Strontium in the air.

- High levels of such elements in the air **affect the health of people and animals.**

Previous Supreme Court Ruling:

- Given the air and sound pollution caused by fire crackers, there were petitions filed in the judiciary calling for a total ban on firecrackers.
- However taking a balanced view the Supreme Court had ruled out a full ban on firecrackers and issued orders stipulating that **only reduced emission and green crackers be allowed**, with tight restrictions on timings when they could be burst.

Green Crackers:

- The Council of Scientific and Industrial Research, through its **National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur**, had come out with firecrackers that have lower particulate matter emission.
- These crackers are named as **Safe Water Releaser** (SWAS- Low Potassium Nitrate and Sulphur use), **Safe Thermite Cracker** (STAR- low Sulphur and Potassium Nitrate) and **Safe Minimal Aluminium** (SAFAL- Aluminium use is low).
- These have the unique property of **releasing water vapour and/or air as dust suppressant and dilutant** for gaseous emissions.

Details:

- The Supreme Court has found six major fireworks manufacturers violating orders requiring them not to use prohibited chemicals such as Barium salts and to label the firecrackers in compliance with the law.
 - The **green crackers are to be identified using unique QR codes.**
- Firecrackers were also not labelled with information on the person responsible for legal compliance, as ordered by the court.
 - The **Petroleum and Explosives Safety Organisation should certify the composition of fireworks as free from banned chemicals.**

10. IAO Hanle: A promising astronomical observatory

A new study shows that the Indian Astronomical Observatory (IAO) located in Hanle is one of the emerging sites for infrared and optical astronomy studies.

About IAO Hanle

- The IAO, located in Hanle at Mount Saraswati near Leh in Ladakh, has one of the world's highest located sites for optical, infrared and gamma-ray telescopes.
- It was established in 2001 and is operated by the Indian Institute of Astrophysics, Bangalore.
- It is currently the ninth highest optical telescope in the world, situated at an elevation of 4,500 meters.

Major telescopes at Hanle include:

1. Himalayan Chandra Telescope (An optical-infrared telescope named after India-born Nobel laureate Subrahmanyam Chandrasekhar)
2. GROWTH-India Telescope (A robotic optical telescope)
3. High Altitude Gamma Ray Telescope

Distinct factors of IAO Hanle

- IAO Hanle offers a clear view of space among all observatories globally.
- This is due to its advantages of more clear nights, minimal light pollution, background aerosol concentration, extremely dry atmospheric condition and uninterrupted monsoon.
- Hanle site is as dry as Atacama Desert in Chile and much drier than Devasthal and has around 270 clear nights in a year and is also one of the emerging sites for infrared and submillimetre optical astronomy.
- This is because water vapor absorbs electromagnetic signals and reduces their strength.

11. Govt moots easy clearance for Forest Land use

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 Forest (Conservation) Act, 1980

- The FCA is the principal legislation that regulates deforestation in the country.

- It prohibits the felling of forests for any “non-forestry” use without prior clearance by the central government.
- The clearance process includes seeking consent from local forest rights-holders and from wildlife authorities.
- The Centre is empowered to reject such requests or allow it with legally binding conditions.
- In a landmark decision in 1996, the Supreme Court had expanded the coverage of FCA to all areas that satisfied the dictionary definition of a forest; earlier, only lands specifically notified as forests were protected by the enforcement of the FCA.

What is the proposed amendment?

- The proposed amendment is part of a larger rationalizing of existing forest laws for infrastructure projects.
- The act was regressively 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.
- They are required to pay Net Present Value (NPV), Compensatory Afforestation (CA), etc. for use of such land which was originally been acquired for non-forest purposes.

Other proposals

- The Environment Ministry has proposed provisions for penal compensation to make good for the damages already done to trees in forest land.
- The document also proposes removing zoos, safaris, Forest Training infrastructures from the definition of “non-forestry” activities.
- The current definition restricts the way money collected as part of compensatory cess can be spent towards forest conservation purposes.

Previous attempts made

- Previous attempts to amend acts linked to forest laws have been controversial.
- There was a plan to amend the Indian Forest Act, 1927, that deals with the rights of forest dwellers, in an attempt to address contemporary challenges to the country’s forests.
- The draft law had been sent to key forest officers in the States for soliciting comments and objections.
- It drew flak from activists as well as tribal welfare organizations.

- The government withdrew the draft and has said that a newer updated version was on the anvil.

12. Taproots to help restore India's fading green cover

This op-ed tries to establish a fair link between forest cover and population dependency on it.

A decline in Forest Cover

- The State of the World's Forests report 2020, says that since 1990, around 420 million hectares of forest have been lost through deforestation, conversion and land degradation.
- Nearly 178 million hectares have decreased globally due to deforestation (1990-2020).
- India lost 4.69 MHA of its forests for various land uses between 1951 to 1995.

Various reasons

- Despite various international conventions and national policies in place to improve green cover, there is a decline in global forest cover.
- Dependence on forests by nearly 18% of the global human population has put immense pressure on ecosystems; in India, this has resulted in the degradation of 41% of its forests.

Why conserve forests?

- Covering nearly 30% land surface of the earth, forests around the globe provide a wide variety of ecosystem services and support countless and diverse species.
- They also stabilise the climate, sequester carbon and regulate the water regime.

Need for restoration

- Restoration in laymen's terms is bringing back the degraded or deforested landscape to its original state by various interventions to enable them to deliver all the benefits.
- Building and maintaining activities help to improve ecological functions, productivity and create resilient forests with multifarious capabilities.

- India's varied edaphic, climatic and topographic conditions are spread over 10 bio-geographical regions and four biodiversity hotspots, sheltering 8% of the world's known flora and fauna.

India's dependency on forest resources

- Out of its 21.9% population living under the poverty line, nearly 275 million people including local tribals depend on the forest for subsistence.
- The intricate link between poverty and environmental degradation was first highlighted by India at the first UN global conference on the human environment in Stockholm.
- Though India's increasing economic growth is helping to eliminate poverty, there is continued degradation and a growing scarcity of natural resources.
- Further, encroachment of nearly 1.48 MHA of forest and grazing in nearly 75% of forest area is also linked to the livelihood of local communities.
- The participation of local communities with finances for incentives and rewards is essential to redress this complex riddle.

Strategies adopted by India

- To combat this, India joined the Bonn Challenge with a pledge to restore 21 MHA of degraded and deforested land which was later revised to 26 MHA to be restored by 2030.
- The first-ever country progress report under the Bonn Challenge submitted by India by bringing 9.8 million hectares since 2011 under restoration is an achievement.
- However, continued degradation and deforestation need to be tackled effectively to achieve the remaining target of restoration by addressing various challenges.

Key challenges

- Local ecology with a research base: forest restoration and tree planting are leading strategies to fight global warming by way of carbon sequestration.
- However, planting without considering the local ecology can result in more damage.
- Similarly, planting a forest in the wrong places such as savannah grasslands could be disastrous for local biodiversity.

Best strategy: Natural Forest Restoration

- Luckily recent research has shown that naturally regenerated forests tend to have more secure carbon storage.

- Being less tech-sensitive, cost-effective and conserving more biodiversity, natural forest restoration is becoming more widely accepted.

Limitations to India

- Nearly 5.03% of Indian forests are under protection area (PA) management needing specific restoration strategies.
- The remaining areas witness a range of disturbances including grazing, encroachment, fire, and climate change impacts that need area-specific considerations.
- Further, much of the research done so far on restoration is not fully compatible with India's diverse ecological habitats hence warranting due consideration of local factors.
- The involvement of multiple stakeholders in forest restoration is bound to cause a conflict of interests among different stakeholders; along with low priority and insufficient funding, it becomes even more challenging.

Policy measures

- There have been remarkable initiatives to involve local people in the protection and development of forests by forming joint forest management committees (JFMC).
- However, a review of their functionality and performance is essential to make them more dynamic and effective to scale up their involvement.
- Therefore, negotiations with a wide range of stakeholders including these committees for resolving conflicts and fulfilling restoration objectives are a must and a challenging feat to reach a suitable trade-off.

Way forward

- Adequate financing is one of the major concerns for the success of any interventions including restoration.
- The active approach of restoration which includes tree planting and the involvement of communities seeks incentives and rewards and make the whole affair quite cost-intensive.
- The contribution of corporates in restoration efforts so far has been limited to 2% of the total achievement.
- Hence, alternate ways of financing such as involving corporates and dovetailing restoration activities with ongoing land-based programmes of various departments can help to make it easy for operation.
- Apart from these specific challenges, the common barriers to restoration as identified globally also need critical review before placing the required methodologies and area-specific strategies in place.

Conclusion

- Active engagement of stakeholders including non-governmental organizations, awareness and capacity building of stakeholders with enabling policy interventions and finance can help a lot to achieve restoration objectives for India.
- The need of the hour is an inclusive approach encompassing these concerns with the required wherewithal.

13. Physiology Nobel for work on temperature and touch

U.S. scientists David Julius and Ardem Patapoutian have won the Nobel Medicine Prize for discoveries on receptors for temperature and touch.

Who are the Laureates?

- David Julius and Ardem Patapoutian, working independently in the United States, made a series of discoveries in the late 1990s and early 2000s.
- They figured out the touch detectors in our body and the mechanism through which they communicate with the nervous system to identify and respond to a particular touch.

What did they discover?

- They discovered the molecular sensors in the human body that are sensitive to heat, and to mechanical pressure, and make us “feel” hot or cold, or the touch of a sharp object on our skin.
- In 1997, Dr. Julius and his team published a paper in Nature detailing how capsaicin, or the chemical compound in chili peppers, causes the burning sensation.
- They created a library of DNA fragments to understand the corresponding genes and finally discovered a new capsaicin receptor and named it TRPV1.
- This discovery paved the way for the identification of many other temperature-sensing receptors.
- They identified another new receptor called TRPM8, a receptor that is activated by cold. It is specifically expressed in a subset of pain-and-temperature-sensing neurons.
- They identified a single gene PIEZO2, which when silenced made the cells insensitive to the poking. They named this new mechanosensitive ion channel Piezo1.

How do they work?

- The human ability to sense heat or cold and pressure is not very different from the working of the many detectors that we are familiar with.
- When something hot, or cold, touches the body, the heat receptors enable the passage of some specific chemicals, like calcium ions, through the membrane of nerve cells.
- It's like a gate that opens up on a very specific request. The entry of the chemical inside the cell causes a small change in electrical voltage, which is picked up by the nervous system.
- There is a whole spectrum of receptors that are sensitive to different ranges of temperature.
- When there is more heat, more channels open up to allow the flow of ions, and the brain is able to perceive higher temperatures.

Therapeutic implications

- Breakthroughs in physiology have often resulted in an improvement in the ability to fight diseases and disorders. This one is no different.
- There are receptors that make us feel pain. If these receptors can suppress, or made less effective, the person had felt less pain.
- Chronic pain is present is a number of illnesses and disorders. Earlier, the experience of pain was a mystery.
- But as we understand these receptors more and more, it is possible that we gain the ability to regulate them in such a way that the pain is minimized.

14. Sovereign Credit Rating

In News: Rating agency Moody's Investors Service has upgraded India's sovereign rating outlook to 'stable' from 'negative', citing an decrease of risks from COVID-19.

- It retained India's rating at Baa3, reflecting the lowest investment grade rating.
 - Moody's considers a Baa3 or higher rating to be of investment grade, and a rating of Ba1 and below is speculative.
- It expects 2021-22 to record 9.3% growth in GDP, followed by 7.9% next year.
- 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.

Sovereign Credit Rating:

- A sovereign credit rating is an independent assessment of the creditworthiness of a country or sovereign entity.
- It can give investors insights into the level of risk associated with investing in the debt of a particular country, including any political risk. Another common motivation for countries to obtain a sovereign credit rating is to attract foreign direct investment (FDI).
- The Economic Survey 2020-21 has called for sovereign credit ratings methodology to be made more transparent, less subjective and better attuned to reflect an economy's fundamentals.
- In India, there are six credit rating agencies registered under Securities and Exchange Board of India (SEBI) namely, CRISIL, ICRA, CARE, SMERA, Fitch India and Brickwork Ratings.

India's present scenario

- India has a higher debt burden and weaker debt affordability.
- However, India's narrower current account deficits and historically high foreign exchange reserves have reduced the country's vulnerabilities to external shocks.

15. The Draft Electricity (Rights of Consumers) Amendment Rules, 2021

In News : The Draft Electricity (Rights of Consumers) Amendment Rules, 2021 were recently published.

Overview of the new rules

- Distribution licensees should **ensure 24×7 uninterrupted power supply** to all consumers so that there is no requirement of running Diesel Generating (DG) sets.
- The electricity regulatory commission could consider a **separate reliability charge** for the distribution company, if it required funds for investment in infrastructure.
- The state electricity regulatory commission should also make a **provision of penalty** in case the standards laid down are not met by the distribution company.

Electricity (Rights of Consumers) Rules, 2020

- These rules serve to “empower” consumers with rights that would allow them to access continuous supply of quality, reliable electricity.

- The areas covered under the rules include metering arrangement; billing and payment; reliability of supply, etc.

Key Provisions

- States will have to implement these rules and discoms will be held more accountable for issues like delays in providing and renewing connections of electricity.
- They are also obligated to provide round-the-clock electricity to consumers, as per the Ministry of Power.
- To ensure compliance, the government will apply penalties that will be credited to the consumer's account.
- There are certain exceptions to these rules, especially where use for agricultural purposes is concerned.

16. Crackdown there, hope here

In News :

China has been taking some drastic measures for the overhaul of its tech sector.

Details:

- China has imposed sweeping regulations, antitrust and anti-monopoly lawsuits, cyber security probes, and algorithm controls on the entire tech segment, ranging from e-commerce websites, search engines, ride sharing and food delivery apps to e-learning portals.
 - These clampdowns are estimated to have wiped off over \$1.5 trillion of value from Chinese tech stocks.
- In 2020, China stopped Ant Group's blockbuster initial public offering (IPO). This came as a shock as Alibaba's fintech arm, was on track to raise \$37 billion and its valuation was reportedly nearing more than \$300 billion.
- This episode was perceived as an attempt to rein in the successful entrepreneur, Jack Ma. Prior to this incident, he had publicly criticised the government's tech policy for stifling innovation.
- In 2021, there is yet another high-profile crackdown on a Chinese tech company.
- China's obsessive efforts to ensure that no private entity gains enough data to ever be in a position to even remotely challenge Chinese Communist Party-led state dominance, and that no competing country gains access to the

citizen database through any unforeseen means, is the major reason behind this overhaul.

- These efforts are not limited only to the consumer tech sector.
- State support to manufacturing and hard tech industries, which are perceived to be of higher value, including 5G/6G, semiconductor chips, artificial intelligence, biotechnologies, batteries, aviation and space tech, has also increased.
- A conscious redirection of efforts to areas that would maximise China's geopolitical and geo-economic gains is being witnessed.
- It would not be surprising to see more state-owned enterprises like ZTE and state-supported heavyweights like Huawei focus on strategic high technology and attempt to be pioneers in the global market.

How is it beneficial for India?

- China's sweeping overhaul of its tech sector could benefit India in the near future.
- The rate of digitisation accelerated during the pandemic in India and these developments could be beneficial for India.
- Start-ups here raised a record \$10.46 billion in the first half of this year alone. India's tally of unicorns has crossed 60.
- This trajectory and India's projected growth will make the country the first destination of the funds exiting Chinese stocks during these crackdowns.
- However, mirroring the U.S. start-up ecosystem, India's emphasis too is on consumer tech, from which China is tactically distancing itself. The U.S. also has a far-reaching system for research and development of strategic technology.

How can India take Advantage?

- The U.S. remains China's lone rival in the high-tech space, and the extent of this partnership will be important for India.
- U.S. interests will more likely be inclined towards the possibilities of market entry and penetration of its firms.
- India should strive to move beyond this to complementary collaborations.
- India should also remain open to partnerships with friendly nations, keeping the enhancement of its internal capacity as the objective.
 - E.g.: the ongoing talks with Taiwan to bring in a semiconductor chip manufacturing plant to India. If successful, this could drive next-generation industries, including 5G devices and electric vehicles.

Conclusion:

The progress India has made in sectors including biotech and space tech has shown that with the right political will and private participation, India could be self-sufficient and also reach global competitiveness. Concerted efforts to develop indigenous manufacturing and hard technology are important if India must retain its strategic autonomy. Only then can India securely reach its stated goal of being among the largest three economies by the end of this decade.

17. Chemistry Nobel to duo for developing Organo-Catalysis

The Nobel Prize for chemistry has been awarded to German scientist Benjamin List of the Max Planck Institute and Scotland-born scientist David WC MacMillan of Princeton University for their work on developing an organo-catalyst.

What are Catalysts?

- When two or more compounds react to form new compounds, the process is often aided by other chemicals that do not change themselves but help speed up the reaction.
- These catalysts have been known at least since the middle of the 19th century, and are used in virtually every chemical process these days.
- Till around 2000, only two kinds of chemicals were known to act as effective catalysts: metals, mainly heavier metals; and enzymes, naturally occurring heavy molecules that facilitate all life-supporting biochemical processes.
- Both these sets of catalysts had limitations.

Issues with conventional catalysts

- Heavier metals are expensive, difficult to mine, and toxic to humans and the environment.
- Despite the best processes, traces remained in the end product; this posed problems in situations where compounds of very high purity were required, like in the manufacture of medicines.
- Also, metals required an environment free of water and oxygen, which was difficult to ensure on an industrial scale.
- Enzymes on the other hand, work best when water is used as a medium for the chemical reaction.
- But that is not an environment suitable for all kinds of chemical reactions.
- List and MacMillan, the both, started experimenting with simple organic compounds.
- Organic compounds are mostly naturally occurring substances, built around a framework of carbon atoms and usually containing hydrogen, oxygen, nitrogen, sulfur, or phosphorus.

- Life-supporting chemicals like proteins, which are long chains of amino acids (carbon compounds containing nitrogen and oxygen) are organic.
- Enzymes are also proteins, and therefore, organic compounds.
- List and MacMillan started working with individual amino acids in enzymes – and struck gold.

Asymmetric catalysis

- Substances can have exactly the same chemical composition and molecular formula; yet differ widely in their properties. They are known as isomers.
- One type of isomers are those that differ in the way individual atoms are oriented in three-dimensional space.
- Two molecules could be exactly the same, except that they are mirror images of each other, like our hands.
- For simplicity, scientists often refer to these molecules as left-handed or right-handed.
- This simple difference can sometimes have enormous consequences because it allows the molecules to bind in different locations when they interact with other molecules.
- The end product in a chemical reaction is usually a mixture of left-handed and right-handed molecules.
- List and MacMillan discovered that by using a natural compound like an amino acid as a catalyst, they were obtaining only one specific mirror image of the end-product.
- This was later named asymmetric catalysis.

Significance of their discovery

- The new catalysts, derived from naturally occurring chemicals, were greener and cheaper and ensured that the end product of the chemical reaction was of a specific variety.
- The end product need not go through a purification process to yield the desired type of compound.
- The discovery being awarded the Nobel Prize in Chemistry 2021 has taken molecular construction to an entirely new level.
- Its uses include research into new pharmaceuticals and it has also helped make chemistry greener.

18. Mosquirix: First malaria vaccine to get WHO nod

In a historic move, the World Health Organization (WHO) has 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.

Mosquirix

- RTS,S/ASO1 (RTS.S), trade name Mosquirix acts against *P. falciparum*, the most deadly malaria parasite globally, and the most prevalent in Africa.
- The vaccine was able to prevent approximately 4 in 10 cases of malaria over a 4-year period in Africa.
- This is the first malaria vaccine that has completed the clinical development process.
- It is also the first malaria vaccine to be introduced by three national ministries of health through their childhood immunization programs – more than 800,000 children in Ghana, Kenya, and Malawi.
- have been vaccinated, and are benefiting from the added protection provided by the vaccine as part of a pilot program.

How the vaccine can help?

- WHO's recommendation is based on the advice of its two global advisory bodies, one for immunization and the other for malaria.
- WHO has recommended that in the context of comprehensive malaria control, the RTS,S/ASO1 malaria vaccine be used for the prevention of *P. falciparum* malaria in children living in regions with moderate to high transmission as defined by it.
- The malaria vaccine should be provided in a schedule of 4 doses in children from 5 months of age for the reduction of malaria disease and burden.

19. Cabinet clears 4,445-cr. textile parks

In News:

The Union Cabinet has approved the setting up of seven Mega Integrated Textile Region and Apparel (PM MITRA) Parks.

Details:

- The PM MITRA Parks are being set up at an outlay of ₹4,445 crore.
- The mega parks scheme will include brownfield and greenfield projects, spread over five years.
- The parks would be developed by a Special Purpose Vehicle (SPV) owned by the Central and State governments and would get two kinds of support.
- Development Capital Support, aimed at helping develop infrastructure, would fund 30% of the project cost with a cap of ₹500 crore for greenfield projects and ₹200 crore for brownfield projects.

- A separate Competitiveness Incentive Support would be limited to ₹300 crore per park.
- States offering the cheapest land (contiguous and encumbrance-free land of minimum 1,000 acres) and facilities such as adequate electricity and water would be selected through a transparent challenge route.
- The SPV would select a Master Developer to set up and maintain the park for a specified period. Of the park's area, 50% would be earmarked for manufacturing activity, 20% for utilities, and 10% set aside for commercial development.
- Industries in the parks would comprise four categories – units investing 300 crore or more, units investing 100-300 crore, investors of less than 100 crore and tenant units.

20. Trade multilateralism at risk

In News

- The article discusses the challenges faced by the World Trade Organization (WTO).

Background

- The WTO was created in 1995.
 - It deals with the rules of trade between countries marking the biggest reform of international trade emphasizing free-market capitalism.
 - It provides a forum for its members to negotiate on trade issues. It operates a body of rules in the form of the WTO agreements.
 - Finally, it provides a Dispute Settlement Mechanism (DSM) to resolve disagreements over the rules between members.

Appellate Body (AB):

- It is a standing body of seven persons that hears appeals from reports issued by panels in disputes brought by WTO Members.
- The Appellate Body can uphold, modify or reverse the legal findings and conclusions of a panel, and Appellate Body Reports are adopted by the Dispute Settlement Body (DSB) unless all members decide not to do so.
- The Appellate Body has its seat in Geneva, Switzerland.

Issue Area

- The establishment of WTO was a push by the USA to further its economic agenda. However, from the past few years, the United States seems to have

lost interest in it as it feels the WTO hasn't served the American national interest.

- This is largely because the USA was not able to contain the rise of China and in several trade-related disputes China has had the upper hand.

Impact

- Since December 2019, the AB has stopped functioning due to rising vacancies.
 - United States' blocking of new appointments to the WTO's Appellate Body (AB) has paralyzed the entire mechanism for resolving trade disputes between countries.
- The U.S. also **vetoed proposals to find solutions to this impasse**, including stalling the proposal of the European Union to establish an alternative interim appellate arbitration mechanism.
- Pending appeals to the Appellate Body has subsequently increased to around 20 cases, giving an option to countries who don't want to comply with the WTO panel decisions to appeal against the decision making the ultimate process a mockery.

Other challenges

1. First, no solution has been found to the public stockholding for food security purposes despite a clear mandate to do so in the 2015 Nairobi ministerial meeting.
 - India offers its farmers Minimum Support Price (MSP).
 - The WTO rules allow countries to procure, stock and distribute food. However, if such procurement is done at an administered price such as the MSP that is **higher than the external reference price**, then the budgetary support provided shall be considered trade-distorting and is subject to an overall cap.
 - With rising prices and the need to do higher procurement to support farmers and provide food to the poor at subsidised prices, India might breach the cap.
 - Although countries have agreed that legal suits will not be brought if countries breach the cap, it is imperative to find a permanent solution such as not counting MSP-provided budgetary support as trade-distorting.
2. Second, India and South Africa had proposed a TRIPS waiver to overcome intellectual property (IP)-related obstacles in increasing accessibility of COVID-19 medical products, including vaccines.
 - The WTO member countries continue to disagree on the need of waiving the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement for COVID-19 related medical products.

- Recommendation
 - The WTO needs to adopt a waiver in the upcoming ministerial meeting.
- 3. Third, the WTO is close to signing a deal on **regulating irrational subsidies** provided for fishing that has led to the overexploitation of marine resources by countries like China, which is the largest catcher and exporter of fish.

Fisheries are a key source of protein and livelihood for millions in coastal communities.

- Fishing subsidies directly contribute to overfishing.
- These subsidies effectively mean that taxpayers are paying industrial boats to degrade the environment and to destroy the food security and livelihood of vulnerable coastal communities.
- By fueling unfair competition between large fleets and individual artisanal fishermen, they are also fostering inequality.
- However, this agreement should strike a balance between conserving ocean resources and the livelihood concerns of millions of marginal fishermen.
- Recommendation
 - An effective special and differential treatment provision that accords adequate policy space is what India and other developing countries should insist on.
- 4. Fourth, concerns about WTO has led to the emergence of mega plurilateral trade agreements.
 - Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) – a treaty between 11 countries.
 - Regional Comprehensive Economic Partnership (RCEP) agreement between Asian economies and countries down under.
 - These agreements have a divided approach which not only fragments the global governance on international trade but also pushes the multilateral order to the margin, converting the WTO to what some call an “institutional zombie”.

Way forward

- Notwithstanding its flaws, the WTO is the only forum where developing countries like India, not a party to any mega plurilateral trade agreements,

can push for evolving an inclusive global trading order that responds to the systemic imbalances of extant globalisation.

- A rules-based global order has to be established as requested by Prime Minister Narendra Modi, during his recent U.S. visit.

Conclusion

- The upcoming WTO ministerial meeting in Geneva provides an opportunity to rescue this critical global institution from irrelevance.

21. Coal Crisis in India

More than half of the country's 135 coal-fired power plants are running on fumes – as coal stocks run critically low. They have fuel stocks of less than four days, government data shows.

Coal shortage in India

- In a country where 70% of the electricity is generated using coal, this is a major cause for concern as it threatens to derail India's post-pandemic economic recovery.
- Utilities are scrambling to secure coal supplies as inventories hit critical lows after a surge in power demand from industries and sluggish imports due to record global prices push power plants to the brink.

How did the crisis escalate?

- As India's economy picked up after a deadly second wave of Covid-19, demand for power rose sharply.
- Power consumption in the last two months alone jumped by almost 17%, compared to the same period in 2019.
- At the same time global coal prices increased by 40% and India's imports fell to a two-year low.
- India is the world's second largest importer of coal despite also being home to the fourth largest coal reserves in the world.
- Power plants that usually rely on imports are now heavily dependent on Indian coal, adding further pressure to already stretched domestic supplies.

What is the likely impact?

- Experts say importing more coal to make up for domestic shortages is not an option at present.
- India has seen shortages in the past, but what's unprecedented this time is coal is really expensive now.
- Businesses at the end of the day pass on these costs to consumers, so there is an inflationary impact – both direct and indirect that could potentially come from this.
- If the crisis continues, a surge in the cost of electricity will be felt by consumers.
- Retail inflation is already high as everything from oil to food has become more expensive.

Other reasons for this crisis

- In recent years, India's production has lagged as the country tried to reduce its dependence on coal to meet climate targets.
- Prices of power-generation fuels are surging globally as electricity demand rebounds with industrial growth, tightening supplies of coal and liquefied natural gas.
- India is competing against buyers such as China, the world's largest coal consumer, which is under pressure to ramp up imports amid a severe power crunch.
- Rising oil, gas, coal and power prices are feeding inflationary pressures worldwide and slowing the economic recovery from the COVID-19 pandemic.

Challenges posed

- The desire to cut its reliance on heavily polluting coal burning power plants has been a major challenge for the government in recent years.
- The question of how India can achieve a balance between meeting demand for electricity from its almost 1.4bn people has to be answered.

What can the government do?

- Experts advocate a mix of coal and clean sources of energy as a possible long-term solution.
- It's not completely possible to transition and it's never a good strategy to transition 100% to renewables without a backup.
- Long term investment in multiple power sources aside a crisis like the current one can be averted with better planning.

- There is need for closer coordination between Coal India Limited – the largest supplier of coal in the country and other stakeholders.
- For now, the government is working with state-run enterprises to ramp up production and mining to reduce the gap between supply and demand.

Way forward

- This is a global phenomenon, one not specifically restricted to India.
- It is unclear how long the current situation will last.
- With the monsoon on its way out and winter approaching, the demand for power usually falls.
- So, the mismatch between demand and supply may iron out to some extent.

22. Seeding a data revolution in Indian Agriculture

In June this year, two significant documents relating to the Indian agriculture sector were released.

What are the reports about?

- The first is a consultation paper on the India Digital Ecosystem of Agriculture (IDEA) and the second on Indian Agriculture: Ripe for Disruption from a private organisation, Bain and Company.
- Through their work, these reports have depicted the agriculture reforms announced by the union government as a game-changer in the agriculture sector.

Challenges highlighted

The major challenges of the agriculture sector are:

1. Food Sufficiency but Nutrition Deficiency
2. High import of edible oil and oilseeds
3. Yield plateaus
4. Degrading soil, Water stress
5. Inadequate market infra/linkages
6. Unpredictable, volatile prices
7. Post-harvest losses, wastages
8. Lack of crop planning due to information asymmetry

Key takeaway: Way for doubling farmers income

- These reports in short argues that benefiting from the huge investments into the agri-ecosystem, doubling farmers' income targets can be achieved in near future.
- The Indian agriculture sector in future will encompass farm to fork and pave the way for a single national market with a national platform with better connection between producer and consumers.

The forecast

- The Bain report is a data-based prediction on agri-business scenarios, anchored to the agricultural set-up at present and predicting its future trajectories in another 20 years.
- It includes targeting the production of alternative proteins, and food cell-based food/ingredients and initiating ocean farming, etc.
- The report has a 'today forward- future back approach' and predicts a drastic investment opportunity development by 2025.
- The agriculture sector (currently worth \$370 billion), is estimated to receive an additional \$35 billion investment.

The two enabling conditions for such investment opportunities are:

1. Changes in the regulatory framework, especially recent changes in the Farm Acts and
2. Digital disruption

The IDEA of integration

- **Digital disruption:** The blueprint of "digital agriculture" is similar to the digital disruption mentioned in the Bain report.
- **Integration:** Eventually, the farmer and the improvement of farmers' livelihood is the aim of the IDEA concept and it is proposed to happen through tight integration of agri-tech innovation and the agriculture industry.
- **Enabling conditions:** To be precise, the IDEA concept profounds the creation of second enabling conditions (which is described in the Bain report).
- **Openness of data:** The IDEA principles explicitly talk about openness of data, which means open to businesses and farmers, indicating the kind of integration it aims at.
- **Value-added innovative services:** by agri-tech industries and start-ups are an integral part of the IDEA architecture.
- **Data architecture:** The services listed in the document (to be available on the platform) are equally important data for farmers and businesses.

A thread of digital disruption

- The IT industry has opposition to IDEA mainly due to the ethics of creating a Unique Farmer ID based on one's Aadhaar number and also the potential for data misuse.
- Beyond the news coverage about the prospects of achieving the goal of Doubling Farmers Income on which the present government has almost lost its hope.

Issues with these reports

- The Bain report has not been widely discussed – at least in the public domain.
- The assumptions used by authors especially for its 'future back approach', need more or less focusing on widespread food production in controlled environments.
- The emission, energy, and other resource footprints and sustainability issues around these techniques are not adequately studied.

Yet these reports are important

- The report has convincingly demonstrated the business opportunity available in supply chains between farm to APMC mandi and mandi to the customer.
- This can be realised with the support of digital disruption and the latest agriculture reforms.
- Both these reports heavily rely on digital disruption to improve farmers' livelihoods, without discussing how much farmers will be prepared to benefit from the emerging business.

An unconvincing 'how'

- **Digital divide:** The fact is that a majority of small and marginal farmers are not technology-savvy.
- **No capacity building:** That most of them are under-educated for capacity building is ignored amidst these ambitious developments.
- **Unrealistic assumptions:** The Bain report relies on the general assumption that more investments into the agriculture sector will benefit farmers; 'but how' has not been convincingly answered.
- **Overemphasis on technology:** Similarly, how the technology fix will help resolve all the issues of Indian agriculture listed at the beginning of the report is unclear in the IDEA concept.
- **Reluctance by farmers:** These reports ignore the protest of farmers against the reforms without considering it as a barrier or risk factor resulting in a repealing of these new farm laws.

Way ahead: Focus on the farmer

- A data revolution is inevitable in the agriculture sector, given its socio-political complexities.
- However, we cannot just count on technology fixes and agri-business investments for improving farmers' livelihoods.
- There need to be immense efforts to improve the capacities of the farmers in India - at least until the educated young farmers replace the existing under-educated small and medium farmers.
- This capacity building can be done through a mixed approach through FPOs and other farmers' associations where technical support is available for farmers.

Conclusion

- Considering the size of the agriculture sector of the country this is not going to be an easy task but would need a separate program across the country with considerable investment.

23. Government releases GST dues of 40,000 crore to States

In News:

The Centre released 40,000 crore to States and Union Territories.

Details:

- The centre has released the GST dues under the back-to-back loan facility to meet the shortfall in GST compensation cess collections.
- Earlier in July 2021 an amount of ₹75,000 crore was released to the States & UTs with legislature.
- With the current release, the total amount released in the current financial year as back-to-back loan in-lieu of GST compensation has reached ₹1,15,000 crore.
- This release is in addition to normal GST compensation being released every 2 months out of actual cess collection.
- In the 43rd GST Council Meeting held it has been decided by the Central Government that it would borrow 1.59 lakh crore in 2021-22 and release it to States and UTs with Legislature on a back-to-back basis to meet the resource gap due to the short release of compensation on account of the inadequate amount collected in the Compensation Fund.

- The release of 40,000 crore made is funded from borrowings of GoI in 5-year securities.
- It is expected that this release will help the States/UTs in planning their public expenditure among other things, for improving, health infrastructure and taking up infrastructure projects.

24. Air India Disinvestment Deal

After 68 years, Air India is all set to return to the Tata fold.

What is the deal?

- The Tatas will own 100% stake in Air India, as also 100% in its international low-cost arm Air India Express and 50% in the ground handling joint venture, Air India SATS.
- Apart from 141 planes and access to a network of 173 destinations including 55 international ones, Tatas will also have the ownership of iconic brands like Air India, Indian Airlines and the Maharajah.

History of Air India

- Prominent industrialist JRD Tata founded the airline in 1932 and named it Tata Airlines.
- As India gained Independence, the government bought 49% stake in AI.
- In 1946, the aviation division of Tata Sons was listed as Air India, and in 1948, the Air India International was launched with flights to Europe.
- In 1953, Air India was nationalised and for the next over four decades it remained the prized possession for India controlling the majority of the domestic airspace.

Why was Air India sold?

- **End of Monopoly:** With economic liberalisation and the growing presence of private players, this dominance came under serious threat.
- **Govt running an airline:** Ideologically too, the government running an airline did not quite gel with the mantra of liberalisation.
- **Continuous losses:** By 2007, AI (which flew international flights) was merged with the domestic carrier, Indian Airlines, to reduce losses.
- **Wastage of taxpayers money:** But it is the mark of how poorly the airline was run that it has never made a profit since 2007.

Why wasn't it sold earlier?

Ans. Fear over Operational Freedom

- The first attempt to reduce the government's stake — disinvestment — was made in 2001 under the then NDA government.
- But that attempt — to sell 40% stake — failed.
- In 2018, the government made another attempt to sell the government stake — this time, 76%. But it did not elicit even a single response.
- In the latest attempt started in January 2020, the government has been able to finally conclude the sale.

So how was it managed this time?

- **Govt gives up stakes:** The mere fact that the government retained a partial stake. In other words, as long as the government kept a certain shareholding of AI, private players did not seem interested.
- **Operational freedom:** That's because the mere idea of government ownership, even if it was as little as 24%, made private firms wonder if they would have the operational freedom needed.
- **Debt sharing:** In the past, the government expected the bidders to pick up a certain amount of the debt. This time, the government let the bidders decide the amount of debt they wanted to pick up.

Significance of the deal

[A] From the government's perspective: A success

- **Disinvestment:** It underscores govt commitment to reducing the its role in the economy.
- **Easing burden on taxpayers:** This claims to have saved taxpayers from paying for daily losses of AI.
- **Economic reforms:** Given the historical difficulties in AI's disinvestment, or any disinvestment at all this is a significant achievement.

[B] Business perspective: Still a failure

- **Missing the target:** Purely in terms of money, the deal does not result in as big a step towards achieving the government's disinvestment target of the current year.
- **Unresolved bankruptcy:** The assets left with the government, such as buildings, etc., will likely generate Rs 14,718 crore. But that will still leave the government with a debt of Rs 28,844 crore to pay back.

[C] Value perspective: Success for Tatas

- **Business success:** From the Tatas' perspective, apart from the emotional aspect of regaining control of an airline that they started, AI's acquisition is a long-term bet.
- **Investment boost:** The Tatas are expected to invest far more than what they have paid the government if this bet is to work for them.

Conclusion

- **Complete liberalization:** The privatisation of Air India is a message from the Government to the markets and global investors that it has the political will to bite the reform bullet.
- **Roadmap for economic reforms:** The govt had to shed the "over-conservatism" that is typical of bureaucracy.
- **Future disinvestments:** A transaction as "tough and complex" as Air India's in an open, transparent and competitive bidding process, will boost future privatisation.

Way forward

- Other loss-making PSUs continue to drain taxpayers' hard-earned money and get abused and fleeced in the name of social welfare.
- The govt should imbibe this experience gained in future disinvestment biddings.

25. RBI suspends G-Sec Acquisition Programme (GSAP)

The Reserve Bank of India (RBI) has decided to halt its bond-buying under the G-Sec Acquisition Programme (GSAP).

Why such move?

- The GSAP had succeeded in ensuring adequate liquidity and stabilising financial markets.
- Coupled with other liquidity measures, it facilitated congenial and orderly financing conditions and a conducive environment for the recovery.

What is GSAP?

- The G-Sec Acquisition Programme (G-SAP) is basically an unconditional and a structured Open Market Operation (OMO), of a much larger scale and size.

- G-SAP is an OMO with a 'distinct character'.
- The word 'unconditional' here connotes that RBI has committed upfront that it will buy G-Secs irrespective of the market sentiment.

What are Government Securities?

- These are debt instruments issued by the government to borrow money.
- The two key categories are:
 1. Treasury bills (T-Bills) – short-term instruments which mature in 91 days, 182 days, or 364 days, and
 2. Dated securities – long-term instruments, which mature anywhere between 5 years and 40 years

Why G-Secs?

- Like bank fixed deposits, g-secs are not tax-free.
- They are generally considered the safest form of investment because they are backed by the government. So, the risk of default is almost nil.
- However, they are not completely risk-free, since they are subject to fluctuations in interest rates.
- Bank fixed deposits, on the other hand, are guaranteed only to the extent of Rs 5 lakh by the Deposit Insurance and Credit Guarantee Corporation (DICGC).

Other decisions

- The RBI, however, remained ready to undertake G-SAP as and when warranted by liquidity conditions.
- It would also continue to flexibly conduct other liquidity management operations including Operation Twist (OT) and regular open market operations (OMOs).

26. Global warming phenomenon

In News :

The Nobel Prize for Physics for 2021 has been awarded to climatologists Syukuro Manabe and Klaus Hasselmann, and physicist Giorgio Parisi for their groundbreaking contributions in the understanding of complex physical systems.

Details:

- The Nobel
 - The Nobel Prize is being given to climatologists for the first time since its inception in 1901.
 - The prize-winning work done by the laureates are in different areas but they fall under the umbrella of complex systems, climate on the one hand, and spin liquids on the other and so are broadly linked to one another.
- Syukuro Manabe's Work
 - Syukuro Manabe and collaborators made pioneering attempts at modelling atmospheric warming due to the increase in carbon dioxide in the 1950s and 1960s.
 - Manabe's model pinned the quantitative impact of warming due to carbon dioxide and he estimated that a doubling of carbon dioxide would lead to a temperature rise of 2 degrees.
 - His model confirmed that the rise in temperature was due to the increase in carbon dioxide instead of the Sun's radiation.
- Klaus Hasselmann's Work
 - He built a stochastic climate model that connects climate and weather as he used a connection between the randomly varying weather patterns and inferred from these the signal of climate.
 - As per the information released by the Nobel Academy, Klaus Hasselmann later developed methods to identify the human fingerprint on climate change.
 - The models that he built carried information about warming due to solar radiation, greenhouse gases, and other causes, each of which could be separated.
- Giorgio Parisi's Work
 - Parisi was able to identify a structure to the replicas by a replica trick and describe it mathematically.
 - Replica trick is a mathematical technique in which many copies of the system i.e. replicas are processed at the same time to calculate meaningful quantities out of spin glasses.
 - This led to the method being used eventually to solve problems in the field of complex systems including not only physics but solving problems in mathematics, biology, neuroscience.

Significance:

- The works of the three scientists cover phenomenon that is diverse from the spans length scales ranging from centimetres to the size of the planet and the description of what goes on at a microscopic level.

- As there is a solid physics basis to climate science, their work would amplify the understanding of the complex physical system that has many interacting elements, and they often show chaotic or dynamic behaviour.

Inference:

- A comprehensive understanding of the complex physical system would throw light on its dynamic physical behaviours and would further associate with the solutions to the problems of Climate Science that mankind urgently needs.

Other Important Concepts:

- Green-house Effect
 - Green-house effect is the atmospheric absorption of some part of the outgoing radiation when the incoming short-wavelength radiation from the Sun is absorbed by the Earth and re-emitted outwards as long-wavelength radiation.
 - Though the greenhouse effect also has a positive impact as it keeps the surface of the earth warm and makes life possible. But the increase in the percentage of greenhouse gases in the atmosphere can rise the warming to a degree that is harmful to life.
 - A Swedish scientist Svante Arrhenius estimated around the close of the 19th century if the carbon dioxide in the atmosphere double, this would cause its temperature to increase by 5-6 degrees.
- Weather & Climate
 - Weather refers to the day-to-day variations in temperature and rainfall.
 - Climate describes long-time effects and also seasonal and average behaviour over a long time.

27. Himachal Pradesh getting less snow

In News :

- A recent study conducted jointly by the State Centre on Climate Change and Space Applications Centre (ISRO) Ahmedabad, using Advanced Wide Field Sensor (AWiFS) satellite data has revealed that all major river basins including Satluj, Ravi, Chenab, and Beas have witnessed an overall decrease of 18.5% in area under snow in 2020-21 winters in comparison to 2019-20.

Identifiable Causes of the loss of Snow:

Natural Cause

1. The prime reason is the changes in the global climate pattern which has led to the reduction in the precipitation trend.
2. The average temperature has also risen in the region faster than the peninsular region.
3. On average relatively more moisture is being carried towards the Himalayas. But there is a lack of conditions for sub-zero temperature, hence snowfall is declining as global warming has led to a rise in temperature.

Man-Made Cause

- Unsustainable rapid deforestation
- Unregulated construction activities
- Increase in air and soil pollution in the region.

Impact of Loss of Snow Cover

- In Himachal Pradesh, about one-third of the geographical area remains under thick snow cover during the winter season.
- The snow cover helps in controlling the accumulation and ablations patterns of the glaciated regions.
- Major rivers such as Chenab, Beas, Parvati, Baspa, Spiti, Ravi, Satluj and their perennial tributaries originating from the Himalayas depend upon the seasonal snow cover for their discharge dependability.
- The spatial distribution of snow ensures sustainable measurement of the hydrological table at the basin.

Recommendations:

- Developed countries with legacy emissions need to effect deep emission cuts. Developing nations should also commit themselves to steeper emissions cuts based on the promise of support from developed countries.
- The developing countries should be supported adequately in their climate action endeavors in the form of easy access to low carbon technologies through technology transfer and adequate funding for mitigation and adaptation.

28. Using Paddy Straw as Cattle Feed

Punjab has now proposed to use the paddy crop residue as fodder for animals, especially cattle.

Why such a move?

- In Punjab, the total availability of paddy straw is about 20 million tones per annum.
- The total value of this straw is Rs 400 crore approx., calculated on an average rate of Rs 200/quintal. Almost all of it is burnt in fields.
- This accounts for economic loss apart from the loss of 77,000 tonnes of nitrogen and 5.6 million tonnes of Total Digestible Nutrients (TDN) which could be used for ruminant production.
- Also nearly 30.4 per cent of rice straw is used for animal feed in Southeast Asia, Mongolia and China.

Economics behind paddy straw

- High silica and lignin content reduces its digestive properties.
- Higher selenium content in paddy straw also limits its use as fodder in animals as compared to wheat straw.
- However, if given in moderate quantities (up to 5 kg per animal per day), selenium poses no health hazard to the animal.
- Paddy straw also contains oxalates (2-2.5%) which leads to calcium deficiency so mineral mixture should always be fed along with the straw.

Treatments for feeding paddy straw to animals

- Paddy Straw cannot be directly fed to animals. It has to undergo some treatments.
- Two of them are: Urea-only treatment and urea plus molasses treatment.

[A] Urea treatment of paddy straw

- 14 kg of urea is dissolved in 200 litres water and spray on chopped paddy straw.
- The fermented straws have soft texture with 6.0-8.0 per cent crude protein, 3.0-4.0 percent DCP and 55-60 per cent TDN.
- This involves a combination of physical, chemical and biological treatments.
- The paddy straw is chaffed and moistened (physical) with urea solution (chemical).
- The breakdown of urea release ammonia gas, a part of which is utilised by microbes (biological) for their proliferation (enriching the straw with microbial protein).
- This in turn results in breakage of lingo-cellulosic bonds making cellulose and hemi-cellulose assessable for utilization by microbes in the rumen.
- The digestibility of cellulose increases from 40-45% in untreated paddy straw to 70-75 per cent in fermented wheat straw.

[B] Urea plus molasses treatment

- Also called “Urea-Molasses impregnated straw”, this method involves treating paddy straw with urea and molasses.
- Urea 1 kg and molasses 3 kg was mixed thoroughly and mixed with water 10 kg. This is mixed with chaffed paddy straw and fed to animals on same day.
- The experts however clarify that for maintenance of body weight in animals, paddy straw alone is not sufficient.
- Minerals and green fodder supplementation is required.

How does the nutritional value of paddy straw increase after urea treatment?

- The TDN values in urea treated paddy straw increased manifold as compared to untreated straw.
- Crude protein (CP) increased from 4.5% to 8%, digestible crude protein (DCP) from 1.5% to 4% and total digestible nutrients (TDN) from 40% to 55%.
- The feeding of urea treated straw (6 kg/ day) to lactating buffaloes giving about 10 kg milk/ day can result in saving about 60 per cent of oilseed cake in the ration.
- Feeding of paddy straw should be mixed with berseem, cowpea or Lucerne as it forms a maintenance ration.
- The straw should be fed with concentrate mixture and additional DCP or limestone should be given to the animals to reduce the effect of oxalates.
- Oxalates also interfere in carbohydrate metabolism perhaps due to non-availability of calcium as cofactor.

What are the potentially harmful effects?

- The intake of siliceous forages has been associated with urinary siliceous calculi in drier regions where water may be limited.
- There have been no definitive studies in India, but urinary calculi are associated with rice straw consumption.
- It has high selenium (0.5 to 4.5 %) content which can cause serious health problems in dairy animals.

29. Linear No-Threshold (LNT) Model for Radiation Safety

The U.S. Nuclear Regulatory Commission (NRC) decisively upheld the Linear No-Threshold (LNT) model to prescribe radiation safety standards, ending the protracted controversy on the topic.

What is the LNT Model?

- The LNT is a dose-response model used in radiation protection to estimate stochastic health effects such as radiation-induced cancer, genetic mutations etc. on the human body due to exposure to ionizing radiation.
- The LNT model states that biological effects such as cancer and hereditary effects due to exposure to ionising radiation increase as a linear function of dose, without threshold.
- It provides a sound regulatory basis for minimizing the risk of unnecessary radiation exposure to both members of the public and radiation workers.

Why in news?

- LNT model continues to provide a sound basis for a conservative radiation protection regulatory framework that protects both the public and occupational workers.
- The model helps the agencies to regulate radiation exposures to diverse categories of licensees, from commercial nuclear power plants to individual industrial radiographers and nuclear medical practices.
- There are also studies and findings that support the continued use of the LNT model, including those by national and international authoritative scientific advisory bodies.

30. Economics Nobel for research on wages, jobs

In News :

The Nobel prize for economics has been awarded to U.S.-based economist David Card for research on how minimum wage, immigration and education affect the labour market. The prize was shared with two, Guido Imbens and Joshua Angrist for creating a way to study these types of societal issues.

Details:

- David Card's pioneering research challenges commonly held ideas.
- It showed that:
 - an increase in minimum wage does not lead to less hiring
 - One conclusion was that companies are able to pass on the cost of higher wages to customers by raising prices.

- In other cases, if a company was a major employer in a particular area, it may have been able to keep wages particularly low, so that it could afford to pay a higher minimum without cutting jobs.
- immigrants do not lower pay for native-born workers
 - It was found that the incomes of those who are native-born workers can benefit from new immigrants, while immigrants who arrived earlier are the ones at risk of being negatively affected.
- This minimum wage research fundamentally alters economists' views of such policies.
- Card's work on minimum wage is an example of a "natural experiment," or a study based on observation of real-world data. The problem with such experiments is that it can sometimes be difficult to isolate cause and effect.
 - Imbens and Angrist developed statistical methods to get around these challenges and determine more precisely what can actually be said about the causes and effects of natural experiments.

Note:

Unlike the other Nobel prizes, the economics award wasn't established in the will of Alfred Nobel but by the Swedish central bank in his memory in 1968, with the first winner selected a year later. It is the last prize announced each year.

31. Industry seeks clarity on space policy

In News:

Inauguration of the Indian Space Association (ISpA).

Indian Space Association:

- Indian Space Association is an organisation meant to represent the interests of the space sector with government and private sector bodies across the board.
- It includes the Indian Space Research Organisation, Walchandnagar Industries, TATA Nelco, Pixxel, Mapmy India and Bharti Airtel.
- It will act as an umbrella for all public and private entities contributing to the development of India's space sector.
- It will undertake policy advocacy and engage with all stakeholders in the Indian space domain, including the government and its agencies.

- The initiative will provide the Indian space sector with four pillars and will promote higher participation of private entities. The four pillars being:
 - The freedom of innovation to the private sector
 - The role of the government as an enabler
 - Preparing youth for the future
 - To see the space sector as a resource for the progress of the common man
- It would lead to better mapping, imaging and connectivity facilities for the common people.
- Also, the space sector implies better speed from shipment to delivery for entrepreneurs, this also means better security and income for fishermen and better forecast of the natural calamity.

Details:

- Ahead of major launches in 2022, India has announced its intent to liberalise the space sector and have more private companies use the facilities of the ISRO for developing as well as launching satellites. While there have been drafts of a new space policy, these are yet to take shape.
- In this backdrop, the industrialists have sought a clearer picture of the government's space policy at the earliest.
- They suggested that, for the space industry to grow, the government should help small and medium sector enterprises (SME) access more capital as well as move faster on finalising its space policy.
- They have requested flexibility for satellite frequency users to use any frequency range and to be able to freely buy technology from abroad.

32. Extended Producer Responsibility (EPR) for Plastic Waste Collection

The Environment Ministry has issued draft rules that mandate producers of plastic packaging material to collect all of their produce by 2024 and ensure that a minimum percentage of it be recycled as well as used in subsequent supply.

EPR

- Extended Producer Responsibility (EPR) means the responsibility of a producer for the environmentally sound management of the product (plastic packaging) until the end of its life.
- India had first introduced EPR in 2011 under the Plastic Waste (Management and Handling) Rules, 2011 and E-Waste Management and Handling Rules, 2011.

What are the new EPR rules for Plastic Waste?

(A) Plastic packaging

- The new EPR guidelines covers three categories of plastic packaging including:
 1. **Rigid plastic**
 2. **Flexible plastic packaging of single layer or multilayer** (more than one layer with different types of plastic), plastic sheets and covers made of plastic sheet, carry bags (including carry bags made of compostable plastics), plastic sachet or pouches
 3. **Multi-layered plastic packaging** which has at least one layer of plastic and at least one layer of material other than plastic.
- It has also specified a system whereby makers and users of plastic packaging can collect certificates – called Extended Producer Responsibility (EPR) certificates – and trade in them.

(B) Ineligible plastics for EPR

- Only a fraction of plastic that cannot be recycled will be eligible to be sent for end-of-life disposal such as road construction, waste to energy, waste to oil and cement kilns.
- Only methods prescribed by the Central Pollution Control Board will be permitted for their disposal.

Targets for recycling

- In 2024, a minimum 50% of their rigid plastic (category 1) will have to be recycled as will 30% of their category 2 and 3 plastic.
- Every year will see progressively higher targets and after 2026-27, 80% of their category 1 and 60% of the other two categories will need to be recycled.
- If entities cannot fulfil their obligations, they will on a “case by case basis” be permitted to buy certificates making up for their shortfall.

Effects on non-compliance

- Non-compliance, however, will not invite a traditional fine.
- Instead, an “environmental compensation” will be levied, though the rules do not specify how much this compensation will be.

Challenges in mandatory EPR

There are several challenges faced by both producers and bulk consumers that hinder proactive participation.

- **Consumer awareness:** Waste segregation has been the greatest challenge in India owing to lack of consumer awareness.
- **Lack of compliance:** The plastic producers do not wish to engage in the process holistically and take the effort to build awareness.
- **Large scale involvement:** The EPR doesn't take into account the formalization of informal waste pickers, aggregators and dismantlers.
- **Lack of recycle infrastructure:** These challenges range from lack of handling capacity to illegitimate facilities in the forms of multiple accounting of waste, selling to aggregators and leakages.

Way forward

- **Tracking mechanism:** What India needs is to develop tracking mechanisms and provide oversight of waste compliance, in order to ensure that the mechanism of waste disposal is streamlined.
- **Strict enforcement:** While enforcement strictness is of paramount importance, it is also vital to build an incentive structure around this to ensure better complicity by the producers.
- **Innovation:** The time is ripe for innovators to come up with an alternative for plastics and the strong will of the Government to rid the toxic waste in a sustainable and safe manner.

33. Government announces plastic waste recycling targets

In News : The Environment Ministry has issued draft rules that mandate producers of plastic packaging material to collect all of their produce by 2024

- The producers have to ensure that a minimum percentage of it be recycled as well as used in subsequent supply.

Key takeaways

- It has also specified a system whereby makers and users of plastic packaging could collect certificates – called Extended Producer Responsibility (EPR) certificates – and trade in them.

- Only a fraction of plastic that cannot be recycled would be eligible to be sent for end-of-life disposal such as road construction, waste to energy, waste to oil and cement kilns.
 - Only methods prescribed by the Central Pollution Control Board (CPCB) would be permitted for their disposal.
- Producers of plastic would be obliged to declare to the government, via a centralised website, how much plastic they produce annually.
- Companies would have to collect at least 35% of the target in 2021-22, 70% by 2022-23 and 100% by 2024.
- If entities cannot fulfil their obligations, they would on a “case by case basis” be permitted to buy certificates making up for their shortfall from organisations that have used recycled content in excess of their obligation.
- The CPCB would develop a “mechanism” for such exchanges on an online portal.
- Non-compliance would not invite a traditional fine. Instead an “environmental compensation” would be levied.

Categories of Plastic packaging

- Plastic packaging shall fall into three categories.
- The **first category** is “rigid” plastic;
- **Category 2** is “flexible plastic packaging of single layer or multilayer, plastic sheets and covers made of plastic sheet, carry bags, plastic sachet or pouches;
- The **third category** is called multilayered plastic packaging, which has at least one layer of plastic and at least one layer of material other than plastic.
- In 2024, a minimum 50% of their rigid plastic (category 1) would have to be recycled as would 30% of their category 2 and 3 plastic.
- Every year would see progressively higher targets and after 2026-27, 80% of their category 1 and 60% of the other two categories would need to be recycled.

34. MHA begins talks with Gorkha leaders, West Bengal Govt.

In News :

The Ministry of Home Affairs (MHA) began tripartite talks with Gorkha representatives from the Darjeeling hills, and the Terai and Dooars regions, and the Government of West Bengal.

The talks are aimed at resolving the issues related to the Gorkhas.

What is the Gorkha Issue?

- The Gorkhaland Movement is a movement mainly focused on the Darjeeling Hills of West Bengal, which demands the creation of a separate state of Gorkhaland.
- Gorkhaland consists of Nepali-speaking people of Darjeeling, Kalimpong, Kurseong and other hilly districts of West Bengal. The people belonging to these areas have ethnic, cultural and language differences with the Bengali community of West Bengal.
- The demand for Darjeeling as a separate administrative region dates back to 1907.

35. Deconstructing climate finance

Context

In the run-up to the 26th UNFCCC media reports have claimed that developed countries are inching closer to the target of providing \$100 billion annually. This view has been bolstered by the Organisation for Economic Co-operation and Development (OECD), which claimed that climate finance provided by developed countries had reached \$78.9 billion in 2018.

Issue of climate financing and claim of reaching the target of \$100 billion

- These claims reaching the target of \$100 billion annually is erroneous.
- First, the OECD figure includes private finance and export credits.
- **Public finance:** Developing countries have insisted that developed country climate finance **should be from public sources** and should be provided as **grants or as concessional loans**.
- However, the OECD report makes it clear that the public finance component **amounted to only \$62.2 billion in 2018**, with bilateral funding of about \$32.7 billion and \$29.2 billion through multilateral institutions.
- **Nature of finance:** Significantly, the final figure comes by **adding loans and grants**. Of the public finance component, loans comprise 74%, while **grants make up only 20%**.
- The report does not say how much of the total loan component of \$46.3 billion is concessional.
- **Non-concessional loans:** From 2016 to 2018, 20% of bilateral loans, 76% of loans provided by multilateral development banks and 46% of loans provided by multilateral **climate funds were non-concessional**.
- Between 2013 and 2018, the share of loans has continued to rise, while the share of grants decreased.
- The OECD reports on climate finance have long been criticised for inflating climate finance figures.

- In contrast to the OECD report, Oxfam estimates that in 2017-18, out of an average of \$59.5 billion of public climate finance reported by developed countries, the climate-specific net assistance ranged only between **\$19 and \$22.5 billion per year**.
- **The 2018 Biennial Assessment of UNFCCC's Standing Committee on Finance** reports that on average, developed countries provided only \$26 billion per year as climate-specific finance between 2011-2016.

Broken commitments from the US on climate financing

- U.S. President Joe Biden recently said that the U.S. will double its climate finance by \$11.4 billion annually by 2024.
- It is Congress that will decide on the quantum after all.
- The U.S. also has a history of broken commitments, having promised \$3 billion to the Green Climate Fund (GCF) under President Barack Obama, but delivering only \$1 billion.
- The future focus of U.S. climate finance is the mobilisation of **private sector investment**.
- The bulk of the money coming in would be through private funds, directed to those projects judged "bankable" and not selected based on developing countries' priorities and needs.

Finance skews toward mitigation

- Climate finance has also remained skewed towards mitigation, despite the repeated calls for maintaining a balance between adaptation and mitigation.
- The 2016 **Adaptation Gap Report of the UN Environment Programme** had noted that the annual costs of adaptation in developing countries could range from \$140 to \$300 billion annually by 2030 and rise to \$500 billion by 2050.
- Currently available adaptation finance is significantly lower than the needs expressed in the Nationally Determined Contributions submitted by developing countries.

Conclusion

Delivering on climate finance is fundamental to trust in the multilateral process. Regrettably, while developing countries will continue to pressure developed countries to live up to their promises, the history of climate negotiations is not in their favour.

36. Agri-food systems need a transformative change

Context

There is an urgent need for reorientation of the long-term direction of agri-food systems to not only enhance farm incomes but also ensure better access to safe and nutritious foods.

Challenge of malnutrition in India

- The findings from the first round of the Fifth National Family Health Survey suggest that nutrition-related indicators have worsened in most States.
- In addition, findings from the Comprehensive National Nutrition Survey (2016-18) have highlighted the **role of micro-nutrient malnutrition**.
- Pathways for nutritional security consist of improving dietary diversity, kitchen gardens, **reducing post-harvest losses**, making safety net programmes more **nutrition-sensitive**, women's empowerment, enforcement of standards and regulations, improving Water, Sanitation and Hygiene, nutrition education, and effective use of digital technology.

Agri-food system: Significance and challenges it faces

- The agri-food systems are the most important part of the Indian economy.
- India produces sufficient food, feed and fibre to sustain about 18% of the world's population (as of 2020). Agriculture contributes about 16.5% to India's GDP and employs 42.3% of the workforce (2019-20).
- A **sustainable agri-food system** is one in which a variety of sufficient, nutritious and safe foods are made available at an affordable price to everyone, and nobody goes hungry or suffers from any form of malnutrition.
- However, the country's agri-food systems are facing new and unprecedented challenges, especially related to economic and ecological sustainability, nutrition and the adoption of new agricultural technologies.
- The edifice of India's biosecurity remains vulnerable to disasters and extreme events.

Way forward: Reorienting agri-food systems

- There is an urgent need for reorientation of the long-term direction of agri-food systems to not only **enhance farm incomes** but also ensure better **access to safe and nutritious foods**.
- Additionally, the agri-food systems need to be reoriented to **minimise cost on the environment and the climate**.

- This need is recognised by the **theme of World Food Day 2021: 'Our actions are our future. Better production, better nutrition, a better environment and a better life'**.
- FAO's support for the transformation of agri-food systems is rooted in agro-ecology.
- The more diverse an agricultural system, the greater its ability to **adapt to shocks**.
- Different combinations of integrated crop-livestock-forestry-fishery systems can help farmers produce a variety of products in the same area, at the same time or in rotation.
- In January this year, FAO in collaboration with NITI Aayog and the Ministry of Agriculture convened a National Dialogue to evolve a framework for the transition to a more sustainable agri-food systems by 2030 and identify pathways for enhancing farmers' income and achieving nutritional security.

Conclusion

Food systems can help combat environmental degradation or climate change. Sustainable agri-food systems can deliver food security and nutrition for all, without compromising the economic, social and environmental bases.

37. Commission for Air Quality Management report

Context According to a report by the Commission for Air Quality Management, there is a 70% reduction so far in instances of stubble burning in Punjab and 18% in Haryana from last year.

- This, however, is a preliminary analysis as harvesting is still under way and the day-to-day variation in the number of fires is extremely high.

Key takeaways

- There are several initiatives taken to decrease stubble burning such as the increased use of happy seeder [harvesting equipment] and the use of bio-decomposers but this will take time for results to show.
- Over the years it has been observed that fire counts increase when there is too little time between the paddy being ready for harvesting and the right time to sow wheat.
- This year, excessive moisture in northern India due to an overhanging monsoon and a delay in the markets opening for trading, may further squeeze the time available for farmers to harvest and sow, further forcing them to set their fields alight (fire).

What is Stubble Burning?

- Stubble burning is the act of setting fire to crop residue to remove them from the field to sow the next crop
- It is a traditional practice in Punjab and Haryana to clean off the rice chaff to prepare the fields for winter sowing
- It begins around October and peaks in November, coinciding with the withdrawal of southwest monsoon.
- On December 10, 2015, the National Green Tribunal (NGT) had banned crop residue burning in the states of Rajasthan, Uttar Pradesh, Haryana and Punjab

38. Disinvestment of Air India

In News: The government announced its decision to sell all its stake in Air India (AI) as well as AI's stake in two other businesses – Air India Express Ltd (AIXL) and Air India SATS Airport Services Pvt Ltd (AISATS). The Tatas will own 100% stake in AI, as also 100% in its international low-cost arm Air India Express and 50% in the ground handling joint venture, AI SATS.

Why was Air India sold?

The sale of Air India to a private player has been in the offing for a long time. AI was started by the Tata Group in 1932, but in 1947, as India gained Independence, the government bought 49% stake in AI. In 1953, the government bought the remaining stake, and AI was nationalised.

For the next few decades, the national carrier dominated Indian skies.

- However, with economic liberalisation and the growing presence of private players, this dominance came under serious threat.
- The government running an airline did not quite gel with the mantra of liberalisation.
- By 2007, AI (which flew international flights) was merged with the domestic carrier, Indian Airlines, to reduce losses. It has never made a profit since 2007.
- In fact, since 2009-10, the government (and indirectly the taxpayer) has spent over Rs 1.1 lakh crore to either directly make up the losses or raise loans to do so.

- As of August 2021, AI's debt was Rs 61,562 crore. Moreover, every additional day that AI remains operational, the government suffers a loss of Rs 20 crore – or Rs 7,300 crore per year.
- The first attempt to reduce the government's stake – disinvestment – was made in 2001 under the then NDA government. But that attempt – to sell 40% stake – failed.

How did the Government sell it this time?

- As long as the government kept a certain shareholding of AI, private players did not seem interested. That's because the mere idea of government ownership, even if it was as little as 24%, made private firms wonder if they would have the operational freedom needed to turn around such a heavy loss-making airline. Unlike all the past attempts, this time the government put 100% of its stake on sale.
- This time, the government let the bidders decide the amount of debt they wanted to pick up (earlier the Government expected the bidders to pick up a certain amount of the debt along with the airline)

Both of the above changed stances worked.

Significance: Disinvestment of Air India

Positive:

- Underscores PM Modi's commitment to **reducing the government's role** in the economy; he can claim to have **saved taxpayers from paying for daily losses** of AI.
- A message from the Government to the markets and global investors that it has the **political will to bite the reform bullet**.
- Given the historical difficulties in AI's disinvestment, or any disinvestment at all (see table), this is a significant achievement.

Negative:

However, purely in terms of money, the deal does not result in as big a step towards achieving the government's disinvestment target of the current year.

- Of the total AI debt of Rs 61,562 crore, the Tatas will take care of Rs 15,300 crore and will pay an additional Rs 2,700 crore in cash to the government. That leaves Rs 43,562 crore of debt.
- The assets left with the government, such as buildings, etc., will likely generate Rs 14,718 crore. But that will still leave the government with a debt of Rs 28,844 crore to pay back.

- So, it can be argued that **if the government had run AI well**, it could have made profits and paid off the debts – instead of selling the airline (that can make profits) and still be left with a lot of debt.

Challenges before TATA Group

From the Tatas' perspective, apart from the emotional aspect of regaining control of an airline that they started, AI's acquisition is a long-term bet. The Tatas are expected to invest far more than what they have paid the government if this bet is to work for them.

- **At the brand level:** What will Air India stand for? Its greatest challenge will be to bring together the three airlines now under its control – Air India, Air Asia and Vistara. There will be a need to oversee core synergies that include buying parts for aircraft common to its full-service carriers Vistara and Air India, engineering services, repairs and maintenance, and consolidation of busy slots during festive season. Plus, the matter of staff, pilots and ground officials, and ensuring there is enough communication going on between trade unions and the group.
- **Up and running again?** The responsibility of managing and turning it around will be the sole responsibility of the conglomerate. If that is something that the group has taken into account, it may have an edge when it comes to dominating the sector. If not, finding answers may become a burden. The benefit of moving from a fragmented industry dominated by one player to a race where there is a second strong airline group could well inculcate discipline in pricing and contribute to a market that also grows and sustains.
- **COVID-19:** The Tatas will be flying into an aviation market reeling from the coronavirus pandemic that has left India's airlines bleeding cash. This will make restoring Air India's fortunes even tougher.
- **The Logistics:** One of the immediate challenges facing the new owners will be to find office space. The deal does not include the airline's other assets and the buildings like the Air India building at Nariman Point and Airlines House in Delhi. As a result, one of the Tata Group's first jobs will be to locate office accommodation for Air India's roughly 12,000 employees. The Tata Group will also have to launch a global manhunt for top personnel who will need to pick up the reins very quickly.

Can you answer the following questions?

1. Recent budgetary announcement regarding disinvestments and privatisation? Discuss.

2. The disinvestment process is a proof of government realising its true role in democracy. What is this role and how does it affect the democratic functioning? Critically analyse.

39. Zeolite Oxygen Concentrators: Chemistry in 3-D

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.

40. Exercise Yudh Abhyas 2021

The 17th edition of the India-U.S. bilateral exercise, Yudh Abhyas 2021, got underway in mountainous terrain and cold climate conditions of Alaska, US.

Yudh Abhyas 2021

- Exercise Yudh Abhyas is the largest running joint military training and defence cooperation endeavour between India and USA.
- The exercise aims at enhancing understanding, cooperation and interoperability between the two armies.

Why it is significant?

- Interestingly, this is the only India-U.S. service exercise continuing in bilateral format.
- The India-U.S. Malabar naval exercise became trilateral with the addition of Japan in 2015 and further brought in all the Quad partners together with the inclusion of Australia in 2020.
- Similarly, Japan joined the India-U.S. bilateral air exercise, Cope India, as an Observer in 2018 and the plan is to make it trilateral in phases.
- Other than the Malabar, Japan had sent observers for the first time during Cope India 2018 as an Observer in 2018.