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TATHASTU

Institute of Civil Services



CURRENT AFFAIRS August Month 2022

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Editorials of the Month

Role of Informal sector in Solid Waste Management

What are Solid Waste?

- Solid Waste includes Solid or semi-solid domestic waste, sanitary waste, commercial waste, institutional waste, catering and market waste and other non-residential wastes, street sweepings, silt removed or collected from the surface drains, horticulture waste, agriculture and dairy waste, treated biomedical waste excluding industrial waste, bio-medical waste and e-waste, battery waste, radio-active waste etc.

Key statistics that we must know:

- Urban India alone generates nearly 0.15 million tonnes per day of Municipal Solid Waste (MSW), with per capita generation ranging between 0.30 kg per day to 0.45 kg per day.
- It is estimated that about 62 million tonnes of waste are generated annually in the country, out of which 5.6 million is plastic waste, 0.17 million is biomedical waste.
- In addition, hazardous waste generation is 7.90 million tonnes per annum and 15 lakh tonnes is e-waste.
- The volume of waste is projected to reach 165 million tonnes by 2031 and 436 million tonnes by 2050, if existing policies, programmes and management strategies are not adequately addressed.

Who is an informal waste collector?

- According to the Solid Waste Management Rules (SWM), 2016: “informal waste collectors” includes individuals, associations or waste-traders who are involved in sorting, sale and purchase of recyclable materials.
- SWM 2016 define a “waste picker” as a person informally engaged in the collection and recovery of reusable and recyclable solid waste from the source of waste generation to sale of waste to recyclers directly or through intermediaries.
- While exact figures for the number of people involved in this work are difficult to come by, ‘Role and size of informal sector in waste management a review’, a paper published in Waste and Resource Management in 2013, estimates that the informal waste economy employs about 0.5-2 per cent of the urban population worldwide.

How do they contribute?

- Assuming an urbanisation rate of 50 per cent, the world’s urban population can be calculated at 2.8 billion people. Applying the informal sector range of 0.5-2 per cent to the urban population ranges (2.49-2.8 billion people) leads to an estimated size of roughly 12.5-56 million people worldwide working in the informal sector in waste management.
- The informal recycling sector reduces the cost incurred in the treatment and disposal of solid waste by extracting recyclables before the mixed waste is subjected to any specific treatment or haphazardly dumped into the landfills.
- The informal sector is the backbone of the recycling industry in the country, contributing a lot in terms of environmental sustainability and circular economy. It also enormously contributes in reducing the economic burden of urban local bodies.

What are the challenges they face?

- **Not covered under any labour legislation** – Therefore, they do not benefit from social security and medical insurance schemes.

- **Lack of basic amenities** - The workers have no access to drinking water or public toilets. They do not have appropriate personal protective equipment (PPE) such as gloves, gumboots and aprons. Due to the poor living and working conditions, malnutrition, anaemia and tuberculosis are common among them.
- **Exposed to wide range of occupational hazards** - Community waste bins and dumpsites act as breeding grounds for various bacterial and viral diseases. They have to segregate recyclables from mixed waste. At times, they handle sanitary waste, domestic hazardous waste and household biomedical waste with bare hands, which may cause various infections.
- **Marginalization** - It is widely recognised that the informal sector engaged in waste collection and sorting carries out the most labour-intensive and least rewarding job of recovering recyclable materials from unsegregated waste. Despite their crucial role, informal waste-workers continue to be subjected to systemic marginalisation, economically as well as socially.
- **Even children** are involved in such work paving way for increased child labour and lack of education.

Success story of Pune's women-driven SWaCH model:

- The Kagad Kach Patra Kashtakari Panchayat (KKPKP) — a trade union of informal waste-pickers and waste-buyers in Pune and Pimpri-Chinchwad was formed in 1993 and got occupational identity in 2007. SWaCH is a joint project of KKPKP and the Pune Municipal Corporation (PMC) — the first such entity created through municipal action.
- Today, KKPKP has over 9,000 members, 80 per cent of whom are women from socially backward and marginalised castes. SWaCH has over 3,000 worker-members (all women), who provide door-to-door waste collection services (in exchange for fees paid by each household), sort the waste and drop off non-recyclables at city-run feeder points.
- They also earn by selling recyclables to local scrap dealers. Members are provided with identification cards that are endorsed by PMC, which also provides members with identity cards that allow them to avail benefits, such as interest-free loans and educational support for their children. PMC also provides safety gear, raincoats, footwear, uniforms and collection equipment.
- SWaCH has become a classic model reflecting direct user fee counting for transparency, accountability, efficiency, relationship with citizens and women empowerment.

Way Forward:

- There is lack of clear and comprehensive laws and policies to protect the rights of waste-pickers in India. There is an urgent need to frame and implement a uniform waste-picker welfare law that recognizes and integrates them into the waste management chain.
- The law must include basic provisions related to mandatory identity cards; access to waste for collection, segregation, and sorting; PPE to minimise occupational hazards; right to basic necessities like water, sanitation and facilities for clean living; and health insurance.

Centralization of India's Fiscal Federalism and its consequences

What is Fiscal Federalism?

- It refers to how federal, state and local governments share funding and administrative responsibilities within our federal system.

Background of India's Fiscal Federalism

- The Government of India Act, 1935 was more Federal in nature than the Constitution adopted on January 26th, 1950, as the GOI Act, 1935 offered more power to its provincial governments.
- India was a 'holding together federalism' in contrast to the 'coming together federalism,' in which smaller independent entities come together to form a federation (as in the United States of America).
- B.R. Ambedkar in Constituent Assembly said "In politics we will have equality and in social and economic life we will have inequality. These conflicts demanded attention: fail to do so, and those denied will blow up the structure of political democracy."
- Anticipating this **threat of centralisation**, the Tamil Nadu government, constituted a committee under **Justice P.V. Rajamannar in 1969**, the first of its kind by a State government. The committee looked at **Centre-State fiscal relations** and recommended more transfers and taxation powers for regional governments.

Present structure of Fiscal Federalism

- India's fiscal transfer worked through two pillars, the Planning Commission and the Finance Commission. Ever since the abolition of the Planning Commission, the Finance Commission became the major means of fiscal transfer.

What is the status of State's revenues and expenditure?

- The ability of States to finance current expenditures from their own revenues has declined from 69% in 1955-56 to less than 38% in 2019-20.
- While the expenditure of states has been increasing, but their revenues did not.
- States cannot raise tax revenue because of curtailed indirect tax rights (under GST). Their revenue has been stagnant at 6% of GDP in the past decade.

Instances that hamper Fiscal Federalism in India

- The states have lost the autonomy to decide the tax rates of the subjects that fall under state list after the introduction of GST. The inability of states to fix tax rates to match their development requirements implies greater dependence on the centre for funds.
- Even the increased share of devolution, mooted by the Fourteenth Finance Commission, from 32% to 42%, was subverted by raising non-divisive cess and surcharges that go directly into the Union kitty. This non-divisive pool in the Centre's gross tax revenues shot up to 15.7% in 2020 from 9.43% in 2012, shrinking the divisible pool of resources for transfers to States.
- Instead of strengthening direct taxation, the Union government slashed corporate tax from 35% to 25% in 2019 and went on to monetize its public sector assets to finance infrastructure.
- States are forced to pay differential interest about 10% against 7% by the Union for market borrowings. The Centre has been setting the limits on the market borrowings of States under Article 293 of the constitution. This goes against their autonomy.
- During Covid-19, the central government suspended the MPLAD scheme and diverted that money to the Consolidated Fund of India leading to the centralization of the country's financial resources.
- The issue of Centrally sponsored schemes (CSSs) where state's expenditure pattern was distorted by the Centre's involvement. There are 131 CSSs and states are required to share a part of the cost, most of the CSSs are driven by one-size fits all approach and are given precedence over state schemes. This undermines the electoral mandate by which state government's come to power.

Consequences of Centralization of Fiscal measures

- **Undermines democratically elected mandate and autonomy of states** - By turning States into mere implementing agencies of the Union's schemes, their autonomy has been curbed. It also undermines the electorally mandated democratic politics of States.
- **Lower Tax to GDP Ratio** - India has a poor record of taxing its rich. Its tax-GDP ratio has been one of the lowest in the world (17%) which is well below the average ratios of emerging market economies and OECD countries' about 21% and 34%, respectively.
- **Increased inequality** - The poorest half of the population has less than 6% of the wealth while the top 10% nearly grab two-third of it' (World Inequality Report)
- **Impedes states from their charting their own path to development** - Due to diversion of states resources for implementing CSSs.

What steps can be taken to ease the tensions?

- Working on the recommendations of the **15th Finance Commission** can be one way. Following are the recommendations:
 - GST Council and the Finance Commission working need to be coordinated to optimize revenue targets.
 - Giving Permanent status to Finance Commission.
 - Relook at the 7th schedule by re-examination of entries of List I and List III as per changes in the polity, technology, and aspirations of society.
 - Effective devolution of funds to local bodies through measures like more taxation powers, reforming the functioning of state finance commissions.

- The **Punchi Commission** in as early as 2007 made some recommendations for better **Centre-State fiscal relations**:
 - Minimizing discretionary transfers, particularly those channeled through CSS.
 - Expenditure liabilities on States for implementation of Central legislation should be fully borne by the Central Government.
 - Ceiling on professional tax should be completely done away with.
 - State-specific targets of fiscal deficit in the FRBM legislation of States.
- Reviving institutions like the Inter-State Council after the abolition of the planning commission will rebuild institutional capital.

Way Forward

- India's fiscal federalism driven by political centralization has deepened socio-economic inequality, belying the dreams of the founding fathers who saw a cure for such inequities in planning.
- Thus only a buoyant tax system by increasing tax compliance and reviewing GST continuously can ease the battle for resources in our federal system.
- Mechanisms like the GST council will help nudge from competition to coordination over control of resources between union and states and minimize the mistrust that has grown in recent years.

SC verdict on PMLA fails to protect personal liberty from Draconian provisions

News: The Supreme Court in Vijay Madanlal Choudhary and Ors versus Union of India case upheld the provisions of the PMLA (Prevention of Money Laundering Act).

What is PMLA?

- After the 9/11 attacks, the attention of the world turned to terror financing. After establishing the Financial Action Task Force (FATF), India was under pressure to deal with terror financing issues.
- Thus, the Prevention of Money Laundering Act (PMLA) was enacted to deal with money laundering.
- The law was enacted to combat money laundering in India and has three main objectives - To prevent and control money laundering, to provide for confiscation and seizure of property obtained from laundered money and to deal with any other issue connected with money-laundering in India.
- It was enacted in response to India's global commitment (including the Vienna Convention) to combat the menace of money laundering.
- The Enforcement Directorate is empowered to conduct a Money Laundering investigation.

What is Money laundering?

- Money Laundering refers to converting illegal earned money into legitimate money.
- The government does not get any tax on the money because there is no accounting of the black money. So Money Laundering is a way to hide the illegally acquired money.
- In India, "money laundering" is popularly known as Hawala transactions.

How is PMLA in India different from other International counterparts?

- Money laundering in the Indian context is linked to or is seen as a byproduct of a host of both grave and routine offences that are appended to the PMLA as scheduled ones.
- These 'scheduled' or 'predicate' offences ought to be ideally limited to grave offences such as terrorism, narcotics smuggling, corruption and serious forms of evasion of taxes and duties.
- But, in practice, the list contains offences such as fraud, forgery, cheating, kidnapping and even copyright and trademark infringements.

What are the concerns associated with PMLA?

- The Enforcement Case Report (the analogue of an FIR) is not shared with the accused, either he is informed whether he is summoned as witness or accused. Nor the full grounds of arrest shared with the accused.
- The definition of crime under this Act is almost infinitely elastic, what counts as money laundering crimes include everything in the kitchen sink. The sovereign has immense latitude to define what counts as the relevant crime. It can also in a classic instance of rule by law change the presumption of innocence.

- The punishments under PMLA may potentially be excessively punitive, in disproportion to the crime.
- The conviction rate under PMLA is very low, less than 0.5%. But every year thousands of cases are registered, people are arrested, and lives are turned upside down.
- The list of crimes included in the PMLA overrides similar crimes in other parts of the law. It can override the safeguards of the Criminal Code of Procedure.
- The burden of proof is on the accused. Under Indian conditions, the process of proving innocence itself is the punishment.
- The Enforcement Directorate has been manifestly selective in opening money-laundering probes, rendering any citizen vulnerable to search, seizure, and arrest at the whim of the executive. Thus, government of the day might use the ED against political opponents.
- The law itself has been enacted by dubious means as it was passed as money bill. One cannot determine whether the parliamentary procedure under which the law was enacted was itself proper.

What is the way forward?

- The ED's expanded powers should be welcomed with a greater commitment to expeditiously resolve the cases, so both the judiciary and enforcement agencies can move forward with speedy trials and convictions.
- Government needs to look into major issues concerning the lower conviction rate and make sure the law is not misused.

Taiwan – A new conflict zone?

News: The visit by US speaker Nancy Pelosi to Taiwan is not being well received by China. It has sparked intense tensions between the two powerful countries- China and US as China sees Taiwan as a breakaway province.

About Taiwan:

- Previously known as Formosa, Taiwan is a tiny island off the east coast of China, separated from mainland China by the Taiwan Strait. It's part of what's called the first Island Chain – a string of islands nations, including Japan, South Korea and Philippines that are seen as pro-US.
- Much of the world's global supply chain of semiconductors is reliant on Taiwan.
- Further, its contract manufacturers together accounted for more than 60% of total global semiconductor revenue in 2021.
- According to the World Population review, around 13 countries recognize Taiwan as a country. They are Belize, Guatemala, Haiti, Vatican City, Honduras, Marshall Islands, Nauru, Palau, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and Grenadines and Tuvalu.

Why Taiwan matters to China?

- Chinese and Taiwan economies are interdependent on each other.
- China is Taiwan's biggest export partner, with an export value of 515 billion dollars from 2017 to 2022, more than double the US, which was the next biggest partner.
- Taiwan is much closer to mainland China than the other islands, and has been claimed by Beijing since Nationalists were driven there during the Chinese revolution in 1949.
- Some have seen Russia's invasion of Ukraine as a potential catalyst for a China-Taiwan conflict



Significance of Taiwan for the USA:

- Taiwan anchors a chain of islands which includes a list of US-friendly territories that the US is planning to use as a place of leverage for countering China's expansionist plans.
- The United States does not have official diplomatic ties with Taiwan but is bound by US law (Taiwan Relations Act, 1979) to provide the island with the means to defend itself.
- It is by far the largest arms dealer for Taiwan and follows a 'strategic ambiguity' policy.

What is the First Island Chain?

- The First Island Chain comprises the Kuril Islands, the Japanese Archipelago, Ryukyu Islands, Taiwan, northwest Philippines and ending at Borneo.
- This chain is also the first line of defence and serves as the maritime boundaries between the East China Sea and the Philippine Sea and the South China Sea and the Sulu Sea.
- In this chain are located the Bashi Channel and the Miyako Strait which are critical chokepoints for China.
- China's maritime strategy, or the "Island Chain Strategy," is a geographical security concept crafted by the United States in the 1940s to deter China and the Soviet Union's maritime ambitions.

What is the One China principle and One China Policy?

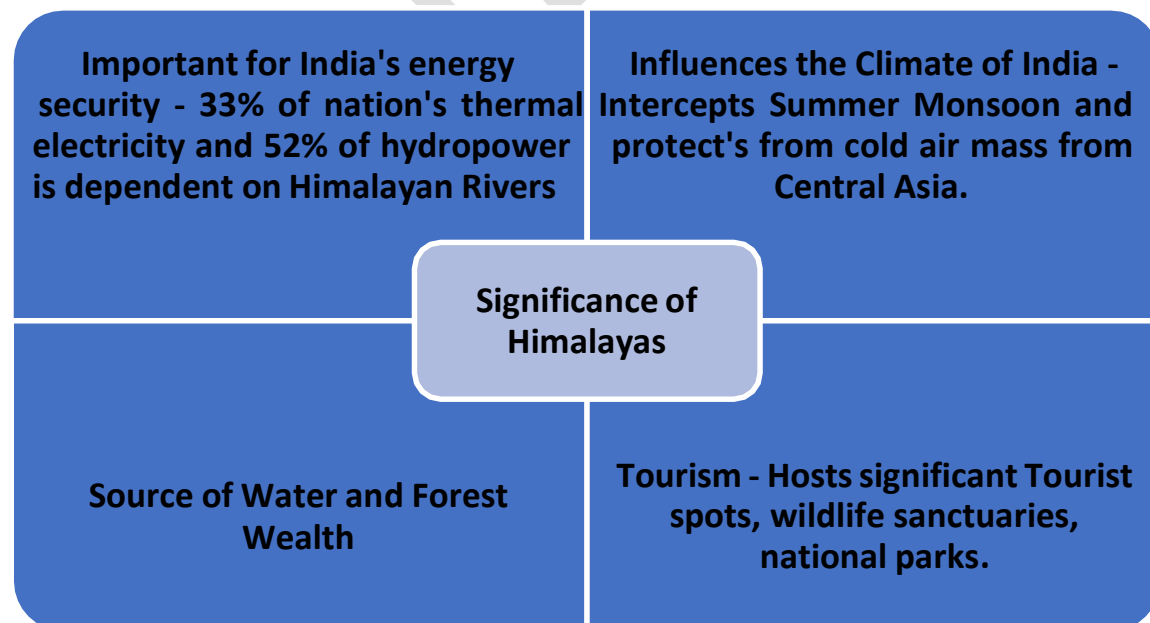
One China Principle	One China Policy
The People's Republic of China follows the One China Principle, a core belief that sees Taiwan as an inalienable part of China, with its sole legitimate government in Beijing.	The US follows the One China Policy which means that The People's Republic of China was and is the only China, with no recognition for the Republic of China (Taiwan), as a separate sovereign entity.
The US acknowledges this position but not necessarily validates it.	The US refuses to give in to the PRC's demands to recognize China's sovereignty over Taiwan.

What about India's stand?

- India and Taiwan do not have formal diplomatic relations but since 1995, both sides have maintained representative offices in each other's capitals that function as de facto embassies.
- Since 1949, India has accepted the One China policy that accepts Taiwan and Tibet as part of China.
- However, India uses the policy to make a diplomatic point, i.e. if India believes in "One China" policy, China should also believe in a "One India" policy.
- Even though India has stopped mentioning its adherence to One China policy in joint statements and official documents since 2010, its engagement with Taiwan is still restricted due to the framework of ties with China.

Indian Himalayan Region and Unsustainable Tourism

The Indian Himalayan Region (IHR) is known for its giant peaks, the rich cultural heritage it hosts, its rivers and the livelihood it provides to people living within the region. Its potential has turned tourism into a key driver of socio-economic development. For local people, the Himalayas acts as a source of economic and business opportunities and for the government and private enterprises it brings revenues and profits. However, the current model of tourism comes with its challenges and limitations that need equal attention.



What are the challenges faced by the region?

- The important cities of Himalayas are facing the same problems that cities in mainland India face. It includes garbage, plastics, untreated sewage, urban poverty, air pollution. There are no decentralized facilities to dispose the junk in a safe manner.
- Melting ice and snow due to climate change form new glacial lakes, as well as increase the volumes of existing ones. This could raise the threat of glacial-lake outburst floods. Some 8,800 glacial lakes in the Himalayas are spread across nations, and more than 200 of these have been classified as dangerous.
- The development of hydroelectricity is important as it provides the country with a renewable source of energy and is a revenue source for the state. But it is also clear that the impact of the flood is exacerbated because of the number and poor construction of the hydropower projects.
- Our mountains are treated only as tourist destinations without realizing that over draining resources beyond a point can be disastrous. Also, mountains also have their own microclimate. Its unique fauna and flora have a short reproductive time frame and are sensitive to disturbance. Unsustainable tourism can upset the natural balance.

What can be the way forward?

- The state should encourage tourism, but the goal should be responsible tourism, which means that before opening up new tourism areas, an assessment of the effect of such endeavors must be conducted.
- The need of the hour is to work on a Pan-Himalayan strategy so that states can evolve common policies. The National Mission on Sustaining Himalayan ecosystem is a step forward in the right direction.
- The building design of towns associated with the Himalayan region must reflect the local ecosystem while incorporating seismic fragility and aesthetics. Unmanaged and unchecked urban growth should not be permitted. All this will require strong regulatory institutions in these towns.
- There is a need to design sustainable hydropower projects to maximize the use of available water for energy generation. Rivers cannot and must not be re-engineered, but dams can be re-engineered to maximize use of available water.
- Protected areas in Himalayan region like Hemis National Park and Karakoram Sanctuary in Ladakh require vigilance and regular patrolling to reduce unwanted wildlife-tourist interaction as well as habitat destruction due to off-road driving and encroachment.
- The Uttarakhand Flood 2013 teaches us that we must learn to build sustainable models for pilgrim-based tourism in the fragile hills. The move towards ecotourism needs to be promoted carefully so that best practices can be learnt and disseminated.

Understanding Ethanol Blending

What is ethanol blending?

- Ethanol is an agricultural by-product which is mainly obtained from the processing of sugar from sugarcane, but also from other sources such as rice husk or maize.
- Blending ethanol with petrol to burn less fossil fuel while running vehicles is called Ethanol Blending.
- Currently, Ethanol makes up 10% of the petrol we use in our vehicles. The original target for India was to raise this ratio to 20% by 2030, but that deadline was pushed back to 2025 when the NITI Aayog released its ethanol roadmap in 2021.

What is the need for ethanol blending?

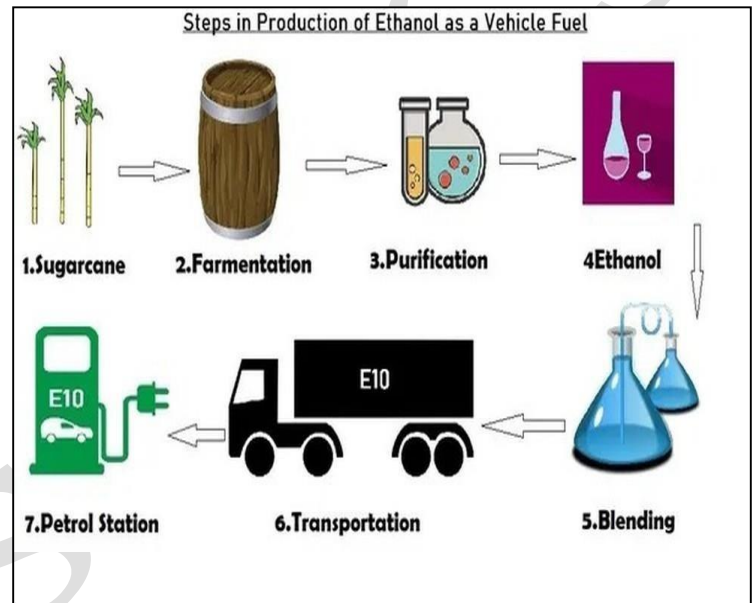
- Substantial rise in energy demand of the country due to a growing economy, rising population, increasing urbanization, changing lifestyle, meeting climate targets as a part of international commitment.
- About 98% of the fuel requirement in the road transportation sector is currently met by fossil fuels and the remaining 2% by biofuels.
- Blending locally produced ethanol with petrol will help India strengthen its energy security, enable local enterprises and farmers to participate in the energy economy and reduce vehicular emissions.

Importance of ethanol blending for our country:

- Ethanol blending will help bring down our share of oil imports on which India spends a considerable amount of precious foreign exchange. It is estimated that a 5% blending (105 crore litres) can result in replacement of around 1.8 million barrels of crude oil.
- As we increase ethanol blending it will help farmer's boost their income and minimize air pollution from stubble burning. Therefore, farmers will also contribute in sustainable growth of the nation in addition to increasing their incomes.
- The renewable ethanol content is expected to result in a net reduction in the emission of carbon dioxide, carbon monoxide (CO) and hydrocarbons (HC). Ethanol itself burns cleaner and burns more completely than petrol it is blended into.
- It will result in fewer vehicular emissions as compared to before.

Challenges that come across during ethanol blending:

- **It will lead towards rise in production of sugar** – While the move may help farmers in general but it comes at other costs as well. In order to achieve 20% blend rate, almost one-tenth of existing net sown area will have to be diverted for sugarcane production. It will put stress on other crops and there are chances it will increase food prices.
- **Food Insecurity** – The more sugar and cane production that ends up in our petrol tanks, the lesser it will appear on our dinner plates, as fodder for animals or for export purposes.
- **Storage issues** - Annual capacity of required bio-refineries is stipulated to be 300-400 million litres, which is still not enough to meet the 5% petrol-ethanol blending requirement.
- **No subsequent reduction in Nitrous oxide emission** – As ethanol burns more completely than petrol, it avoids emissions such as carbon monoxide. However, there is no reduction in nitrous oxides, one of the major environmental pollutants.
- **Inter-state transport issues** - There are restrictions on inter-state movement of ethanol due to non-implementation of the amended provisions of Industries (Development & Regulation) Act, 1951 by all the States. Ethanol blending has not been taken up in North-East states due to non-availability of feedstock or industries.



What can be the Way forward?

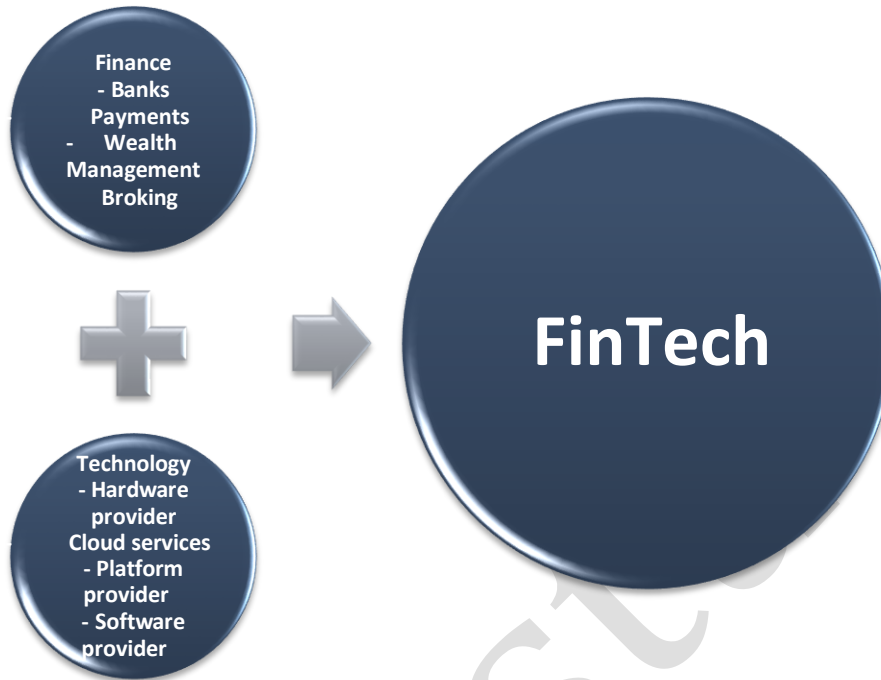
- In order to enable a Pan-India roll-out, ethanol would need to be supplied from surplus to deficit states as per requirements so as to ensure uniform availability of ethanol blends in the country.
- Technology for production of ethanol from non-food feedstock, called “Advanced Biofuels” including second generation (2G) should be promoted so as to tap this abundantly available resource without causing any trade off with the food production system. Ethanol produced from **rice straw, wheat straw, corn cobs** and other such materials falls under the category of second generation (2G) ethanol.
- A system for single window clearances should be formulated to accord speedy clearances for new and expansion projects for ethanol production.

India's biofuel policy stipulates that fuel requirements must not compete with food requirements and that only surplus food crops should be used for fuel production. Producing ethanol from crop residue will then be a good alternative.

Regulate Fintech, but with care

What is Fintech?

- The term Fintech is a contraction of the words 'finance' and 'technology'. It is an umbrella term to denote technological innovation having a bearing on financial services (retail banking, financial literacy, investment and also cryptocurrency)



What is the potential of Indian Fintech Industry?

- It is valued at **\$50 – 60 Bn in FY20**. According to a **Boston Consulting Group report**, Indian fintech companies will reach a valuation of **US\$ 150- 160 Bn by 2025**.
- The fintech adoption rate in India is around 87% in March 2020, compared to global average of 64%.
- India has 3rd largest Fintech ecosystem globally.

What are the types of regulation in Fintech?

- **Activity-based regulation** – Here, identical actions are regulated equally regardless of the legal status or type of the entity doing the activity.
- **Entity-based regulation** - which requires laws to be applied to licensed firms engaged in comparable and specified activities, such as deposit taking, payment facilitation, lending, and securities underwriting, among others.
- **Outcome-based regulation** - where firms are required to ensure certain fundamental, common, and technology related aspects.

What are the concerns surrounding regulation of Fintechs in India?

- Regulation is a major problem in the emerging world of FinTech, especially cryptocurrencies. In most countries, they are unregulated and have become fertile ground for scams and frauds.
- Due to the diversity of offerings in FinTech, it is difficult to formulate a single and comprehensive approach to these problems.
- Regulatory uncertainty in the FinTech sector is making things complicated for both FinTech service providers and consumers.
- The absence of an overarching regulatory framework for FinTechs have created multiple points of ambiguity in the system for companies, investors and consumers.

- Being away from the radar of the regulator, a number of unethical practices in lending have also been reported. Brutal collection methods, opaque lending practices, miss-selling of products, customer harassment are some of the instances.

What should be the right approach to regulate?

- **Ensure level playing field between bigtechs and banks**
 - The real challenge for FinTech comes from Bigtechs, which have primary businesses in non-financial sectors such as social media, telecommunications, Internet search and e-commerce. They are well-positioned to acquire a major part of the financial services sector. It is important for the policymakers to focus on Bigtechs and ensure a level-playing field between Bigtechs and banks, considering the former's wide customer base, access to information and broad-ranging business models.
- **Comprehensive regulatory framework**
 - A sensible regulation with transparency will strengthen the sector in the long run and facilitate the Indian economy in growing at its potential rate by allowing its growth drivers to fuel the engine of economic advancement.
 - A more constructive approach from RBI would be to recognize the part FinTechs play in India's financial inclusion agenda and establish a regulatory framework that will remove the current ambiguities while giving FinTech's sufficient flexibility to ideate and innovate new propositions.
- It is extremely important to find the right balance between consumer protection and product innovation. RBI shall prioritize consumer protection in FinTech regulation and this needs to be manifested through the final laws on cryptocurrency and digital lending.

General Studies – 1

Indian Heritage and Culture

1. Indian culture will cover the salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

History

2. Modern Indian history from about the middle of the eighteenth century until the present significant events, Personalities, Issues.
3. The Freedom Struggle — Its various stages and Important contributors / contributions from different parts of the country.
4. Post-independence consolidation and reorganization within the country.
5. History of the world will include events from 18th century such as Industrial revolution, World wars, Redrawing of national boundaries, Colonization, decolonization, Political philosophies like communism, capitalism, socialism etc.— their forms and effect on the society

Society

6. Salient features of Indian Society, Diversity of India.
7. Role of women and women's organization, Population and associated issues, Poverty and developmental issues, Urbanization, their problems and their remedies.
8. Effects of globalization on Indian society.
9. Social empowerment, Communalism, regionalism & secularism.

Geography

10. Salient features of world's physical geography.
11. Distribution of key natural resources across the world (including South Asia and the Indian sub-continent) Factors responsible for the location of primary, secondary, and tertiary sector industries in various parts of the world (including India).
12. Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc., Geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes

History & Culture

Pingali Venkayya

News: As Independence Day draws closer, the PM has changed his social media profile picture to the Indian flag. The Indian tricolour represents the nationalist fervour of over a billion Indians. Pingali Venkayya — the man who designed the Indian national flag — was a freedom fighter, educationist, author and a true patriot.

About:

- Born in a small village near Machilipatnam, Venkayya studied in a Hindu high school in Madras. He would go on to pursue his further education at the University of Cambridge in England.
- He developed a taste for geology and agriculture but was keenly interested in being an educationist, linguist and writer. In fact, Venkayya was fluent in many languages, including Sanskrit, Urdu and Japanese. His fluency in Japanese earned him the name of “Japan Venkayya.”
- At the age of 19, Venkayya joined the army during the Boer war. It was during this stint in the British Army that Venkayya met Mahatma Gandhi in Africa. Their association would last over 50 years.



Evolution of Indian Flag's design:

- He wrote a book titled “**National Flag for India,**” which was published in 1916. The book showcased thirty designs of what could make the Indian flag. Throughout all Congress sessions between 1918 and 1921, he relentlessly put forth the idea of having a flag of our own since that would resonate with the people and develop our own identity.
- In 1921, Venkayya presented the first draft design of the flag to Mahatma Gandhi at the AICC session held at Bezwada.
- The first draft designed by Venkayya had two predominant colours: green and red. On top of them was a spinning wheel of the Gandhi Chakra in blue. Before being accepted as the Congress party's flag, the colour red was replaced with saffron and the colour white was also added. The design of the Chakra was also changed, and it now sat on the white strip between the saffron and green bands. Later, the Gandhi Chakra was replaced by the Ashoka Chakra when the design for the tricolour was finalised.

On July 4, 1963, Venkayya breathed his last. Even as he was drawing his last breaths, his patriotism was very much alive. His last wish was that his body be covered with the Indian flag.

Quit India Movement

News: Every year, on August 8, the country observes the anniversary of the Quit India Movement and pays tribute to the Indian freedom fighters who sacrificed their lives for the country. This year marks 80 years of the Quit India movement.

What led to the Quit India Movement?

- Failure of Cripps Mission
- There was shortage of essential commodities and widespread discontent due to rising prices of salt, rice.
- The sentiments were widely Anti-British, and the masses were demanding complete independence from British government.

- The British assumption of unconditional support from India to the British in World War II was not taken well by the Indian National Congress.

What were different phases of the movement?

- The first phase of the movement had no violence. It began with civil disobedience, boycotts, and strikes that the British Government quickly suppressed. Almost all members of the Congress Committee, including Gandhiji, were arrested and kept in Jail till 1945 without any trial.
- In its second phase, the movement shifted to the countryside. The second phase of the movement took a violent and aggressive turn. Any building or offices which were the symbol of the colonial authority was attacked and destroyed. Communication systems, railway stations & tracks, telegraph poles and wires were also targeted.
- In the last phase of the movement, there was the formation of many independent national or parallel governments in the isolated pockets of the country, such as Ballia, Satara, Tamluk, etc.

Evaluation of the Movement:

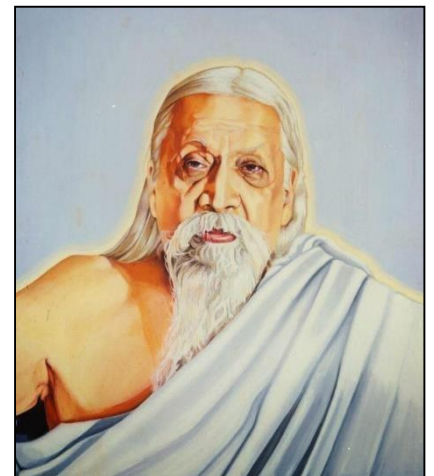
- The movement had the active participation of women of the country. Aruna Asif Ali hoisted the national flag on the Gowalia tank maidan, Usha Mehta, on the other hand, helped set up the underground radio station to spread awareness about the movement.
- The movement also gave some future prominent leaders such as Biju Patnaik, Aruna Asif Ali, Ram Manohar Lohia, Sucheta Kriplani, J.P. Narayan, etc. These leaders were helping the movement through underground activities.
- A greater sense of unity and brotherhood emerged due to the Quit India Movement.
- However, Britishers were supported by the Princely States, British Indian Army, Indian Civil Services, Viceroy's Council (which had Indians in the majority), All India Muslim League, Indian Imperial Police
- The Hindu Mahasabha, the communist party of India, The Muslim league and The Unionist party of Punjab did not support the Quit India movement.
- The movement was violently suppressed by the British – people were shot, lathi-charged, villages burnt and enormous fines imposed. Over 1,00,000 people were arrested and the government resorted to violence in order to crush the agitation.

Shri Aurobindo Ghosh

News: To commemorate the 150th birth anniversary of Shri Aurobindo Ghosh, the central government is holding spiritual programmes from August 12 to August 15, 2022, across 75 prisons in India.

About:

- He was a yogi, seer, philosopher, poet, and Indian nationalist who propounded a philosophy of divine life on earth through spiritual evolution.
- In Pondicherry he founded a community of spiritual seekers, which took shape as the Sri Aurobindo Ashram in 1926.
- Helped establish the **Anushilan Samiti** of Calcutta in 1902.
- He and his brother Barin Ghose contributed articles to the magazine **Jugantar**
- He was also a journalist, editing newspapers such as **Bande Mataram**. In 1914, he started publishing the magazine, **Arya**.
- In May 1908, Aurobindo was arrested in connection with the **Alipore Conspiracy Case**.
- He wrote copiously and his greatest literary achievement was '**Savitri**', an epic poem with about 24000 lines.
- His Yoga is called **Integral Yoga** or **Poorna Yoga**. It is called integral because his yoga is a synthesis of all the Old yogas taken as a base. His yoga starts where the others end.



What were his views on Nationalism?

- Sri Aurobindo Ghosh was considered a prophet of Indian nationalism. Along with Bankimchandra Chatterjee, Tilak and Dayanand Saraswati, he developed the theory of nationalism in India (based on Vedanta Philosophy)
- He declared that India was in fact Mother India which represented the united power and Shakti of millions of her children. Mother India represented the infinite energy of her people.

Some Women freedom fighters invoked by PM in I-Day speech

News: In the Independence Day address to the nation from the ramparts of the Red Fort, Prime Minister Narendra Modi hailed "Nari shakti", and paid tribute to various women leaders.



Durgavati Devi

- Member of Naujawan Bharat Sabha
- Helped Bhagat Singh escape in disguise after killing officer John P Saunders.



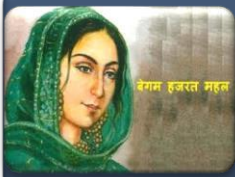
Rani Laxmi Bai

- Queen of Jhansi, Participated in First war of Independence
- Refused to cede territory to British due to Doctrine of Lapse



Rani Gaidinliu

- Naga spiritual leader who fought British
- Associated with Heraka religious movement
- Just 16 years old when sentenced to life, later released in 1947 Begum Hazrat Mahal



Begum Hazrat Mahal - After her husband was exiled, she took on British and managed control over Lucknow



Rani Velu Nachchiyar - She went on to produce the first human bomb as well as establish the first army of trained women soldiers in the late 1700s



Rani Chenamma - Queen of Kittur, amongst the first ruler to lead armed revolt against British. She defeated them in first revolt but was imprisoned during second time.

Lord Curzon

News: The Bardhaman municipality, West Bengal has decided to erect a statue of an erstwhile maharaja in front of the landmark Curzon Gate in the city. It is the statue of Bardhaman's Maharaja Bijay Chand Mahatab and his wife Radharani. Mahtab had built the gate in 1903 when Curzon visited the town.

Who was Lord Curzon?

- He served as Under-Secretary of State for India (1891-1892), and for Foreign Affairs (1895-1898), before being appointed Viceroy of India in 1899.
- Of all the Viceroys of India, Curzon is possibly the most criticized. He was the one who partitioned Bengal in 1905, and triggered a wave of Bengali nationalism that contributed to the wider Indian national movement. He was also one of the more openly imperialist of viceroys, and a man who saw Britain's rule over India as critical to the survival of the empire.
- In 1900, Curzon famously stated, "We could lose all our [white settlement] dominions and still survive, but if we lost India, our sun would sink to its setting."



What were some of the reforms of Lord Curzon?

- **Educational reforms** - Curzon brought in the **Indian Universities Act of 1904**, which brought all the universities in India under the control of the government.
- **Administrative reforms** - He instituted a **Police Commission in 1902** under the chairmanship of Sir Andrew Frazer.
- **Military reforms** - **Imperial cadet corps** was set up which became an instrument for the Indianisation of the army later.
- He passed a law called the **Ancient Monuments Act, 1904** which made it obligatory on the part of the government and local authorities to preserve monuments of archaeological importance and their destruction an offence.
- The **Agriculture Research Institute** in Pusa (Bihar - Bengal Presidency) was established.
- During the Curzon regime, the Northwest Frontier Province (NWFP) was established which covered roughly the areas of the upper course of the River Indus.
- **Afghan policy** - Lord Curzon's Afghan policy was conditioned by the political and economic interests, fear of Russian expansion in Central Asia and Persian Gulf area. From the very start there was an estrangement of relations between Afghans and the British.
- **The Calcutta corporation act, 1899** was passed during his tenure. The act reduced the number of elected legislatures and increased the number of nominated officials to deprive Indians from self-governance.

Pandurang Sadashiv Khankhoje

News: Lok Sabha speaker, Om Birla will travel to Mexico to unveil the statues of Swami Vivekananda and Maharashtra born freedom fighter and agriculturist Pandurang Khankhoje. The Speaker's visit is part of India's efforts to honor lesser-known Indian-origin leaders outside India.

About:

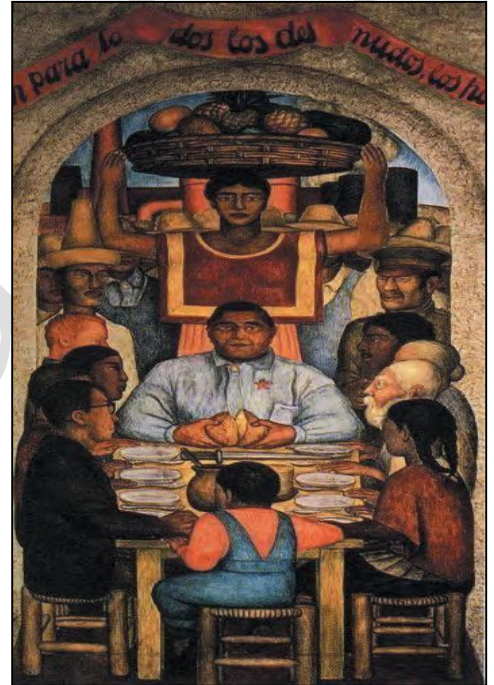
- Pandurang Khankhoje was born in Wardha, Maharashtra, in the late 19th century.
- Pandurang Khankhoje came in contact with other revolutionaries early on. Hindu reformer Swami Dayanand and his Arya Samaj movement, which called for a spirit of reform and social change, became the hero to a young student group led by Khankhoje.
- Khankhoje was an ardent admirer of the French Revolution and of the American War of Independence.
- Before leaving India for training in abroad, he visited Bal Gangadhar Tilak, by who he was inspired.

His life abroad and association with Indian Independence movement:

- Khankhoje decided to go abroad for further training in revolutionary methods and militaristic strategy.
- After spending time with nationalists from Japan and China, Khankhoje eventually moved to the US, where he enrolled in college as a student of agriculture. A year later, he joined the Mount Tamalpais Military Academy in California to fulfil his original purpose of leaving India.
- In the US, Khankhoje met Lala Har Dayal, an Indian intellectual teaching at Stanford University.
- Har Dayal had begun a propaganda campaign, publishing a newspaper that featured patriotic songs and articles in the vernacular languages of India. This was the seed from which the Ghadar Party would emerge.
- He was one of the founding members of the Ghadar Party, established by Indians living abroad in 1913, mostly belonging to Punjab. Its aim was to lead a revolutionary fight against the British in India.

Khankhoje's life in Mexico:

- Khankhoje was inspired by "The Mexican Revolution of 1910" which led to the overthrow of the dictatorial regime. While he was reaching out to Indians working on farms in the US with the aim of discussing the idea of Indian independence with them, he met with Mexican workers as well.
- He reached out to Bhikaji Cama in Paris, and met with Vladimir Lenin in Russia among other leaders, seeking support for India's Independence. He was facing deportation from Europe and he could not go to India, so he sought shelter in Mexico.
- With the help of some friends in Mexico, he was appointed a professor at the National School of Agriculture in Chapingo, near Mexico City. He researched corn, wheat, pulses and rubber, developing frost and drought-resistant varieties, and was part of efforts to bring in the Green Revolution in Mexico.
- Khankhoje was revered as an agricultural scientist in Mexico.
- The renowned Mexican artist Diego Rivera painted murals that featured Khankhoje, including one titled 'Our Daily Bread' that prominently depicted him breaking bread with people seated around a table.



Society

The impact of Social media on young India's mental health

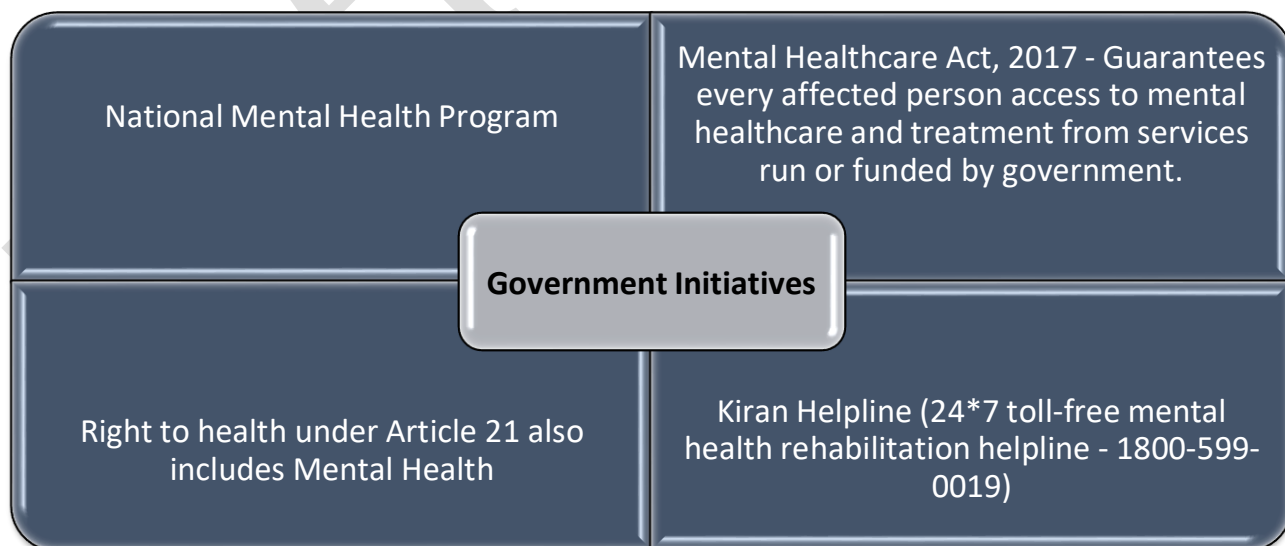
News: The growing dependency on social media is very worrying as its constant use leads to many problems like exposure to risky content, changes in behavioral patterns, inferiority complex, cyber-bullying etc.

What problems can it lead to?

- **Depression** - According to UNICEF, 1 in 7 Indians aged 15 to 24 years feel depressed. Depression is linked to lack of self-esteem, poor concentration and other maladaptive symptoms, and can lead to difficulties in communication, failure to work or study productively, amplified risk of substance use and abuse, as well as suicidal thoughts. One of the key risk factors for these prevalent rates of depression is social media.
- **Lack of socialization** - Increasing screen time on your mobiles especially on Social media takes your time away from doing things that may actually benefit your mental health like connecting with others in person, spending time in nature and taking care of yourself.
- **Body Dysmorphic Disorder** - Body dysmorphic disorder (BDD) is a mental health problem. If you have BDD, you may be so upset about the appearance of your body that it gets in the way of your ability to live normally. Many of us have what we think are flaws in our appearance. But if you have BDD, your reaction to this "flaw" may become overwhelming. Social media has contributed to BDD through comparison, bullying, teasing each other based on their profile pictures, posts and videos.

What are the suggestions?

- Action on mental health needs to be taken seriously. We must monitor the incidence of psychiatric disorders (like depression, anxiety) and identify the factors of risk and resilience.
- Bringing an individual closer to natural things, nature, socialization in family, schools and professional spaces can help.
- Focus on exercise and meditation.
- Need of creating awareness and dialogue that would help in de-stigmatizing the issue, in order to allow autonomy for the individual to share feelings in a safe space.
- Pragmatic government policies based on empirical evidence, strong political will, social inclusion, mental health literacy, vibrant media and a responsive corporate sector coupled with innovative technologies and crowdsourcing could mitigate this apathy.
- There is a need to conduct a disaggregated situational assessment of the diverse young demographic in our country. Such an assessment should keep in mind the differences associated with class, gender and other social factors.



Analysis of WPP's projections on India

News: The World Population prospects report 2022 was released few weeks ago and its findings are very important for policy making and as well for civil services aspirants.

Key Findings:

- India is at the 3rd stage of the demographic transition (DT).
- India is experiencing a slowing population growth rate due to constant low mortality and rapidly declining fertility. Its population growth is further expected to fall to 1% by 2025.
- Many States have not achieved a low TFR, for example Bihar and Uttar Pradesh. The reasons being high illiteracy levels, child marriage, and low contraceptive usage compared to other states. The total fertility rate (TFR) of a population is the average number of children that would be born to a woman over her lifetime
- Male-dominant sex ratio- It is 943 females per 1,000 males (2011). Primary reason being preference for sons and sex selection (both pre-and post-natal)
- The elderly population is now increasing and is expected to be 12% by 2050. This will possess its own challenges for which we need to be prepared from now.

What should we focus on?

- Improve the status of women in Indian society, give her more opportunities to work, invest in her health and give her the decision making powers in family matters.
- It is very important to increase efforts to improve the sex-ratio.
- Advanced investments in the development of a robust social, financial and healthcare support system for the elderly population.
- Extensive investment in human capital like education and health.

"Son Bias" is on a Decline

News: A recent study (Pew Research Center) has reported that "son bias" is on a decline in India and the average annual number of "baby girls missing" in India fell from approx. 4.8 lakh in 2010 to 4.1 lakh in 2019.

Key Findings:

- Sex ratio normalised slightly - From about 111 boys per 100 girls (India's 2011 census) to about 109 (2015-16) and to 108 boys (latest NFHS survey 2019-21)
- Missing females - The Pew Research Center report points out that between 2000-2019, nine crore female births went "missing" because of female-selective abortions.

Key Details about religion wise sex ratio:

- Sex selection was highest among the Sikhs. The study points out that while the Sikhs make up less than 2% of the Indian population, they accounted for an estimated 5% of the nine crore baby girls who went "missing" in India between 2000 and 2019.
- The share of "missing" girls among Hindus is also above their respective population share. Hindus make up 80% of India's population but accounted for an estimated 87% or approximately eight crores of the females "missing" due to sex-selective abortions.
- The share of female births "missing" among Muslims and Christians during this period is lower than each group's share of the Indian population.
- Muslims, who make up about 14% of India's population, accounted for 7%, or approximately 5.9 lakh, of the country's "missing" girls.
- Christians, who make up 2.3% of the population, have had an estimated 0.6%, or about 0.5 lakh, of the total number of sex-selective abortions.

Issues involved in ensuring Balanced birth sex ratio:

- There is considerable son preference in all states, except possibly in Kerala and Chhattisgarh. This son's preference is derived from a regressive mindset. For example, People even in today tend to associate girls with dowry.
- Illiterate women in the reproductive age group of 15-49 years have higher fertility than literate women. Thus, it is extremely important to promote woman education.
- The **Prenatal Conception and Prenatal Determination Act (PC-PNDT), 1994** which punishes healthcare professionals for telling expectant parents the sex of a child with imprisonment and hefty fines, has failed to control the sex selection. Reports found major gaps in the training of personnel implementing PC-PNDT. Poor training meant that they were unable to prepare strong cases against violators to secure convictions.

What needs to be done?

- There is need to educate youth about reproductive health education as well as inculcate in them about gender-equity norms. Services of ASHA workers can be used in remote villages especially where birth sex ratio continue to remain poor.
- The government's Beti Bachao Beti Padhao campaign has contributed to behavioral change in the society. It needs to be further encouraged and improve the education, employment and economic prosperity of the women in India.

Geography

Aridity Anomaly Outlook Index

News: Recently, Indian Meteorological Department (IMD) has released the Aridity Anomaly Outlook (AAO) Index of July 2022, which says at least 85% of districts face arid conditions across India.

About:

- The index monitors agricultural drought, a situation when rainfall and soil moisture are inadequate to support healthy crop growth till maturity, causing crop stress.
- An anomaly from the normal value signifies a water shortage in these districts that could directly impact agricultural activity.

How is the index prepared?

- A real-time drought index in which water balance is considered.
- The Aridity Index (AI) is computed for weekly or two-week periods.
- For each period, the actual aridity for the period is compared to the normal aridity for that period.
- Negative values indicate a surplus of moisture while positive values indicate moisture stress.

What are the Findings?

- Only 63 of 756 districts are non-arid, while 660 are facing different degrees of aridity — mild, moderate and severe.
- Some 196 districts are in the grip of a 'severe' degree of dryness and 65 of these are in Uttar Pradesh (highest). Bihar had the second highest number of districts (33) experiencing arid conditions. The state also has a high rainfall deficit of 45%.
- Other districts facing 'severe arid' conditions are Jharkhand, Haryana, Madhya Pradesh, Delhi, Telangana, Maharashtra, Andhra Pradesh, Jammu and Kashmir, Punjab, West Bengal, Rajasthan, Karnataka and Tamil Nadu.
- The SPI on the DEWS platform also highlights a persisting rainfall deficit in these areas in the last six months.
- Arid conditions have impacted the ongoing kharif sowing, as the area sown under different kharif crops as of July, 2022, was less by 13.26 million hectares compared to the corresponding period in 2021.

What is SPI?

- The Standard Precipitation Index (SPI) is a widely used index to characterize meteorological drought on a range of timescales. On short timescales, the SPI is closely related to soil moisture, while at longer timescales, the SPI can be related to groundwater and reservoir storage.
- The SPI on the Drought Early Warning System (DEWS), a real-time drought monitoring platform managed by the Indian Institute of Technology, Gandhinagar (IIT-G) platform highlights a persisting rainfall deficit in these areas in the last six months.
- UP, Jharkhand, Bihar, West Bengal and some parts of the North East are under extreme drought situation and agriculture of these regions might be affected.

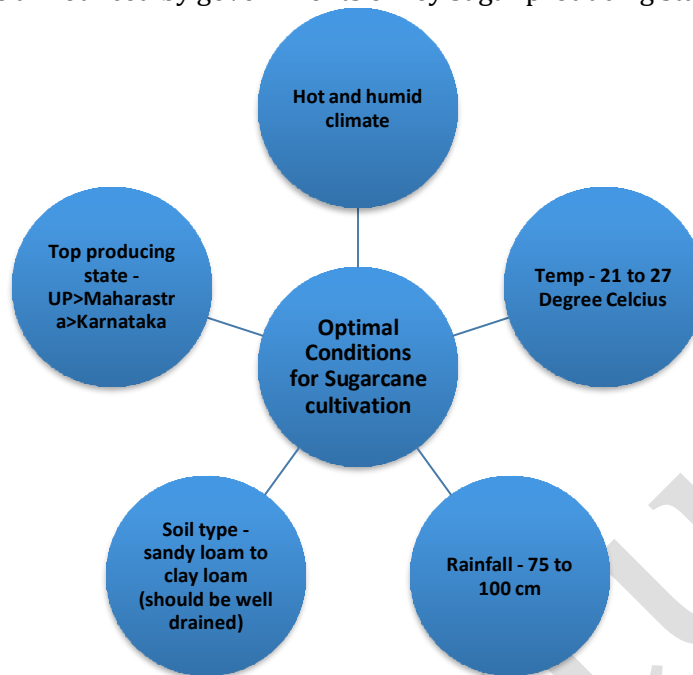
Fair Remuneration Price for Sugarcane

News: The Cabinet Committee on Economic Affairs has hiked Fair and Remunerative Price (FRP) of sugarcane for sugar season 2022-23 (October - September) by Rs 15 per quintal.

How are the prices determined?

- The Prices of Sugarcane are determined by the Central Government and the State Governments.

- The Central Government announces Fair and Remunerative Prices which are determined on the recommendation of the **Commission for Agricultural Costs and Prices (CACP)** and **announced by the Cabinet Committee on Economic Affairs (CCEA)**. CCEA is chaired by the **Prime Minister of India**.
- The FRP is based on the **Rangarajan Committee** report on reorganizing the sugarcane industry.
- The state government announces State advised prices (SAP).
- The SAP is announced by governments of key sugar producing states and SAP is generally higher than FRP.



Reasons why Government is pushing for Sugar production

- The government wants to reduce its Import Bill on Crude Oil by cutting oil imports and blending ethanol with Petrol under the Ethanol Blended with Petrol programme.
- To reduce pollution & to make India self-reliant in petroleum sector, Government is encouraging sugar mills to divert excess sugarcane to ethanol which is blended with petrol, which not only serves as a green fuel but also saves foreign exchange on account of crude oil import.
- The government has fixed a target of 10% blending of fuel grade ethanol with petrol by 2022 & 20% blending by 2025.

Conservation of Coastal Ecosystem - Report by CAG

News: Comptroller and Auditor General (CAG) of India tabled a report in Parliament on whether steps taken by the Union Environment Ministry to conserve India's coastal ecosystems have been successful.

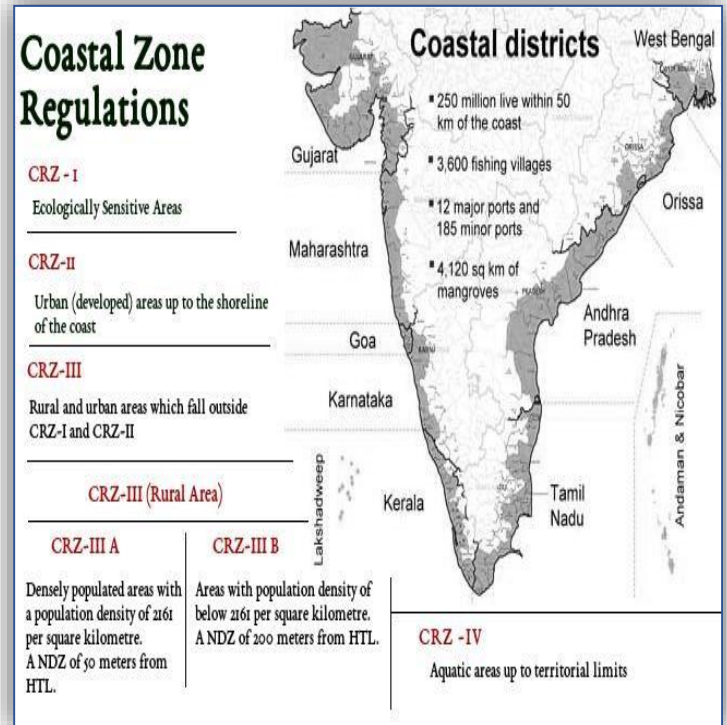
Reasons why CAG conducted the report?

- The CAG has a constitutional mandate to investigate and report on publicly funded programmes.
- The CAG conducted "pre-audit studies" and found that there were large-scale Coastal Regulation Zone (CRZ) violations in the coastal stretches.
- Coastal land up to 500 metres from the High Tide Line (HTL) and a stage of 100m along banks of creeks, lagoons, estuaries, backwater and rivers subject to tidal fluctuations is called Coastal Regulation Zone (CRZ).

- The media reported incidents of illegal construction activities (reducing beach space) and effluent discharged by local bodies, industries, and aquaculture farms that prompted a detailed investigation.

What is center's role in conserving the coastline?

- The government has issued notifications under the Environment Protection Act, 1986, to regulate activities along India's coasts particularly regarding construction.
- The Coastal Regulation Zone Notification (CRZ) 2019, implemented by the Ministry, classifies the coastal area into different zones to manage infrastructure activities and regulate them.
- The institutions responsible for implementation of CRZ are National Coastal Zone management authority (NCZMA), state/union territory coastal zone management authority and District level committees (wherever district has coastal stretch).
- These bodies examine if CRZ clearances granted by the government are as per procedure. They also evaluate the measures taken up by the government towards achieving the targets under Sustainable Development Goals.



Key findings of CAG Performance Audit from 2015-2020:

- The Environment Ministry hadn't notified NCZMA as a permanent body and it was being reconstituted every few years. Thereby impacting in consistency of coastal conservation.
- There were instances of the Expert Appraisal Committees not being present during project deliberations. EAC is a committee of scientific experts and senior bureaucrats who evaluate the feasibility of an infrastructure project and its environmental consequences.
- At state-level where the State Coastal Zone Management Authorities (SCZMAs) take decisions, the central auditor observed the instances where SCZMA granted clearance on its own without recommending the projects to relevant authorities. Further, SCZMAs had recommended many projects without the submission of mandatory documents.
- There were instances of projects being approved despite inadequacies in the Environment Impact Assessment (EIA) reports. These included non-accredited consultants preparing the EIA, using outdated data, not evaluating environmental impacts of the project, not appraising the disasters which the project area was prone to and so forth.

What are state specific issues highlighted by CAG report?

- States haven't yet prepared Integrated Management Plan for Critically Vulnerable Coastal Areas.
- Tamil Nadu didn't have a strategy in place to conserve the Gulf of Mannar Islands.
- In Goa, there was no system for monitoring coral reefs and no management plans to conserve turtle nesting sites.
- In Gujarat, instruments procured to study the physiochemical parameters of soil and water of the inertial area of the Gulf of Kutch weren't used.

New study on Formation of Continents

News: According to a new study, the earth's continents were formed by massive meteorite impacts that were prevalent during the first billion years of our planet's four and a half billion-year history.

Key findings of the study:

- Meteorite impacts generated massive energy to form oceanic plates, which later evolved into continents.
- The theory that giant meteorite impacts formed continents had been around for decades, but until now, there was little solid evidence for its support.
- The **Current theory** is the most commonly accepted theory in place that attributes continent formation to the **movement of tectonic plates**.

What are the evidence of Meteorite impact theory?

- Zircon crystals in Pilbara Craton - The researchers looked for evidence in zircon crystals embedded in rocks from the Pilbara Craton in Western Australia. This craton is the remnant of an ancient crust that began forming more than three billion years ago.
- A craton is an old and stable part of the continental lithosphere, which consists of Earth's two topmost layers, the crust and the uppermost mantle
- "Studying the composition of oxygen isotopes in these zircon crystals revealed a 'top-down' process starting with the melting of rocks near the surface and progressing deeper, consistent with the geological effect of giant meteorite impacts.
- Zircons are formed by the crystallization of magma or are found in metamorphic rocks. They act as tiny time capsules, recording the period of geologic activity. Newer zircon adds to the original crystal as time progresses.

What is the need for understanding the formation of continents?

- Understanding the formation and evolution of continents is important, as it is the key to reserves of metals such as lithium, tin and nickel.
- Most of Earth's biomass and most humans live on these landmasses, so understanding how continents form and evolve is crucial.

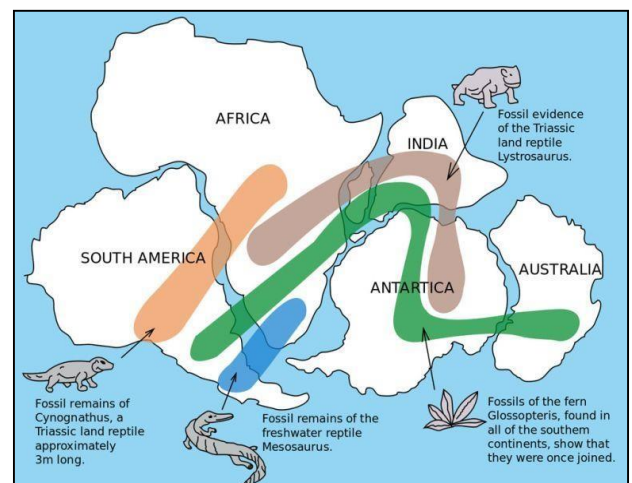
What are the theories related to continent formation?

1. Continent Drift Theory

- Continental drift theory deals with the distribution of the oceans and the continents. It was first suggested by a German meteorologist, Alfred Wegener in 1912.
- According to the theory, all the continents formed a single continental mass- Pangea and mega ocean- Panthalassa surrounded it.
- Around 200 million years ago Pangea started splitting and broke down into two large continental masses as Laurasia and Gondwanaland forming the northern and southern components respectively.
- Subsequently, Laurasia and Gondwanaland continued to break into various smaller continents that exist today.

What evidence support the Continent drift theory?

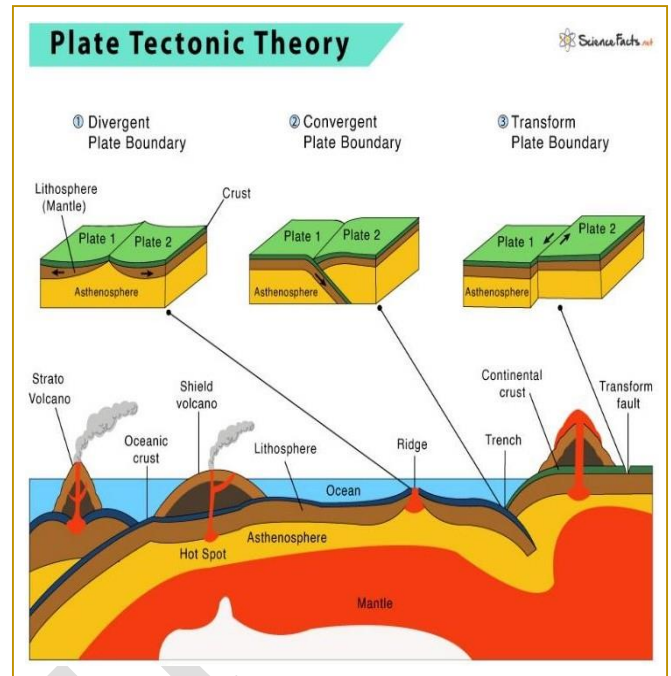
- South America and Africa seem to fit in with each other, especially the eastern bulge of Brazil fits into the Gulf of Guinea.
- Greenland seems to fit in with Ellesmere and Baffin islands.
- The west coast of India, Madagascar and Africa seems to fit.
- North and South America on one side and Africa and Europe on the other fit along the Mid-Atlantic Ridge.
- Alfred Wegener studied fossils of ancient plants and animals, geographical features on the borders of the continent and mineral resources and found similar



results on the boundaries of the other continents.

2. Plate Tectonics Theory

- It was in 1967, Mckenzie and Parker and also Morgan, independently collected the available ideas and came out with another concept termed Plate tectonics.
- A tectonic plate (Lithospheric plate) is a massive, irregularly-shaped slab of solid rock, generally composed of both continental and oceanic lithospheres.
- Plates move horizontally over the asthenosphere as rigid units. The lithosphere includes the crust and top mantle. A plate may be referred to as the continental plate or oceanic plate depending on which of the two occupy a larger portion of the plate.
- The theory of plate tectonics proposes that earth's lithosphere is divided into seven major and some minor plates. These plates have been moving over the globe throughout the history of the earth. It is not the continent that moves as believed by Wegener. Continents are part of a plate and what moves is the plate.



Drought and Italy's Lake Garda

News: Italy's worst drought in decades has reduced Lake Garda, the country's largest lake, to near its lowest level ever recorded.

What is Drought?

- According to the Indian Meteorological Department (IMD), Drought is a result of natural reduction in the amount of precipitation for a long period of time.
- According to IMD, a drought exists when the average annual rainfall is less than 75% of the normal.
- It is associated with climatic factors like high winds and temperature and low relative humidity. They tend to aggravate severity of drought event.

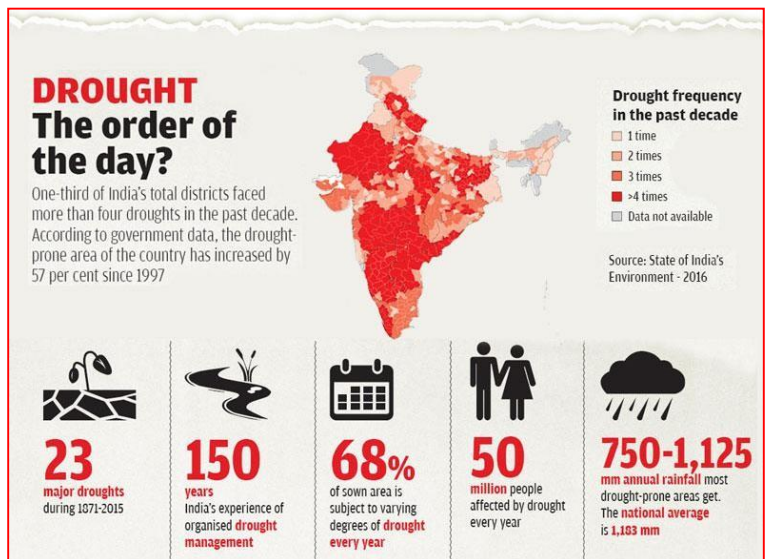
What are the types of Drought?

- **Meteorological Drought** - It is a situation where there is a reduction in rainfall for a specific period below a specific amount i.e. the actual rainfall in an area is significantly less than the climatologically mean of that area.
- **Hydrological Drought** - It is associated with the reduction of water levels. There are 2 types of Hydrological Droughts. Surface water Drought which is concerned with the drying up of surface water resources such as rivers, streams, lakes, ponds, tanks, reservoirs and Groundwater Drought is associated with the fall in the groundwater level.
- **Agricultural Drought** - It occurs when soil moisture goes below the level needed to sustain plant growth. It is also called as Soil Moisture Drought. The erratic rainfall conditions and inadequate soil moisture result in crop failures.
- **Ecological Drought** - It occurs when the productivity of the natural ecosystem fails due to a shortage of water and causes environmental damages like the deaths of cattle, wildlife, and trees in the forest.
- **Socio-economic Drought** - It reflects reduced availability of food and income loss due to crop failure.

Why Droughts continue to occur in India?

- **Erratic Monsoon** - The S-W monsoon accounts for 70 to 80 per cent of the annual rainfall over major parts of India. Failure of monsoons, for reasons like El Nino is the major reason for droughts in India.

- **Depletion of water resources** - Depletion of surface and sub-surface water resources, especially in areas of low yearly rainfall.
- **Skewed distribution of rainfall** - About 73% of rainfall is received in less than 100 days during the S-W monsoon, its geographical spread is uneven for example the leeward side of Western Ghats is chronically prone to droughts.
- Activities such as deforestation and encroachment of wetlands lessen the ability of land to hold water.
- **Global warming and climate change** - Rising temperatures caused by climate change are making already dry regions drier and wet regions wetter.
- **Ineffective cropping patterns** - Increased focus on water guzzling crops due to remunerative nature leads to water depletion.
- **Exploitation of valuable groundwater** - We are not enhancing groundwater recharge. Drought conditions are making us extract more and more water.



Why is Lake Garda shrinking?

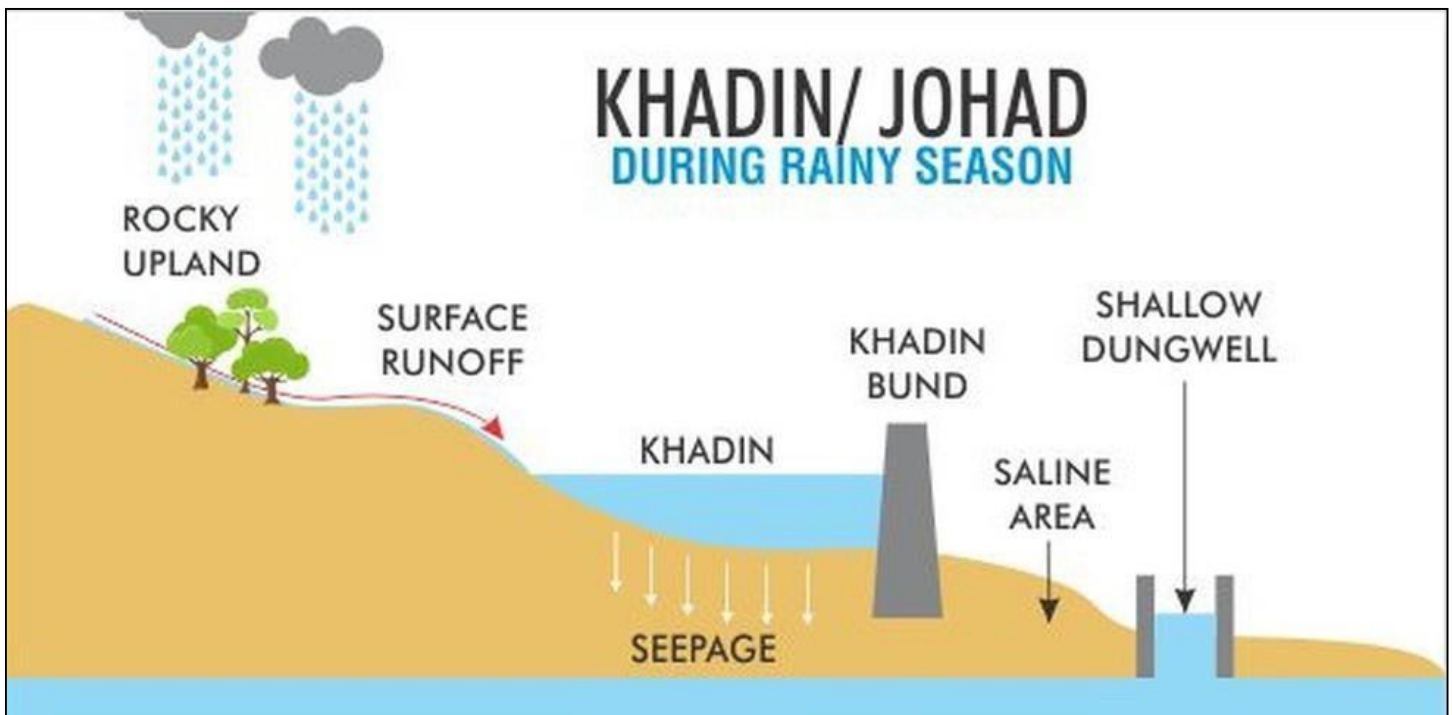
- Northern Italy saw significantly lower rainfall for months, and snowfall in 2022 was also down 70%, drying up important rivers like the Po, which flows across Italy's agricultural and industrial heartland.
- The parched condition of the Po, Italy's longest river, caused billions of euros in losses to farmers who normally rely on it to irrigate fields and rice paddies.
- To compensate for the loss, authorities allowed more water from Lake Garda to flow out to local rivers. But in late July 2022, they reduced the amount to protect the lake and the financially important tourism tied to it.
- With huge amounts of water being diverted to rivers, the lake recorded its lowest level.



What is the way forward as far as India is concerned?

- Building resilient ecosystem which can absorb drought by increasing or maintaining its efficiency to use water to sustain its productivity.
- Focus on groundwater recharge by making rainwater harvesting mandatory to buildings, use of porous paver blocks etc.
- Scientific crop management is the need of the hour. We need to grow crops based on the geographic and climatic conditions that will benefit both the farmer and ecology.

- Practice of Johads in Rajasthan by Rajendra Singh transformed the area from drought hit to water sufficient.



Please note you may use such innovative diagrams or examples in your mains answers to fetch extra marks and make your answer look different from others. Creativity and imagination is the key!

Arctic Amplification and its impact on India

News: Recently, some studies were published on Arctic Amplification, which suggested that the region is fast changing and that the best of climate models may not be able to capture the rate of changes and predict it accurately.

What is Arctic Amplification?

- Polar amplification happens when changes to the earth's atmosphere led to a larger difference in temperature near the north and south poles than to the rest of the world. This phenomenon is measured against the average temperature change of the planet.
- These changes are more pronounced at the northern latitudes and are known as the Arctic amplification.
- It occurs when the atmosphere's net radiation balance is affected by an increase in greenhouse gases.
- As far back as 1896, the **Swedish scientist Svante Arrhenius** hypothesized that **changes in the concentration of carbon dioxide in Earth's atmosphere** could alter surface temperatures. He also suggested **that changes would be especially large at high latitudes**.

Why are temperatures warming faster in the Arctic than the rest of the world?

- The loss of sea ice is one of the most cited reasons. When bright and reflective ice melts, it gives way to a darker ocean, this amplifies the warming trend because the ocean surface absorbs more heat from the Sun than the surface of snow and ice.
- In more technical terms, **losing sea ice reduces Earth's albedo: the lower the albedo, the more a surface absorbs heat from sunlight rather than reflecting it back to space.**
- However, other factors contribute as well, explained Anthony Del Genio, a climatologist from NASA's Goddard Institute for Space Studies. Thunderstorms, for instance, are much more likely to occur in the

tropics than the higher latitudes. The storms transport heat from the surface to higher levels of the atmosphere, where global wind patterns sweep it toward higher latitudes. The abundance of thunderstorms creates a near-constant flow of heat away from the tropics, a process that dampens warming near the equator and contributes to Arctic amplification.

What is its impact on India?

- In recent years, scientists have pondered over the impact the changing Arctic can have on the monsoons in the Indian subcontinent. The link between the two is growing in importance due to the extreme weather events India faces, and the heavy reliance on rainfall for water and food security.
- In 2021 a study (A possible relation between Arctic Sea ice and late season Indian Summer Monsoon Rainfall extremes) was published, which found that the reduced sea ice in the Barents-Kara Sea region can lead to extreme rainfall events in the latter half of the monsoons in September and October.
- The changes in the atmospheric circulation due to diminishing sea ice combined with the warm temperatures in the Arabian Sea contribute to enhanced moisture and drive extreme rainfall events.
- According to the **World Meteorological Organization's report in 2021** (State of Global Climate in 2021) **sea level along the Indian coast is rising faster than the global average rate.** One of the primary reasons for this rise is **the melting of sea ice in the polar regions, especially the Arctic.**

Draft Indian Ports Bill, 2022

News: The draft Indian Ports Bill, 2022 seeks to repeal and replace the existing Indian Ports Act 1908, which is more than 110 years old, becoming imperative that the Act is revamped to reflect the present-day frameworks.

Few facts we must know about Indian ports:

- The Union Government has allowed Foreign Direct Investment (FDI) of up to 100% under the automatic route for port and harbour construction and maintenance projects.
- Major Ports are under the Union list of the Indian Constitution and are administered under the Indian Ports Act 1908 and the Major Port Trust Act, 1963. There are 12 major ports and 200 non-major ports (minor ports) in the country.
- Ports in India are classified as Major and Minor Ports according to the jurisdiction of the Central and State government as defined under the Indian Ports Act, 1908.
- All the Minor Ports are governed under the Indian Port Act, 1908 and are owned and managed by the State Governments.
- India has a 7,500 km long coastline, 14,500 km of potentially navigable waterways and strategic location on key international maritime trade routes.
- About 95% of India's trade by volume and 65% by value is done through maritime transport facilitated by ports.

Key details about the Bill:

- It seeks to amend the laws relating to ports, for the prevention and containment of pollution at ports, to ensure compliance with the country's obligation under the maritime treaties and international instruments to which India is a party
- It seeks to empower and establish State Maritime Boards for effective administration, control and management of non-major ports in India
- It aims to provide adjudicatory mechanisms for redressal of port related disputes and to establish a national council for fostering structured growth and development of the port sector.



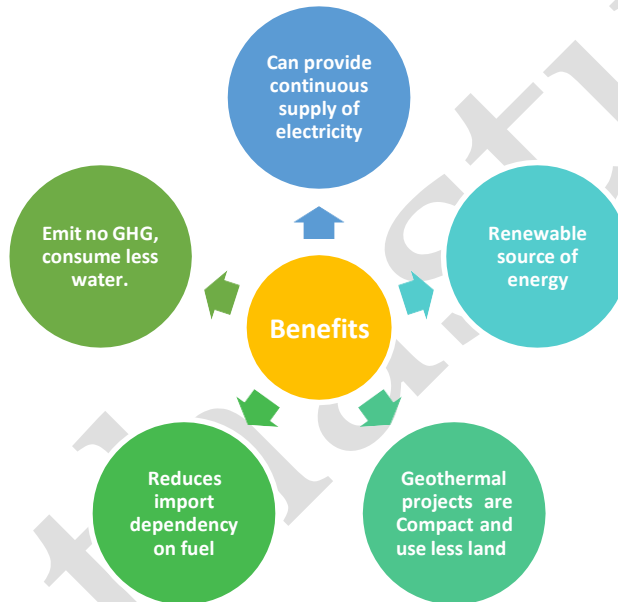
- It will ensure optimum utilization of the coastline of India, as may be necessary, and to provide for matters ancillary and incidental thereto, or connected therewith.

Geothermal Energy project

News: State-run explorer Oil and Natural Gas Corporation (ONGC) will be participating to generate electricity through Geothermal Energy at Puga, Ladakh.

What is Geothermal energy and where can it be used?

- Geothermal energy is the heat from the earth. This heat is used for bathing, to heat buildings, and to generate electricity.
- Hot water or steam reservoirs deep in the earth are accessed by drilling.
- Geothermal reservoirs located near the earth's surface, mostly found in the western U.S., Alaska, and Hawaii.
- Hot water and steam from reservoirs can be used to drive generators and produce electricity for consumers.
- Other applications apply the heat produced from geothermal directly to various uses in buildings, roads, agriculture, and industrial plants.
- The heat can also be used directly from the ground to provide heating and cooling in homes and other buildings.



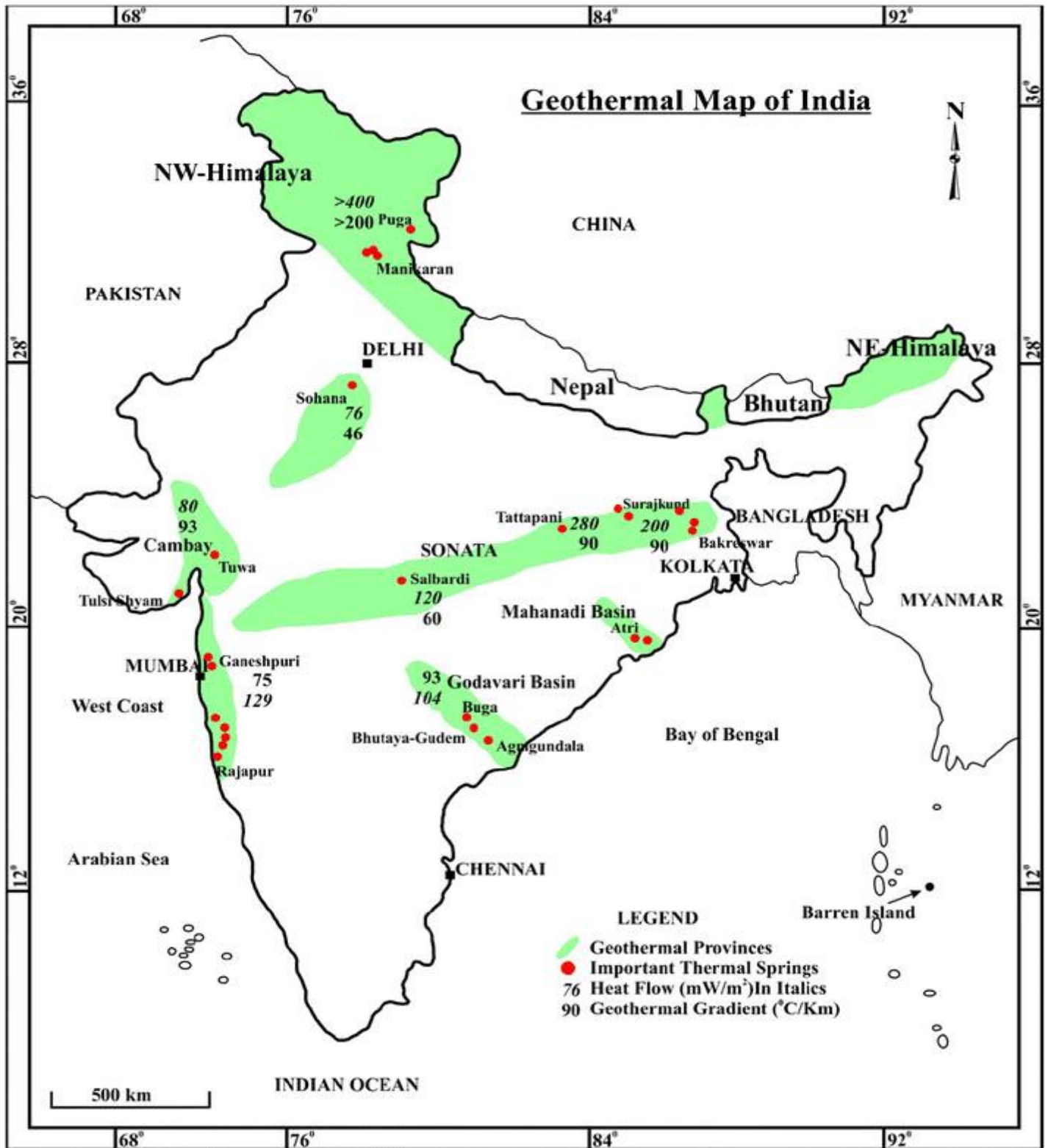
Details about the Puga Valley and Geothermal project:

- Puga Valley is situated in the Changthang Valley in the south-eastern part of Ladakh, about 22 km away from the Salt Lake Valley. It is a region of great significance known for its natural beauty and geothermal activities.
- Puga is also visited for its hot sulphur spring.
- The project will be India's first geothermal energy project and also the World's highest at 14,000 ft.
- It will boost Ladakh's potential as one of the country's clean energy bowl.
- The project will provide heating needs to the settlements of Tibetan refugees.
- A bigger plant will provide 24X7 supply for the far-flung settlements and the large defence establishment in the eastern sector, reducing their dependence on diesel for running generators.

Some facts related to Geothermal energy in India:

- Geological Survey of India has identified about 340 geothermal hot springs in the country. Most of them are in the low surface temperature range from 370C to 900C, which is suitable for direct heat applications.
- The potential for power generation at these sites is about 10,000 MW.

- Important places where geothermal power plants can be established are - Manikaran in Himachal Pradesh, Jalgaon in Maharashtra, Tapovan in Uttarakhand, Bakreshwar in West Bengal and Tuwa in Gujarat. **(These places are important, please remember them for Prelims perspective)**



General Studies – 2

Polity & Constitution

1. Indian Constitution—historical underpinnings, evolution, features, amendments, significant provisions and basic structure.
2. Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein.
3. Separation of powers between various organs dispute redressal mechanisms and institutions
4. Comparison of the Indian constitutional scheme with that of other countries.
5. Parliament and State legislatures—structure, functioning, conduct of business, powers & privileges and issues arising out of these.
6. Structure, organization and functioning of the Executive and the Judiciary—Ministries and Departments of the Government; pressure groups and formal/informal associations and their role in the Polity.
7. Salient features of the Representation of People’s Act.
8. Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional Bodies.
9. Statutory, regulatory and various quasi-judicial bodies.

Social Justice

10. Government policies and interventions for development in various sectors and issues arising out of their design and implementation.
11. Development processes and the development industry —the role of NGOs, SHGs, various groups and associations, donors, charities, institutional and other stakeholders.
12. Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.
13. Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.
14. Issues relating to poverty and hunger.

Governance

15. Important aspects of governance, transparency and accountability, e-governance, applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures.
16. Role of civil services in a democracy.

International Relations

17. India and its neighborhood- relations.
18. Bilateral, regional and global groupings and agreements involving India and/or affecting India’s interests.
19. Effect of policies and politics of developed and developing countries on India’s interests, Indian diaspora.
20. Important International institutions, agencies and fora- their structure, mandate

Polity & Governance

National Anti-Doping Bill, 2021

News: Recently, the Lok Sabha passed the National Anti-Doping Bill 2021 Bill that seeks to create a statutory framework for the National Anti-Doping Agency (NADA).

What is Doping?

- Doping is the consumption of certain prohibited substances by the athletes to enhance performance. When the drug is consumed by the athlete, he gets an unfair advantage over other athletes, thereby banning such drugs shall propagate the level playing field in sports.

Key Features of Bill:

- **Prohibition of Doping** - The Bill prohibits athletes, athlete support personnel and other persons from engaging in doping in sport.
- **Consequences of Violations** - Anti-doping rule violation may result in disqualification of results including forfeiture of medals, points, and prizes, ineligibility to participate in a competition or event for a prescribed period, financial sanctions etc.
- **Statutory backing of NADA** - At present, anti-doping rules were implemented by NADA, which was established as a society. Now, the bill provides for constituting the same as a statutory body. It will be headed by a Director General appointed by the central government.
- The Agency will also have the power to collect certain personal data of athletes such as sex or gender, medical history, and whereabouts information of athletes (for out of competition testing and collection of samples).
- The Bill establishes a National Board for Anti-Doping in Sports to make recommendations to the government on anti-doping regulation and compliance with international commitments on anti-doping.
- The Board will constitute a National Anti-Doping Disciplinary Panel for determining the consequences of anti-doping rule violations. This Panel will consist of a Chairperson and four Vice-Chairpersons (all legal experts), and ten members (medical practitioners and retired eminent athletes).
- The existing National Dope Testing Laboratory will be deemed to be the principal dope testing laboratory. The central government may establish more National Dope Testing Laboratories.

Significance of the Bill:

- The bill attempts to achieve, time-bound justice to athletes, apart from enhancing cooperation among agencies in fighting doping.
- It is also an attempt to reinforce India's commitment to fulfil international obligations for clean sports.
- The bill would help in establishing a robust, independent mechanism for anti-doping adjudication.
- The bill also would lend legal sanctity to the functioning of NADA and National Dope Testing Laboratory (NDTL).

Certain issues with the Bill:

- The qualifications of the Director General are not specified in the Bill and are left to be notified through Rules.
- The central government may remove the Director General from the office on grounds of misbehavior or incapacity or "such other ground". Leaving these provisions to the discretion of the central government may affect the independence of the Director General.
- This also goes against the mandate of the World Anti-Doping Agency that such bodies must be independent in their operations.
- Under the Bill, the Board has powers to remove the members of the Disciplinary Panel and Appeal Panel on grounds which will be specified by regulations and are not specified in the Bill. There is no requirement to give them an opportunity of being heard. This may affect the independent functioning of these panels.

The Bill is another step in India's quest to become a sporting powerhouse. In addition to the bill, necessary steps must be taken to educate, empower and train our athletes to participate with utmost transparency and honesty.

The Annual review of State Laws, 2021

News: Recently, a report titled "The Annual Review of State Laws, 2021" was released by PRS Legislative Research. As per the report, Kerala got first place in 2021, with its House sitting for 61 days, the highest for any State.

Key Findings:

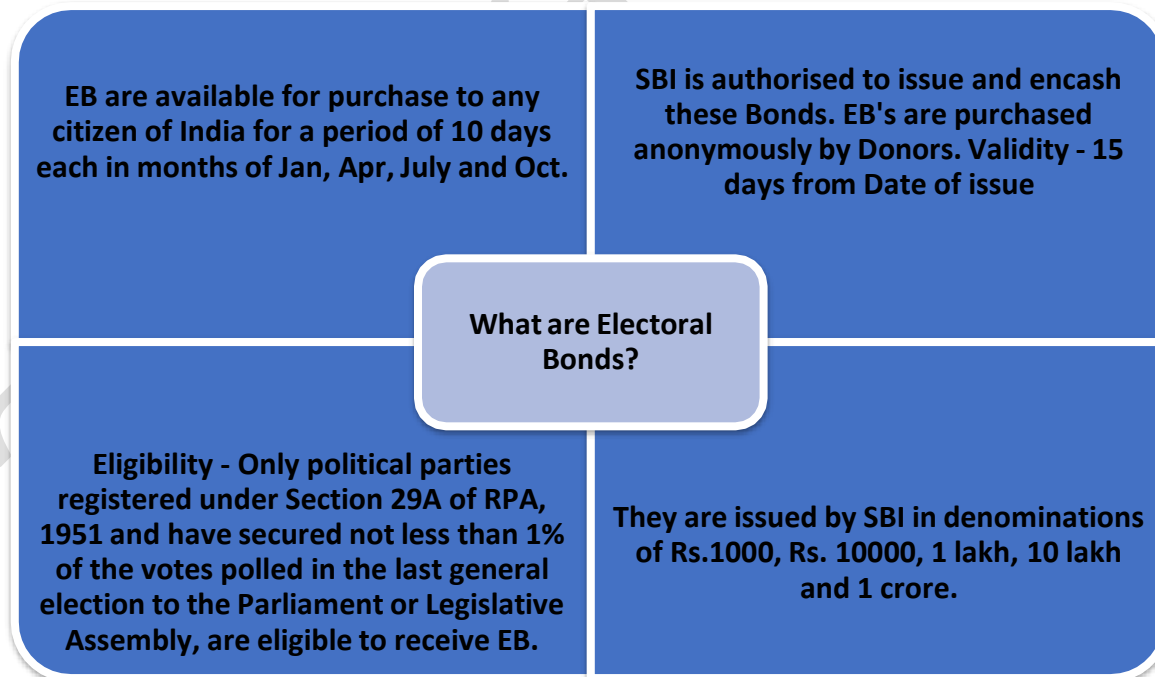
- **Sittings** - States such as Manipur, Odisha, Punjab and Uttar Pradesh have laid down a minimum number of sitting days through the Rules of Procedure, varying from 40 days in Punjab to 90 days in Uttar Pradesh. In 2005, Karnataka even came out with a law the Karnataka Conduct of Government Business in the State Legislature Act with the stipulation of a minimum of 60 days
- **Passage of Bills** - 44% of the Bills adopted by 28 State Assemblies were passed within a day of their introduction. Gujarat, West Bengal, Punjab and Bihar were among the eight States which passed all Bills on the day of introduction. Karnataka, Kerala, Meghalaya, Odisha and Rajasthan took more than five days to pass a majority of their Bills. In Kerala, 94% of the Bills were passed after at least five days of their introduction in the legislature.
- **Most prominent discussion during Sittings** - Education was the top priority with 21% of all laws passed in 2021 related to this subject. After Education, Taxation and Urban Governance accounted for the largest share of state laws passed in 2021.

How often are state assembly supposed to meet?

- According to the Presiding officers conference, held in Gandhinagar in 2016, suggested that state legislatures hold a minimum of 60 days of sittings in a year.
- As pointed out by PRS, between 2016 and 2021, 23 state assemblies met for an average of 25 days.
- According to National commission to review the working of the constitution (2000-2002), headed by CJI M.N Venkatachaliah, had prescribed that houses of state legislature with less than 70 members should meet at least 50 days a year. Other houses with more than 70 members must meet at least 90 days a year.

SBI report on Electoral Bonds

News: Recently, the State Bank of India (SBI) shared data reporting that Donations to political parties through electoral bonds (EBs) have crossed the Rs 10,000-crore mark.



What are the concerns surrounding EBs?

- As such bonds are sold via a government-owned bank (SBI), it leaves the door open for the government to know exactly who is funding its opponents. This, in turn, allows the possibility for the government of the

day to either extort money, especially from the big companies, or victimize them for not funding the ruling party.

- Post the amendment of the Finance Act 2017, the union government has exempted political parties from disclosing donations received through electoral bonds. The voters will not be able to learn which individual, company or organization has funded which party, and by how much.
- The supreme court has for long held that the 'right to know', especially in the context of elections, is an integral part of the right to freedom of expression (Article 19) under the Constitution. Therefore, it compromises the right to know.
- The country needed transparency as far as funding in Indian elections is concerned. The EB scheme's idea and the way it works is exactly opposite of what was needed for the nation i.e. Transparency!
- It promotes Crony capitalism as the scheme removes all pre-existing limits on political donations and effectively allows well-resourced corporates to fund elections.

Way forward

- The need of the hour is to plug the loopholes in current laws to make governance machinery more accountable and transparent. Anything that goes against the concept of 'free and fair elections' in a thriving democracy as India needs a re-think on how it must work.

Supreme court upholds powers of arrest, raids, seizure under PMLA

News: The Supreme Court has upheld the validity of several key provisions of the Prevention of Money Laundering Act(PMLA) which gives the Enforcement Directorate wider powers of arrest, seizure and makes it difficult to obtain bail.

About:

- A number of petitions were filed in the Supreme Court challenging the amendments that were introduced to the PMLA Act by way of Finance Acts.
- The petitioners claimed that these amendments would violate personal liberty, procedures of law and the constitutional mandate. They claimed that the process itself was the punishment.

What did the court say?

- The Supreme Court has upheld the amendments made to the PMLA Act. These amendments give ED wider powers of arrest, seizure and makes it difficult to obtain bail.
- **On EDs of power of arrest**
 - The petitioners had argued that the ED could arrest a person even without informing him of the charges. This power violated the right to 'due process' enshrined in Article 21 of the Constitution.
 - However, the court rejected the notion that the ED has been given blanket powers of arrest, search of person and property and seizure. The court said there were in-built safeguards within the Act, including the recording of reasons in writing while effecting an arrest.
- **On not providing ECIR to the accused**
 - SC held that it was not mandatory for the ED to provide a copy of the Enforcement Case Information Report (ECIR) to the accused. The court was of the view that it is enough if the ED disclosed the grounds of arrest at the time of the arrest. (ECIR is ED document similar to the police FIR)
- **On Twin conditions of Bail**
 - The court upheld the stringent twin bail conditions required under the law for granting bail to an accused. The two conditions require a court to hear the public prosecutor against the bail plea and

On ED's power under PMLA

An upshot of the judgment by the Supreme Court on the validity of certain provisions under the Prevention of Money Laundering Act

- The offence of money laundering is as heinous an offence as terrorism
- Section 3 (definition of money laundering), Section 24 (reverse burden of proof), and Section 5 (attachment of property) to stay
- Stringency in granting bail under the Act is legal and not arbitrary
- It is not mandatory to give an Enforcement Case Information Report (ECIR) in every case as it was not an FIR
- The statements made to ED are considered admissible
- Provision of attachment of property of accused as proceeds of crime 'balances' the interests of the accused and the State
- The question of enactment of PMLA amendments through the Money Bill route is to be decided by a larger Bench

reach a satisfaction that there are reasonable grounds to believe that the accused is not guilty of the offense and that he is not likely to commit any offence while on bail.

- However, the court said undertrials could seek bail under Section 436A of the Code of Criminal Procedure if they had already spent one-half of the term of punishment in jail for the offence prescribed in law. But, again, this is not an “absolute right” and would depend from case to case.
- **On issue of burden of proof rests on the accused**
 - The court upheld this provision and said that this provision did not suffer from the “vice of arbitrariness or unreasonableness”.
- **On introduction of amendments through Money bills**
 - The SC held that this issue would be separately examined by a larger Bench of the apex court.

Constitutional Privilege of MPs

News: Mallikarjun Kharge, prominent Congress leader, raised an issue in the house that he was summoned by the ED when the session was on.

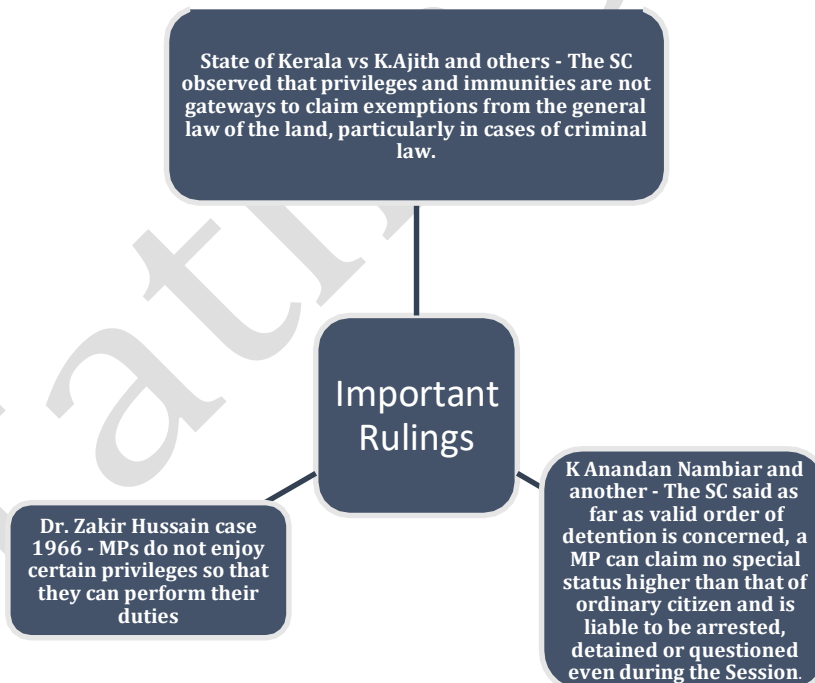
What observations were made by the Chairman?

- Rajya Sabha Chairman clarified in the House that “MPs do not enjoy any immunity from being arrested in a criminal case during the Session or otherwise”.
- In criminal matters, Members of Parliament (MPs) are “not on a different footing than a common citizen”.

Constitutional provision in context of the news:

- Under Article 105 of the Constitution, MPs enjoy certain privileges so that they can perform their parliamentary duties without any hindrance.
- One of the privileges is that a member of Parliament cannot be arrested in a civil case, 40 days before the commencement of the Session or Committee meeting and 40 days thereafter.
- This privilege is already incorporated under section 135A of the Civil Procedure Code, 1908.

Important rulings regarding the said matter:



PESA Act, 1996

News: An electoral party is trying to woo tribals in Gujarat by making promises to strictly implement the Panchayat Extension to Scheduled Areas (PESA) Act, 1996. Also, Chattisgarh recently became the 7th state to implement the Panchayats (extension to schedule area) rules.

About:

- Based on the recommendations of Dileep Singh Bhuria Committee, PESA Act was enacted in 1996 for tribal empowerment and to bring them into the mainstream.
- It recognizes the role of the Gram Sabha and the community in these areas and directs the state government to devolve power and authority directly to the Gram Sabha and panchayats.
- The Ministry of Panchayati Raj is the nodal ministry for implementation of the provisions of PESA act.
- Seven states (Himachal Pradesh, Andhra Pradesh, Telangana, Rajasthan, Gujarat, Maharashtra, Chattisgarh) have formed the PESA laws.

What are the provisions and objectives of PESA act?

- Under the Act, Scheduled Areas are those referred to in Article 244(1), which says that the provisions of the Fifth Schedule shall apply to the Scheduled Areas and Scheduled Tribes in states other than Assam, Meghalaya, Tripura, and Mizoram. The Fifth schedule provides for a range of special provisions for these areas.
- All state legislation on panchayats shall be in conformity with the customary law, social and religious practices and traditional management practices of community resources.
- Every village to have a separate Gram Sabha consisting of persons whose names are included in the electoral rolls for the panchayat at the village level.
- The Gram Sabha is responsible to approve all development works in the village, identify beneficiaries, issue certificates of utilization of funds.
- Every Gram Sabha is to safeguard and preserve the traditions and customs of the people, their cultural identity, community resources and customary mode of dispute resolution.

What is the significance of the Act?

- It facilitates Tribal integration as decentralized governance helps in reducing grievances of tribal people and builds trust.
- It empowers the Gram Sabha as they play a key role in approving development plans, controlling all major development in social sectors. For example, control of resources over water, forest and land, minor forest produce, managing local markets etc.
- The powers of gram sabhas include maintenance of cultural identity and tradition, control over schemes affecting the tribals, and control over natural resources within the area of a village.
- PESA empowers tribes through Gram Sabha to preserve their connection with ecosystem. For example, in 2013, the Supreme court of India ordered the Odisha government to seek Gram Sabha permission for bauxite mining in Kalahandi and Rayagada district of Odisha, leading to cancellation of mining on Niyamgiri Hills.

What are the challenges in PESA implementation?

- Lack of awareness about PESA amongst tribal community.
- PESA implementation is overseen by people lacking understanding of tribal culture.
- Major tribal states such as Jharkhand, Odisha and Madhya Pradesh are yet to implement PESA rules.
- There is a visible gap seen in adoption of PESA in letter and spirit.
- Limited autonomy of Gram Sabha and Panchayats.
- Use of unfair means for bypassing the law – Acquisition of land happens under other acts, violating the spirit behind PESA which seeks to safeguard tribal land and undermining the powers of Gram Sabha. For

example, in Korba district of Chhattisgarh, the authorities decided to acquire land using the Coal Bearing Act of 1957.

Himachal Pradesh Freedom of Religion (Amendment) Bill, 2022

News: The Himachal Pradesh Freedom of Religion (Amendment) Bill, 2022 is a more stringent version of the Himachal Pradesh Freedom of Religion Act, 2019, which came into force just over a year and half ago.

- It was introduced in the state assembly to enhance the punishment and add a specific mention of 'mass conversion' in an existing law that forbids change of religion through force or allurement.

Why are anti-conversion laws made?

- Such laws are considered as a remedial measure to the problem of conversion which is considered as a way to bring demographic change.
- Such laws are not introduced to enforce a blanket ban on conversion but are mainly introduced to prohibit conversions that are effectuated by force, inducement or fraud.
- The supporters of the law state that present instances of forced conversion are very high and hence these laws are introduced and designed to criminalize such activities.
- During the debates of Constituent assembly, Sardar Vallabh Bhai Patel had raised concerns about forceful conversions which later became as the moral base of anti-conversion laws in India. Another member of the constituent assembly, Mr. Ananthasayanam Ayyangar had proposed that conversion should be banned and conversion only on oath before a judge should be permitted.
- Since the law provide stringent provision for forced or induced conversion, they are considered as necessary safeguards for the protection of religious freedom, a right guaranteed both constitutionally and in international human rights instruments.

What are the concerns surrounding such laws?

- Though there are very rare cases of prosecution or arrest under anti-conversion laws, but they create the atmosphere of fear amongst the couples willing to do inter-faith marriage.
- It is argued that such laws both by their design and implementation infringe upon the individual's right to convert and may favor one religion over other.
- The Burden of proof that the conversion was 'lawful' lies on the person who has 'caused' the conversion. Thus, the law focus more on prosecuting the 'convertor' and opinion of the person who has converted is considered less.
- Religion or spirituality, both are most integral part of human nature and thus any undue ban on it can be a gross violation of human rights.
- Terms such as force, fraud, allurement are vaguely defined which may leave for wide scope for misuse.

Some important verdicts surrounding the topic we must know:

- **Rev. Stainislaus vs State of MP & Ors (1977)** – It examined the earliest anti-conversion statutes in MP and Orrisa. Court upheld the constitutionality of both the acts on the ground that these efforts to restrain the conversion are fore securing freedom of conscience and public order.
- **Lata Singh vs State of UP** – The Supreme court highlighted the need for stringent punishment over acts of violence and or threats in cases of inter case and inter-faith marriages.
- **M Chandra vs M Thangamuthu, 2010** – The SC laid down the test to prove conversion: First, there has to be conversion and second, acceptance into the community to which the person converted. It also stated that the need of a conversion cannot be altogether done away with.

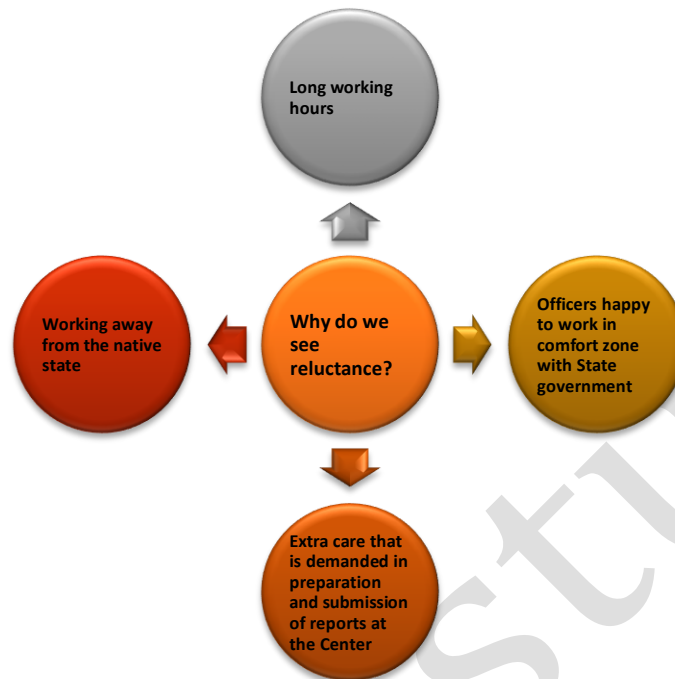
Why AIS officers are reluctant to work with Centre?

News: It has been reported that fewer All India Services (AIS) officers working in the States were coming forward to opt for tenure with the Center.

What are things regarding appointment procedure we must know?

- Through the Union Public Service Commission (UPSC), which holds an annual examination.

- Appointment officers are allotted to various States, the number of officers depending on each State's requirement.
- Thereafter, they spend most of their career in those States, intervened by short spells of deputation to the Center.
- While they are functioning under a State government, disciplinary authority is vested in the center. The state cannot impose a major penalty on a delinquent AIS officer for any misconduct.
- Suspension of an officer from the service by a State government will have to be ratified by the Center before the end of three months. This is meant to be a safeguard against any arbitrary action by a State government.



What is the way forward?

- Center's dialogue with the States over amending the AIS rules assumes importance. Such amendment would empower the Center to commandeer the services of any officer serving in the States to work for the former, with or without the concurrence of the State concerned or the consent of the particular officer.

Governing Council Meet

News: Recently, the Prime Minister chaired the seventh meeting of the Governing Council (GC) of NITI Aayog.

About NITI's Aayog's Governing Council:

- It is the premier body trusted with developing a shared vision of national priorities and strategies with the active involvement of States and Union Territories.
- It is a platform to discuss inter-sectoral, inter-departmental and federal issues.
- It comprises of Prime Minister, CM of all states and UT's with legislature, Lt Governors of other UTs, Ex-officio members, Vice Chairman of NITI aayog, Full time members of NITI aayog and special invitees.

What did the PM say?

- Every State played a crucial role according to its strength and contributed to India's fight against Covid-19, leading India to emerge as an example for the developing nations to look up to as a global leader.
- Each state should focus on promoting its 3Ts, Trade, Tourism, Technology, through every Indian Mission around the world.

What was the Key agenda of the meeting?

- Crop diversification and achieving self-sufficiency in pulses, oilseeds and other agri-commodities

- Implementation of National Education Policy (NEP) in school Education, Implementation of National Education Policy in higher education, and
- Urban governance.

Har Ghar Jal

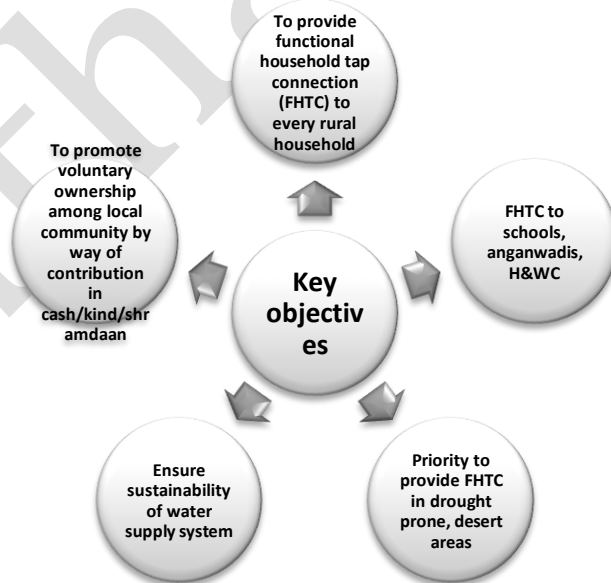
News: Recently, **Goa and Dadra & Nagar Haveli and Daman & Diu** (D&NH and D&D) became the **first 'Har Ghar Jal' certified** State and UT in the country respectively.

About Jal Jeevan Mission:

- Jal Jeevan Mission, a central government initiative under the Ministry of Jal Shakti, aims to ensure access of piped water for every household in India.
- Jal Jeevan Mission, is envisioned to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India.
- The programme will also implement source sustainability measures as mandatory elements, such as recharge and reuse through grey water management, water conservation, rain water harvesting.
- The Jal Jeevan Mission will be based on a community approach to water. It will include information, education, and communication as key components.
- It is meant to create a people's movement for water, making it everyone's priority.

What role does the mission envisage for State/UTs?

- States/ UTs in the planning of participatory rural water supply strategy for ensuring potable drinking water security on a long-term basis to every rural household and public institution.
- States/ UTs for creation of water supply infrastructure, so that every rural household has a Functional Tap Connection (FHTC) by 2024 and water in adequate quantity of prescribed quality is made available on regular basis.
- Gram Panchayats (GPs)/ rural communities to plan, implement, manage, own, operate, and maintain their own in-village water supply systems.
- States/ UTs to develop robust institutions having a focus on service delivery and financial sustainability of the sector by promoting a utility approach
- Further enhancing capacity building of the stakeholders and creating awareness in the community on the significance of water for improvement in quality of life.



Remission policy for convicts

News: Eleven men who were sentenced to life imprisonment in 2008 for the gang rape of Bilkis Bano were released in the past week from a jail in Gujarat. This calls into question the state government's remission policy for convicts.

What is Remission?

- It implies reducing the period of sentence without changing its character. For example, a sentence of rigorous imprisonment for two years may be remitted to rigorous imprisonment for one year.

What explanation did state government give?

- The state government argues that the convicts had already completed 14 years of their imprisonment and have shown good behavior in court and are therefore eligible for remission.
- However, Experts point out that remission for heinous crimes such as rape and murder is unjustified.
- Previously, a Special Central Bureau of Investigation Court had sentenced the men to life imprisonment in 2008.

What is the argument for release?

- One of the prisoner had sought release on the basis of Remission policy of 1992. The Supreme Court of India had earlier ruled that the remission question, in this case, would be governed by the remission policy of 1992 that was in force at the time of conviction which did not exclude those convicted of rape from executive remission.
- State governments have laid down behavior/activities that can earn prisoners a certain amount of days as remission, which is then deducted from their sentence.
- The Code of Criminal Procedure (CrPC) is clear that life convicts have to undergo a minimum of 14 years of actual imprisonment before they can be considered for remission/premature release.

What is the argument against the release of prisoners?

- As is observed in most states, Gujarat's current remission policy (it adopted a new and revised remission policy for prisoners in 2014), makes those convicted of rape ineligible for premature release.
- It is against justice for the victim and it does not send the right message as far as safety of the victim is concerned as also women in general.
- Some experts view remission of the accused as politically motivated.

The role of governor and Article 161 of The Indian Constitution:

- Article 161 deals with the Pardoning Power of the Governor.
- The Governor can grant pardons, reprieves, respites and remissions of punishments or suspend, remit and commute the sentence of any person convicted of any offence against any law relating to a matter to which the executive power of the state extends.
- State governments have also developed premature release rules that include the power to give effect to the Governor's powers of remission under Article 161 of the Constitution. Those powers are not governed by the CrPC and are often used to bypass the minimum 14 years of actual imprisonment requirement in the CrPC.

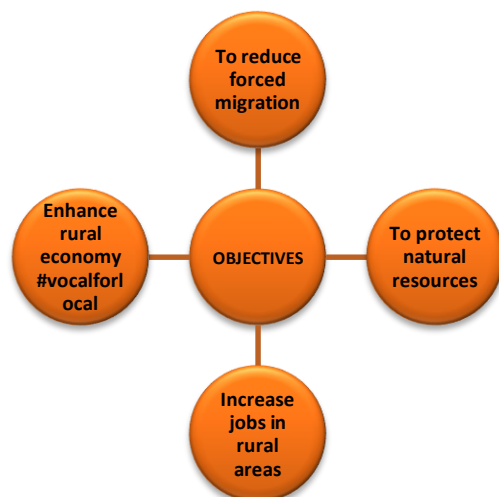
Grameen Udyami Project

News: National Skill Development Corporation (NSDC) in partnership with Seva Bharti and Yuva Vikas Society, launched the second phase of the Grameen Udyami Project. Under the initiative, the endeavor is to multiskill India's youth and impart functional skills to them for enabling livelihoods.

About:

- It is a unique multiskilling project, funded by NSDC that aims to train 450 tribal students in Madhya Pradesh and Jharkhand. The project is being implemented in Maharashtra, Rajasthan, Chhattisgarh, Madhya Pradesh, Jharkhand, and Gujarat.
- There is a dire need to increase ownership at the tribal level so that there is awareness built around such schemes and initiatives. As there is so much potential and ability in the tribal youth, all we need to do is lay

down the right avenues for them to use their talent in the right places. This initiative will provide economic empowerment to our tribal population.



How has the project worked?

- Under Phase I, candidates were mobilized from rural and tribal areas of Maharashtra, Rajasthan, Chhattisgarh, Madhya Pradesh, and Gujarat. The transportation, boarding & lodging were provided to candidates so that they do not miss out on the learning opportunity due to lack of resources.
- Under the phase-II of the pilot project launched in Ranchi. NSDC under the aegis of the Ministry of Skill Development and Enterprises (MSDE) has supported setting up of labs and classrooms through Sector Skill Councils (SSCs) in Seva Bharti Kendra Skill Development Center.
- The training under the project will be conducted in the following Job roles which are relevant to the local economy. Following are the job roles - Electrician & Solar PV Installation Technician, Plumbing & Masonry, Two-Wheeler Repair & Maintenance, IT/ITES with e-Governance and Farm Mechanization.

Compared to the national average, the contribution of organized sectors to tribal livelihoods is significantly lower due to a lack of skill and education. Therefore, the Grameen Udyami project is important for their improvement and to make sure they can earn a living.

MGNREGA

News: Parliamentary Standing Committee on Rural Development and Panchayati Raj' released an action taken report on MGNREGA. The government has accepted 26 of the 33 recommendations made.

About:

- It guarantees "the right to work", by legally providing at least 100 days of wage employment in rural India.
- The Ministry of Rural Development (MRD) in association with state governments are implanting agencies of the scheme. It is a centrally-sponsored scheme.
- Within 15 days of submitting the application or from the day work is demanded (demand-driven scheme), wage employment will be provided to the applicant, and allowances in case employment are not provided.
- Social Audit of MGNREGA works is mandatory
- Gram Sabha and the Gram Panchayat approve the shelf of works under MGNREGA and fix their priority.

What are the suggestions made by the PSC?

- It recommended to promote women-centric work so that their participation in the labor workforce increases. In spite of making necessary efforts, the participation of women has stagnated at around 50% in the last 5 years.
- The number of workdays to be increased to 150 from current 100 days. However, attempts to increase workdays have only been observed in areas hit either by drought or some other calamity.

- Increase in wages and link it with inflation, but currently, it is linked with CPI-AL (agriculture labor)
- Paying wages on time to the laborers is crucial for successful governance and participation of workers. However, as per a recent study wage payments were delayed for 71 percent of the transactions beyond the mandated seven days.
- Convergence of various rural development schemes along with MGNREGA as it would help address rural poverty.
- Doorstep medical facilities for job cardholders have been recommended by the committee.

Roll back the system of caste-based wages, under which NREGS workers are paid based on whether they belong to a Scheduled Caste, Scheduled Tribe, or others, with the earlier system where single fund transfer order was given.

Office of Profit

News: The Election Commission of India (ECI) is understood to have conveyed its decision in the office-of-profit allegation against Jharkhand CM to the Governor.

What was the matter about?

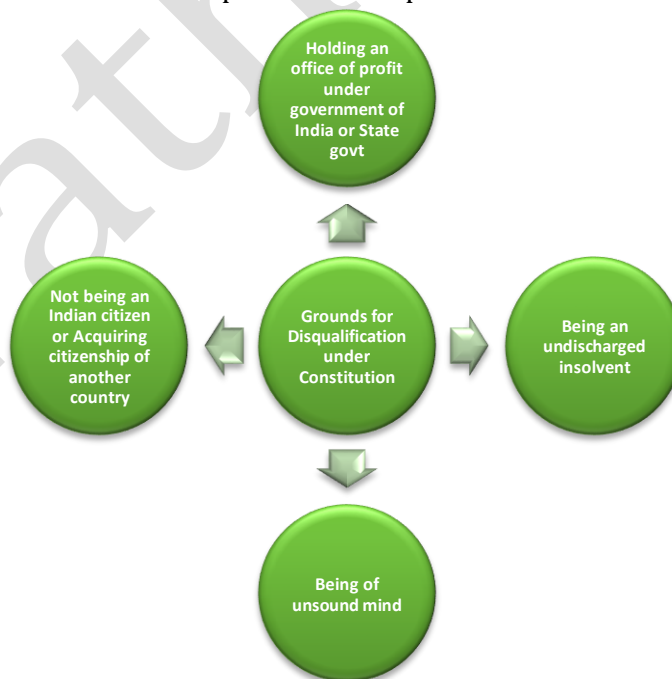
- The matter was referred to the ECI after complaint to the Governor about CM Soren allocating a mining lease to himself while holding the portfolio of Mines Minister in 2021.

What is 'Office of Profit'?

- If an MLA or an MP holds a government office and receives benefits from it, then that office is termed an "office of profit".
- A person will be disqualified if he holds an office of profit under the central or state government, other than an office declared not to disqualify its holder by a law passed by Parliament or state legislature.

Which Articles in the Constitution govern disqualification criteria?

- Basic disqualification criteria for an MP are laid down in Article 102 of the Constitution, and for an MLA in Article 191.
- The articles clarify that "a person shall not be deemed to hold an office of profit under the government of India or the government of any state by reason only that he is a minister".
- Provisions of Articles 102 and 191 also protect a legislator occupying a government position if the office in question has been made immune to disqualification by law.
- Parliament has also enacted the Parliament (Prevention of Disqualification) Act, 1959, which has been amended several times to expand the exempted list.



Following (according to Supreme court ruling in 1964) are factors which are considered for determining whether a person holds office of profit:

- Whether the government is the appointing authority
- Whether the government has the power to terminate the appointment
- Whether the government determines the remuneration
- What is the source of remuneration?
- Power that comes with the position

Related judgements of the Supreme court:

- Pradyut Bordoloi vs Swapan Roy (2001)
- CVK Rao vs Dentu Bhaskar Rao
- Kartar Singh Bhadana vs Hari Singh Nalwa and others
- Disqualification of Mrs. Jaya Bachchan from Rajya Sabha

Tathastu-ICS

Social Justice

India's Public examination system – Issue and Way forward

News: As highlighted in an editorial by Varun Gandhi regarding how recruitment for some government posts is a never-ending process.

What are the issues highlighted?

- Delayed recruitment - Recently 4500 candidates in Andhra Pradesh who cleared a district selection committee exam in 1998 have finally been offered regular jobs as teaching staff in government schools. With 24 job-seeking years, most of them reached close to retirement age. Delayed recruitment cycle of SSC exams, railways and at times delay in conducting exams due to paper leaks is a recurring problem that most students continue to face.
- High tuition costs across exams, right from minor posts to UPSC exams.
- When the exams get delayed, it also impacts the youth who suffer both financially and mentally.

What are the solutions recommended?

- **Reforms in examination schedule**
 - Each ministry should ask all departments to prepare an existing vacancies list within three days from the defined zero date.
 - The departments should ideally advertise the approved list of existing vacancies within seven days of the approval of such a list
 - For each week of delay beyond 30 days, the defaulting department could be liable for a small reduction in their administrative expenses
 - Final examination results should be announced within a defined period.
 - In the event of cancellation of examinations, compensatory attempts shall be provided to all applicants by relaxing age norms.
- **Changes in the examination process**
 - Waiver of examination fees in a few cases.
 - Removing a barrier for candidates from economically challenging backgrounds.
 - Providing travel and lodging allowances if the examination centre is not within a specified distance.
 - All examination centres must have the basic infrastructure (biometric attendance, cloakroom) and adequate security (guards, invigilators, CCTV cameras) to ensure a fair process
 - An integrated examination calendar for all major educational institutions and recruitment to PSUs should be published while ensuring minimal overlap.

India needs to face the challenge of job creation and upskilling of youth for the labour market to ensure that India's demographic dividend does not become a demographic disaster.

Clean, Healthy environment – A Universal Human Right

News: United Nations declares access to a clean, healthy environment as a universal human right. India voted for the resolution and pointed out that the resolutions do not create binding obligations. Only through conventions and treaties do state parties undertake obligations for such rights.

About:

- Every person on the planet has the right to live in a clean, healthy environment.
- Climate change and environmental degradation are the most critical threats awaiting humanity in the future.
- It demonstrates that the member states can unite in the collective fight against the triple planetary crisis of climate change, biodiversity loss and pollution.

- The declaration adopted by over 160 UN member nations, including India, is not legally binding. But, it will encourage countries to incorporate the right to a healthy environment in national constitutions and regional treaties.
- Russia and Iran abstained from voting.

How will it help?

- It will help to reduce environmental injustices and protection gaps.
- It can empower people, especially those in vulnerable situations, including environmental human rights defenders, children, youth, women and indigenous people.
- This right (Access to Clean, Healthy Environment) was not included in the Universal Declaration of Human Rights, 1948.

New Zealand's Bill to ban Tobacco

News: To fulfil its plan to be smokefree by 2025, the New Zealand Parliament recently tabled the Smokefree Environments and Regulated Products (Smoked Tobacco) Amendment Bill.

About:

- The Tobacco Endgame refers to a policy approach that focuses on ending the Tobacco Epidemic, aiming at a 'tobacco-free future'.
- The Bill seeks three Strategies to reduce Smoking significantly or ending it.
- If implemented, it will be the world-first legislation that will stop the next generation from ever being able to legally buy cigarettes.

What are the three strategies?

- Drastically reducing nicotine content in tobacco so it is no longer addictive (known as "denicotinisation" or "very low nicotine cigarettes" (VLNC)).
- A 90% to 95% reduction in the number of shops that can sell tobacco.
- Making it illegal to sell tobacco to people born on or after 1 January 2009. (thus, creating a "smoke free generation").

What are India's initiatives in this regard?

- **Cigarettes and Other Tobacco Products Act (COTPA), 2003** - It replaced the Cigarettes Act of 1975 (largely limited to statutory warnings- 'Cigarette Smoking is Injurious to Health' to be displayed on cigarette packs and advertisements. It did not include non-cigarettes). The 2003 Act also included cigars, bidis, cheroots, pipe tobacco, hookah, chewing tobacco, pan masala, and gutka.
- **Promulgation of the Prohibition of Electronic Cigarettes Ordinance, 2019** - It prohibits Production, Manufacture, Import, Export, Transport, Sale, Distribution, Storage and Advertisement of e-Cigarettes.
- **mCessation Programme** - It is an initiative using mobile technology for tobacco cessation. India launched mCessation using text messages in 2016 as part of the government's Digital India initiative. It uses two-way messaging between the individual seeking to quit tobacco use and programme specialists providing them dynamic support.
- **National Tobacco Quitline services** - Launched with the purpose to help and reach out to as many tobacco users as possible.

Digital Gap in Indian education system

News: Recently, the Ministry of Education informed Lok Sabha that less than 10% of schools are equipped with Information and Communication Technology (ICT) tools or Digital Tools, in at least 10 states of India.

What are ICT tools?

- It refers to all communication technologies that are the tools to access, retrieve, store, transmit and modify information digitally.
- For example, it includes printers, computers, laptops, tablets, software tools such as google meet, google spreadsheets.
- ICTs are also used to refer to the convergence of media technology such as audio-visual and telephone networks with computer networks, by means of a unified system of cabling (including signal distribution and management) or link system.

What is Digital gap and its status in India?

- It is a gap between demographics and regions having access to modern information and communications technology (ICT) and those not having access.
- A study in 2021 by the Azim Premji Foundation showed that almost 60 % of school children in India cannot access online learning opportunities.
- A study by Oxfam India found that even among students of urban private schools, half of the parents reported issues with Internet signal and speed. A third struggled with the cost of mobile data.
- In India the urban-rural divide is the single biggest factor in the Digital Gap.

Adverse effects of Digital gap:

- It will deprive people of higher/quality education and skill training that could help them contribute to the economy and become leaders on a global level.
- Children belonging to the Disadvantaged Groups may suffer the consequence of not having to fully pursue their education or worse still drop out because of the lack of access to ICT.
- The poor students will be deprived of expertise that can be availed on online coaching/academia. Thus they will always be inferior as far as receiving quality education is concerned. Those who have access to such expertise will have a competitive advantage.
- The people in lower socio-economic classes are disadvantaged and have to undergo long hours of cumbersome studies in meeting the objectives of the course. While the rich can easily access schooling materials online and work on their programs in a flash.

What is the way forward?

- Government can play a proactive role by ensuring affordable, easy to use technologies and thus bridge the digital divide.
- Educational online content creators should aim to make information available in as many languages as possible. When the users are confident that they can see content in their native or local languages, they are more inclined to use similar tools that provide personalized benefits.
- There is a special need to reduce the gender digital divide. Barriers and constraints in accessing the internet impede women's and girls' full involvement in the social and economic progress of their communities and countries.

Link between Gender Inequality and Food insecurity

News: Recently, a report was released named "Food Security and Gender Equality: A synergistic understudied symphony", which highlighted a global link between Gender Inequality and Food Insecurity.

Who released the report?

- The Report was released by CARE, which is an international humanitarian organisation fighting global poverty and world hunger by working alongside women and girls.

Key Findings:

- **Gender inequality and Food security**
 - The gap between men and women's food security is growing worldwide.

- Across 109 countries, as gender inequality goes up, food security goes down. Between 2018 and 2021, the number of hungry women versus hungry men grew 8.4 times, with a staggering 150 million more women than men hungry in 2021.
- **More the Gender inequality, more the malnourished people**
 - Nations with high gender inequality, such as Yemen, Sierra Leone and Chad, experienced the lowest food security and nutrition.
- **Women employed experienced less food insecurity**
 - When women are employed and earning money or when they are directly involved in farming, they are less likely to experience food insecurity.

Key Recommendations:

- As women keep feeding the world, they must be given the right space in the data collection methods and analysis to make the gaps they encounter visible and work with women themselves to find solutions to those gaps.
- It is time to update global understanding of food security and gender inequality, and local actors, including women's organizations in crisis-affected communities, need to get the flexible funding and support desperately needed to protect women and girls from hunger-associated gender-based-violence and protection risks.
- All the SDGs depend on the achievement of Goal 5 - Achieve gender equality and empower all women and girls. Gender equality by 2030 requires urgent action to eliminate the many root causes of discrimination that still curtail women's rights in private and public spheres.

Global Employment Trends for Youth

News: Recently, the International Labour Organisation (ILO) has released a report titled "Global Employment Trends for Youth 2022: Investing in transforming futures for young people".

Key Findings (Globally)

- Young women exhibited a much lower Employment-to-Population ratio (EPR), showing that young men are almost 1.5 times more likely than young women to be employed.
- Covid-19 Pandemic has worsened the numerous labour market challenges facing those aged between 15 and 24 years, who have experienced a much higher percentage loss in employment than adults since early 2020.
- Young people were well-placed to benefit from the expansion of the so-called green and blue economies, centered around the environment and sustainable ocean resources respectively. An additional 8.4 million jobs may be created for young people by 2030 through green and blue investments, notably in clean and renewable energies, sustainable agriculture, recycling and waste management.
- Achieving universal broadband coverage by 2030 may lead to a net increase in employment of 24 million new jobs worldwide, of which 6.4 million would be taken by young people.

Key Findings regarding India:

- The youth employment participation rate declined by 0.9 % over the first nine months of 2021 relative to its value in 2020, while it increased by 2 % for adults over the same time period. The situation is particularly severe for very young people aged 15-20 years.
- Indian young women experienced larger relative employment losses than young men in 2021 and 2022. In general, the high youth employment losses in India drive up the global average employment losses. Young Indian men account for 16% of young men in the global labour market, while the corresponding share for young Indian women is just 5%.
- School closures lasted 18 months and among the 24-crore school-going children, only 8% of such children in rural areas and 23% in urban areas had adequate access to online education.

- School closures not only prevented new learning, but also led to the phenomenon of “learning regression”, that is, children forgetting what they had learned earlier. In India, 92% of children on average lost at least one foundational ability in language and 82% lost at least one foundational ability in mathematics.
- The study found out that teachers in non-state schools are often paid significantly less than those in state schools. Teachers in low-fee private schools in India, Kenya, Nigeria and Pakistan are paid between one eighth and one half of what their counterparts in the state sector receive.
- Domestic work is a highly informal sector in India, and wages are extremely low and young women and girls are vulnerable to abuse. Reports of abuse suffered by young domestic workers are common, including verbal and physical abuse, and sexual exploitation.

Key recommendations made:

- Investment in various sectors must be accompanied by the promotion of decent working conditions for all young workers. Young workers should be ensured that they enjoy fundamental rights and protections including freedom of association, the right to collective bargaining, equal pay for work of equal value, and freedom from violence and harassment at work.
- Young people should be provided with well-functioning labour markets with decent job opportunities for those already participating in the labour market, along with quality education and training opportunities for those yet to enter it.

Manual Scavenging – Enumeration exercise

News: The Ministry of Social Justice and Empowerment (MoSJ&E) is preparing to undertake a nationwide survey to enumerate all Sanitation workers engaged in cleaning of sewers and septic tanks.

About:

- The enumeration exercise is part of the National Action Plan for Mechanized Sanitation Ecosystem (NAMASTE) Scheme and will be conducted across 500 AMRUT (Atal Mission for Rejuvenation and Urban Transformation) cities. It will merge with and replace the Self-Employment Scheme for the Rehabilitation of Manual Scavengers (SRMS), which was started in 2007. Programme Monitoring Units (PMUs) for the 500 AMRUT cities will be set up to carry out the exercise. Once this exercise is completed across the 500 cities, it will be expanded nationwide, making it easier to bring government benefits like upskilling and loan and capital subsidies to them.

What is the need for conducting such exercise?

- Manual Scavenging has led to at least 351 deaths since 2017. It is aimed at streamlining the process of rehabilitating sanitation workers. It will make it easier to bring government benefits like upskilling and loan and capital subsidies to them.
- To link listed sanitation workers to the Swachha Udyami Yojana, through which the workers will be able to own sanitation machines themselves and the government will ensure that at the municipality level, the work keeps coming in. Swachha Udyami Yojana has twin objectives of cleanliness and providing livelihood to Safai Karamcharis and liberated Manual Scavengers to achieve the overall goal of “Swachh Bharat Abhiyan”.

Government efforts to curb menace of Manual scavenging:

- Safaimitra Suraksha challenge - It was launched by the Ministry of Housing and Urban Affairs on World Toilet Day (19th November) in 2020. The Government launched this “challenge” for all states to make sewer-cleaning mechanised by April 2021, if any human needs to enter a sewer line in case of unavoidable emergency, proper gear and oxygen tanks are to be provided. Effort by Supreme court - In 2014, a Supreme Court order made it mandatory for the government to identify all those who died in sewage work since 1993 and provide INR 10 lakh each as compensation to their families.
- The Prohibition of Employment as Manual Scavengers and their Rehabilitation (Amendment) Bill, 2020- It proposes to completely mechanize sewer cleaning, introduce ways for ‘on-site’ protection and provide compensation to manual scavengers in case of sewer deaths. It will be an amendment to The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013. It is still awaiting cabinet approval.

International Relations

Minerals security partnership

News: There is growing concern in the Government over India not finding a place in the Minerals Security Partnership.

About:

- Minerals Security Partnership is an ambitious new US-led partnership to secure supply chains of critical minerals, aimed at reducing dependency on China.
- The US and 10 partners- Australia, Canada, Finland, France, Germany, Japan, the Republic of Korea (South Korea), Sweden, the United Kingdom, and the European Commission have come together to form the MSP.
- The new grouping is aimed at catalyzing investment from governments and the private sector to develop strategic opportunities.
- The new grouping, industry insiders say, could focus on the supply chains of minerals such as Cobalt, Nickel, Lithium, and also the 17 'rare earth' minerals.
- Demand for critical minerals, which are essential for clean energy and other technologies is projected to expand significantly in the coming decades.

What are Rare earth elements?

- The 17 rare earth elements (REE) include the 15 Lanthanides (atomic numbers 57 — which is Lanthanum — to 71 in the periodic table) plus Scandium (atomic number 21) and Yttrium (39). REEs are classified as light RE elements (LREE) and heavy RE elements (HREE).
- Some REEs are available in India such as Lanthanum, Cerium, Neodymium, Praseodymium and Samarium, etc. Others such as Dysprosium, Terbium, and Europium are not available in Indian deposits in extractable quantities.
- There is a dependence on countries such as China for HREEs, which is one of the leading producers of REEs, with an estimated 70 per cent share of the global production.

Importance of these critical minerals:

- Minerals like Cobalt, Nickel, and Lithium are required for batteries used in electric vehicles.
- Aerospace, communications and defence industries also rely on several such minerals as they are used in manufacturing fighter jets, drones, radio sets and other critical equipment.
- REEs are an essential component of a large range of consumer products, including mobile phones, computer hard drives, electric and hybrid vehicles, semiconductors, flatscreen TVs and monitors, and high-end electronics.

Why is India concerned about missing out on joining the Partnership?

- If India is not able to explore and produce these minerals, it will have to depend on a handful of countries, including China, to power its energy transition plans to electric vehicles.
- Industry watchers say that the reason India would not have found a place in the MSP grouping is because the country does not bring any expertise to the table.
- In the group, countries like Australia and Canada have reserves and also the technology to extract them, and countries like Japan have the technology to process REEs.

Breaking a Taboo - India held talks with NATO

News: India held its first political dialogue with the North Atlantic Treaty Organization (NATO) in Brussels on **December 12, 2019**, with the aim to assess cooperation on regional and global issues of mutual interest. Covid had apparently prevented a continuation of this dialogue in the following years.

Significance of the Dialogue:

- India's talks with NATO hold significance given that the North Atlantic alliance has been engaging both China and Pakistan in bilateral dialogue. NATO opened selective training for Pakistani officers and its military delegation visited Pakistan in November 2019 for military staff talks.
- Engaging NATO in a political dialogue would provide India with an opportunity to bring about a balance in NATO's perceptions about the situation in regions and issues of concern to India.
- Developments in post 2019 years in the region has further renewed the case for India's dialogue with NATO. For example, the US withdrawal from Afghanistan, the rise of Taliban, Sino-Russian friendship, the rise of assertive China and the emergence of Indo-Pacific have dramatically altered the international security context.
- There is a convergence in the perspectives of both India and NATO on China, terrorism, and Afghanistan, including Pakistan's role in Afghanistan.

Limitations of India-NATO talk:

- Given the divergence among NATO countries, its view on China was mixed; while it did deliberate on China's rise, the conclusion was that China presented both a challenge and an opportunity.
- In Afghanistan, NATO saw the Taliban as a political entity, which was not in line with India's stance. This was almost two years before the Taliban announced an interim government in Afghanistan in September 2021.
- From NATO's perspective, it was not China, but Russia whose aggressive actions continued to be the main threat to Euro-Atlantic security.

Way Forward:

- India's vulnerabilities have risen on the border with China and the conflict with Pakistan shows no signs of abating, India. India, therefore has adopted the strategy of multi-alignment which is deepening ties with the US, building partnership with Europe, holding onto the traditional partnership with Russia, and talking to China to resolve bilateral issues.
- Sustained engagement with NATO must be an increasingly important part of this self-assured strategy of multi-alignment.

Yuan Wang 5

News: Recently, China's satellite tracking vessel Yuan Wang 5 has arrived at Sri Lanka's southern Hambantota Port, despite India and the U.S. voicing concern with Colombo over the military ship's visit.

About Yuan Wang 5:

- It is a third-generation vessel of the Yuan Wang series that entered service in 2007.
- This series of ships include "space tracking ships involved in supporting the manned space programme".
- It has the ability to track satellites and intercontinental missiles.

About Hambantota Port:

- Hambantota International Port Group is a Public Private Partnership and a Strategic Development Project between the Government of Sri Lanka and China Merchants Port Holdings (CMPort).
- This port was given to China by Sri Lanka on a 99-year lease after Sri Lanka failed to repay Chinese loans.

Why is Chinese presence in Sri Lanka a matter of concern for India?

- Sri Lanka has decided to establish a Special Economic Zone around the Colombo port city and a new economic commission, to be funded by China. The Colombo port handles 60% of India's trans-shipment cargo.
- Leasing of Hambantota and the Colombo Port City project makes it almost certain for the Chinese navy to have a permanent presence in the Indian Ocean which will be worrisome for India's national security. This Chinese strategy to encircle India is referred to as the **Strings of Pearls Strategy**.
- Other South Asian nations like Bangladesh, Nepal and the Maldives have also been turning to China to finance large-scale infrastructure projects.
- For India's maritime security, it is extremely crucial to always have an edge over China in the Indian ocean region. Growing Chinese presence in the Indian ocean region is a huge security issue.

General Studies – 3

Economic Development

1. Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.
2. Inclusive growth and issues arising from it.
3. Government Budgeting.
4. Major crops-cropping patterns in various parts of the country, - different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.
5. Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System- objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing.
6. Food processing and related industries in India- scope' and significance, location, upstream and downstream requirements, supply chain management.
7. Land reforms in India.
8. Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.
9. Infrastructure: Energy, Ports, Roads, Airports, Railways etc.
10. Investment models.

Technology

11. Science and Technology- developments and their applications and effects in everyday life.
12. Achievements of Indians in science & technology; indigenization of technology and developing new technology.
13. Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-technology and issues relating to intellectual property rights.

Environment & Bio-diversity

14. Conservation, environmental pollution and degradation, environmental impact assessment.

Disaster Management & Security

15. Disaster and disaster management.
16. Linkages between development and spread of extremism.
17. Role of external state and non-state actors in creating challenges to internal security.
18. Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention.
19. Security challenges and their management in border areas - linkages of organized crime with terrorism.
20. Various Security forces and agencies and their mandate.

Economic Development

Agriculture Census

News: Recently, the Ministry of Agriculture & Farmers' Welfare launched "The Eleventh Agricultural Census (2021-22)."

About:

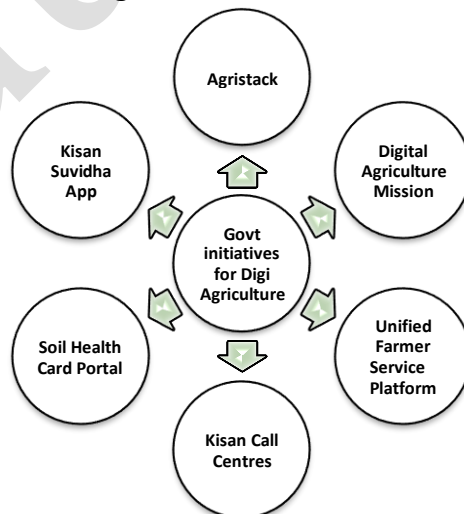
- Agriculture Census is conducted every 5 years.
- Entire Census operation is conducted in three phases and operational holding is taken as a statistical unit at micro level for data collection.
- Agricultural Census is the main source of information on a variety of agricultural parameters at a relatively minute level, such as the number and area of operational holdings, their size, class-wise distribution, land use, tenancy and cropping pattern, etc.
- The field work of the agricultural census will start in August 2022. This is the first time that data collection for agricultural census will be conducted on smartphones and tablets, so that data is available in time.

How will work be carried out during 11th census?

- Use of digital land records like land title records and survey reports
- Collection of data through app/software using smartphone/tablet.
- Complete enumeration of all villages in states with non-land records during Phase-I as done in states having land records.
- Real time monitoring of progress and processing.
- Most of the States have digitized their land records and surveys, which will further accelerate the collection of agricultural census data. The use of digitized land records and the use of mobile apps for data collection will enable the creation of a database of operational holdings in the country.

What is Digital agriculture?

- It involves use of Information and Communication technology and data ecosystem to support the development and delivery of timely, targeted information and services to make farming profitable and sustainable while delivering safe, nutritious and affordable food for all.
- For example, the practice of **Precision agriculture** where inputs are utilized in precise amounts to get increased average yields, compared to traditional techniques of agriculture. Such practice can only be done if prerequisite data is available that can be processed for betterment of farmers.
- Use of **Biotechnology in agriculture** helps in several ways which includes altering living organisms, improve plants or animals, or develop microorganisms for specific agricultural uses.
- Use of **Digital technologies** that can help reach out to farmers in no time during emergencies, use of robotics and drone technologies etc.



India International Bullion Exchange (IIBX)

News: PM Modi launched India's 1st IIBX at International Financial Services Centres (IFSC) at GIFT City (Gujarat)

What is a Bullion?

- Bullion refers to physical gold and silver of high purity that is often kept in the form of bars, ingots, or coins.
- Bullion can sometimes be considered legal tender and is often held as reserves by central banks or held by institutional investors.
- The Government had notified in August 2020 about the Bullion Spot Delivery Contract and Bullion Depository Receipt (BDR) with underlying Bullion as Financial Product and related services as Financial Services.

What is a Bullion exchange?

- A bullion Exchange is a market through which buyers and sellers trade gold and silver as well as associated derivatives.
- There are various bullion markets around the world with the London Bullion Market known as the primary global market trading platform for gold and silver.

About IIBX:

- India International Bullion Exchange (IIBX) was first announced in the Union Budget 2020 for easing the Gold Import by Jewelers in India.
- It is a platform that not only enrolls jewelers to trade on the exchange, but has also set up necessary infrastructure to store physical gold and silver.
- IIBX will facilitate efficient price discovery with the assurance of responsible sourcing and quality, apart from giving impetus to the financialisation of gold in India.
- IFSCA is entrusted with notifying the eligible qualified jewelers in India for directly importing gold through IIBX.
- India is the world's 2nd biggest consumer of Gold after China.

About GIFT City:

- GIFT (Gujarat International Finance Tec-City) City is located in Gandhinagar, Gujarat.
- It consists of a multi-service Special Economic Zone (SEZ), which houses India's first International Financial Services Centre (IFSC) and an exclusive Domestic Tariff Area (DTA).
- GIFT city (Gujarat International Finance Tec-City) is envisaged as an integrated hub for financial and technology services not just for India but for the world.
- IFSCA is the unified regulator for the development and regulation of financial products, financial services and financial institutions in International Financial Services Centers (IFSCs) in India.
- The social infrastructure in the city includes a school, medical facilities, a proposed hospital, GIFT City business club with indoor and outdoor sports facilities. It also includes integrated well-planned residential housing projects making GIFT City a truly 'Walk to Work' City.

Trivia for Prelims - Recently, Zimbabwe's central bank has introduced gold coins ('Mosi-oa-Tunya') that it hopes will ease citizens' demands for foreign currency.

Financial Inclusion Index

News: The Reserve Bank of India has released the Composite Financial Inclusion Index (FI-Index) for the year ended 31st March 2022.

About:

- It is a comprehensive index incorporating details of banking, investments, insurance, postal as well as the pension sector in consultation with the government and respective sectoral regulators.
- It was developed by the RBI in 2021, without any 'base year', and is published in July every year.
- It intends to capture the extent of financial inclusion across the country.

Parameters:

- It captures information on various aspects of financial inclusion in a single value ranging between 0 and 100, where 0 represents complete financial exclusion and 100 indicates full financial inclusion.
- It comprises three broad parameters (weights indicated in brackets) viz., Access (35%), Usage (45%), and Quality (20%) with each of these consisting of various dimensions, which are computed based on a number of indicators.

Key Findings:

- India's Financial Inclusion Index has improved to 56.4 from 53.9 in the previous year 2021.
- The improvement has been seen across all its sub-indices (Access, Usage and Equality).

What does the Index indicate?

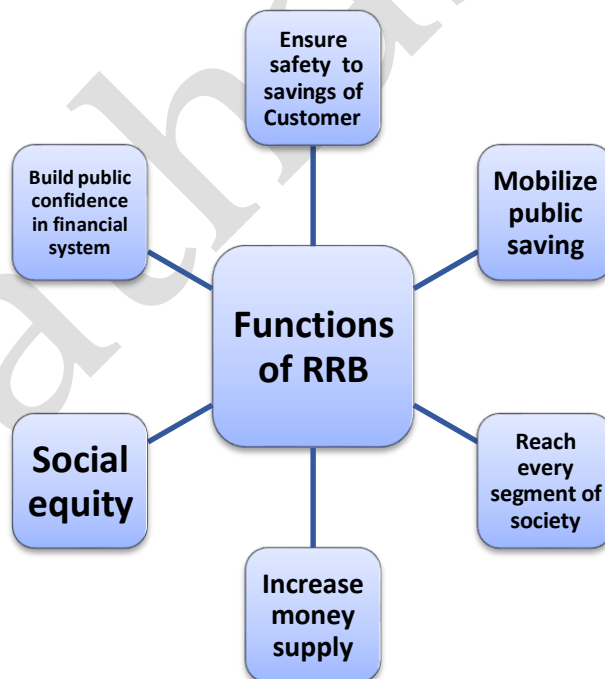
- It provides information on the level of financial inclusion and measures financial services for use in internal policy making.
- It can be used directly as a composite measure in development indicators.
- It enables fulfilment of G20 Financial Inclusion Indicators requirements.
- It also facilitates researchers to study the impact of financial inclusion and other macroeconomic variables.

Regional Rural Banks

News: Recently, a meeting was held between the finance minister and the heads of banks to discuss various reforms in Regional Rural Banks (RRBs).

About:

- The Regional Rural Banks (RRBs) were established in 1975 under the provisions of the Ordinance promulgated on 26th September 1975 and Regional Rural Banks Act, 1976.
- RRBs are financial institutions which ensure adequate credit for agriculture and other rural sectors.
- The RRBs combine the characteristics of a cooperative in terms of the familiarity of the rural problems and a commercial bank in terms of its professionalism and ability to mobilize financial resources.



Suggestions made by Government:

- Move towards digitization and also offer internet banking services to the customers.

- Focus on lending to MSME sector.
- Urged sponsor banks to make clear roadmap to further strengthen RRB's and share best practices with RRB's.

What are the issues faced by RRB's?

- Rise in cost of operations of RRB's when compared to scheduled commercial banks.
- Most of the RRB's operate in losses as they don't have enough business.
- Work of RRB's is mostly restricted to offering government schemes like DBT.
- At present only 19 RRBs have internet banking facilities and 37 have mobile banking licenses.
- Existing regulations allow only those RRBs to offer internet banking which maintains minimum statutory capital to risk-weighted assets ratio (CRAR) of more than 10%.

What is the way forward?

- There is a need to have a common framework for RRBs, along the lines of core banking solution (CBS), so that all of them can provide online banking services to their customers and further, enhance their outreach and profitability. There should be more facilities like internet banking etc.
- Further, they need to increase their efficiency and touch various other dimensions of banking, like providing loans to merchants, MSME's that could increase their profitability.

RBI's recent rate hikes

News: A 50 bps rate hike has become 'new normal' for central banks, says Shaktikanta Das.

About:

- With the latest hike from the six-member Monetary Policy Committee (MPC), the repo rate now stands at 5.4 per cent.
- Repo is the rate at which the central bank lends short-term funds to banks. Changes in this rate typically gets transmitted to the broader banking system.
- This is set to increase lending rates and EMIs of existing home loan customers.
- While the RBI Governor maintained a GDP growth of 7.2 per cent for FY23, inflation has been projected at 6.7 per cent for the year 2022-23.

Reasons behind recent rate hikes:

- With inflation expected to remain above elevated levels, the MPC felt further calibrated withdrawal of monetary policy accommodation and accordingly it decided to increase repo rate by 50 basis point. Calibrated accommodation is to keep inflation within the target along with supporting growth.
- CPI has eased from its surge in April but remains uncomfortably high and above the target of 6 percent.
- Core inflation remains at elevated levels and the volatility in global markets is impinging on domestic markets including currency.

What are the external factors that will continue to impact India?

- The inflation trajectory will depend upon global markets and geopolitical developments. There has been some let up in commodity prices and softening in global food prices.
- While household inflation expectation has eased, it remains at elevated levels. If the monsoon is normal, and at an average crude oil price of \$105 per barrel for the year, inflation is projected at 6.7 per cent in 2022-23.
- The International Monetary Fund has highlighted recession risk and revised global growth, for emerging market economies the risks are magnified as they have domestic inflation concerns and there will be impact of monetary tightening worldwide.
- Continued volatility of external markets is also likely to impact India as it always does.

The Energy Conservation (Amendment) Bill, 2022

News: The lower house of the parliament on August 8 passed the Energy Conservation (Amendment) Bill, 2022, which aims to boost clean energy and help in achieving India's commitments towards climate change.

Objectives for introducing the Bill:

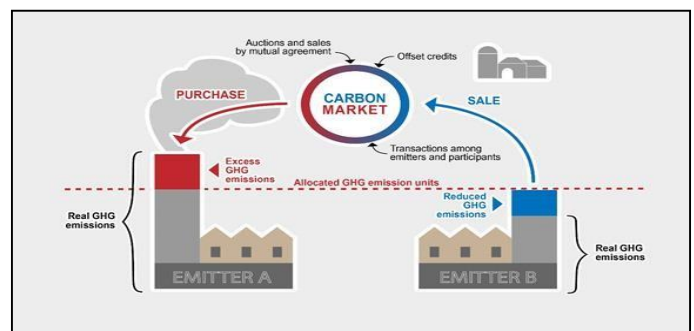
- To ensure that prescribed proportion of energy used by certain industrial, commercial and even residential consumers mandatorily comes from renewable or no-fossil fuel sources.
- To establish a domestic carbon market and facilitate trade in carbon credits. (The carbon market is likely to be on the lines of the European ETS, facilitating the buying and selling of carbon credits.

Key provisions:

- **Obligation to use non-fossil sources of energy**
 - The Act empowers the central government to specify energy consumption standards. The Bill adds that the government may require the designated consumers to meet a minimum share of energy consumption from non-fossil sources.
 - Designated consumers include industries such as mining, steel, cement, textile. Transport sector including railways and Commercial buildings.
 - Failure to meet the obligation for use of energy from non-fossil sources will be punishable with a penalty of up to Rs 10 lakh.
- **Energy conservation code for buildings**
 - The bill provides for energy conservation and sustainable building code. This new code will provide norms for energy efficiency and conservation, use of renewable energy, and other requirements for green buildings.
- **Carbon Markets**
 - The Bill empowers the central government to specify a carbon credit trading scheme.
 - Carbon credit implies a tradeable permit to produce a specified amount of carbon emissions.
 - The central government or any authorized agency may issue carbon credit certificates to entities registered under and compliant with the scheme. The entities will be entitled to purchase or sell the certificate.
 - Any other person may also purchase a carbon credit certificate on a voluntary basis.
- **Application to residential buildings**
 - Under the Act, the energy conservation code applies to commercial buildings - (i) erected after the notification of the code, and (ii) having a minimum connected load of 100 kilo watts (kW) or contract load of 120 kilo volt ampere (kVA).
 - The amended bill ensures that new energy conservation and sustainable building code shall also apply to the office and residential buildings meeting the above 2 criteria's.
- **Standards for vehicles and vessels**
 - Energy consumption standards will be specified for motor vehicles, ships and other water vessels.
 - The government will be empowered to prohibit the manufacture or import of vehicles and water vessels that do not conform to the prescribed energy standards.
- **Governing council of BEE**
 - The bill provides for governing council of members between 31 and 37.
 - It increases the number of secretaries to 12. It also provides for up to seven members representing industries and consumers.

What are Carbon markets and how do trade of carbon credits work?

- Carbon markets allow the trade of carbon credits with the overall objective of bringing down emissions.
- These markets create incentives to reduce emissions or improve energy efficiency.
- For example, an industrial unit that outperforms emission standards can gain credits, and unit that



is struggling to attain the prescribed standards can buy those credits and show compliance with the standards.

- The unit that did better on the standards earns money by selling credits, while the buying unit is able to fulfil its operating obligations.

Government's initiative to support Food Processing sector

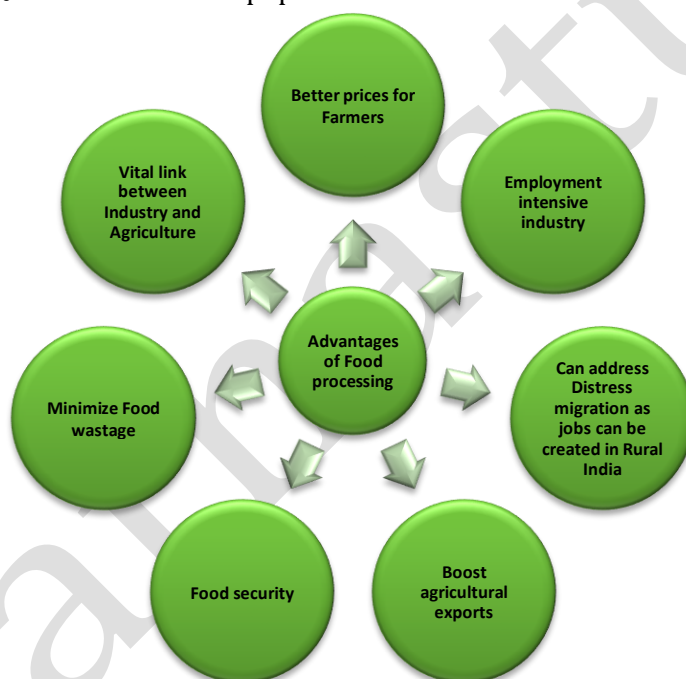
News: Recently, in a written reply to the Rajya Sabha Minister of State (Food Processing Industries) stated the initiatives taken by the Government to support the Food Processing Sector.

What is Food processing?

- Any form of value addition in food in the form of sorting, grading, packaging, branding etc is called food processing. Apart from adding value to the product, food processing also increases its utility.
- For example, Tomatoes that are not fit for consumption but may still be good enough to be processed can be used to make tomato puree i.e. Sauce! This is food processing.

Where does the Potential lie?

- India is the world's second-largest producer of fruits and vegetables, after China, yet just 2% of the crop gets processed.
- Despite a significant manufacturing base, the processing is little (less than 10 percent). Processing accounts for around 2% of fruits and vegetables, 8% of marine products, 35% of milk, and 6% of poultry.
- India has the world's greatest livestock population, with 50% of buffaloes and 20% of cattle, but only around 1% of the entire meat population is transformed into value-added goods.



List of Initiatives taken by Government to help the Food processing sector:

- Inclusion of food & agro-based processing units and cold chain as an agricultural activity under Priority Sector Lending (PSL) norms in April 2015. Thereby helping it to gain cheap credit and attention of banks.
- 100% Foreign Direct Investment (FDI) approval under automatic route has been permitted for the food processing sector.
- A Special Food Processing Fund of Rs. 2000 crore was set up with National Bank for Agriculture and Rural Development (NABARD) to provide affordable credit for investments in setting up Mega Food Parks (MFP) as well as processing units in the MFPs.
- 22 Mega food parks are operational in the country. The Scheme of Mega Food Park aims at providing a mechanism to link agricultural production to the market by bringing together farmers, processors and

retailers so as to ensure maximizing value addition, minimizing wastage, increasing farmer's income and creating employment opportunities particularly in rural sector. For example, Gujarat agro mega food park is operational in Surat.

Electricity (Amendment) Bill, 2022

News: The government has tabled the Electricity (Amendment) Bill 2022 in the Lok Sabha and then referred it to the parliamentary standing committee on energy for wider consultation.

Key Provisions:

- **Advantage Customers**
 - It's advantage for customers because the bill allows for multiple DISCOMS in the same area. This will not only provide an added option for customers but shall also boost competition and subsequently quality. The new suppliers can use existing supply lines.
 - Regulator must decide in 90 days or the application will be deemed to be approved.
 - It will end distribution monopolies and improve the viabilities of business.
- **Benefits to DISCOMS**
 - There will be 'mandatory' fixing of minimum as well as maximum tariff ceilings by the 'appropriate commission' to avoid predatory pricing by power distribution companies and to protect consumers.
 - It aims to ensure graded and timely tariff revisions.
- **Potential for clean environment**
 - Under the previous act SERCs are empowered to specify renewable purchase obligations(RPO) for discoms. RPO refers to the compulsory procurement of a certain percentage of electricity from renewable sources.
 - As per the Bill, RPO should not be below a minimum percentage prescribed by the central government or DISCOMS may face a penalty.
 - Promotion of green energy
- **Cross-subsidy Balancing Fund**
 - Cross-subsidy refers to the arrangement of one consumer category subsidizing the consumption of another consumer category. E.g. commercial consumer's subsidies residents or farmers. The state government will set up such a fund.
- The Bill seeks to strengthen payment security mechanisms and give more powers to regulators.

What are the concerns surrounding the Bill?

- 'Electricity' is a state subject and any legislation on it should be in consultation with the state government. However, no consultation was done before introducing the bill.
- Provision to encourage competition may lead to more entities entering lucrative and urban areas, while loss-making areas may continue to be underserved.
- Fear of end of subsidies by farmers.
- Privatization of distribution companies may result in job losses and there is a fear that the Bill might result in the privatization of profits and the nationalization of losses
- Multiple distribution licensees may lead to a situation similar to the telecom sector where monopoly companies will destroy the public sector and smaller companies.

India's strong Economic Fundamentals

News: The following article talks about how strong Economic fundamentals and demographic composition of India can help India become a prosperous economy in the next two decades.

What are the strong fundamentals that fuels our economic growth?

- In 2021, the number of real-time digital payment transactions in India was almost threefold that of China. The digital revolution will unlock the country's entrepreneurial spirit. India ranks 3rd on the startup ecosystem in the world!
- The policy initiatives on infrastructure development (e.g. Bharatmala, Sagarmala, The PM Gati Shakti Plan)
- There is increased mobility of labor, capital, and raw materials which could spur economic growth even in most interior parts of the country.
- Niti Ayog's report pointed out that India can utilize demographic dividend for nearly the next 20 years. India's workforce can contribute to economic development through increased labour supply and higher productivity.
- The quality of rural life in India has increased. For example, rural India's access to clean fuel for cooking increased from 18% of the population in 2012 to 54% in 2020.

What India must do to sustain its economic growth and increase its per capita income 4 fold?

- India's GDP growth needs an average annual growth rate of 7% in the next 25 years
- Higher growth for laggard states - States like Bihar and Uttar Pradesh must grow at a much higher rate to catch up with more prosperous states like Gujarat and Haryana.
- Speed up the privatization of the loss-making public sector banks as a market-based banking sector will be in a solid position to allocate capital efficiently and productively across different sectors of the economy.
- It will lead to the creative destruction of underperforming companies, and will eventually pave the way for sustained economic growth. For example, how private sector banks are making inroads even in the rural India at the cost of underperforming Public sector banks.

Atal Pension Yojana

News: As per the Ministry of Finance's new direction, all income-tax payers will not be eligible to join APY from October 1.

About:

- Launched in 2015, the scheme aimed at creating a universal social security system for all Indians (mainly focused on the poor, under-privileged and workers in the unorganized sector). It has over 2 crore subscribers
- Who are eligible? - A bank account holder in the age group of 18 to 40 years.
- Benefits - Minimum monthly pension of Rs.1000 to 5000 per month after the age of 60 years. In case of death, the spouse will get a guaranteed pension for a lifetime.
- Nodal agency - Pension Fund Regulatory and Development Authority (PFRDA) (Statutory authority to administer the National Pension System (NPS), under the Ministry of Finance)
- NPS is a government-sponsored pension scheme (launched in 2004) for government employees as well as any individual citizen of India (both resident and non-resident) in the age group of 18-65.

The status of Indian economy

News: This article will talk about how Indian economy has evolved over the years, what challenges it has overcome and the issues that continue to persist to this day.

Background:

- The newborn nation was highly impoverished, thanks to centuries of colonial exploitation.
- It was critically dependent on foreign aid for food and forex and had an average life expectancy of only 32 years.
- The level of illiteracy was very high.

What is the status today?

- India is today the **third largest economy** in terms of **purchasing power parity**, and in terms of the nominal exchange rate of the dollar, India is the sixth largest economy.

- It holds the **fifth largest stock of foreign exchange** and is a **net lender** to the International Monetary Fund, a far cry from having to go with a begging bowl to the IMF on the brink of forex bankruptcy in 1991.
- It has grown at an average rate of **7% per annum for the past 40 years**, growing from a size of \$189 billion in 1980 to nearly \$3 trillion today. This growth rate is about 2% lower than that of China over the same period but represents a higher rate of return when compared with the investment rate of the GDP.
- The level of extreme poverty is down sharply from nearly 50% to possibly single digits, and life expectancy has **more than doubled** since 1947.
- The foreign investor is **confident** that even with **twin deficits** (fiscal and external), the growth of the economy, driven by **demography and dynamism**, can pay for the deficits.
- India's robust democracy stands in sharp contrast to the authoritarian regime of its more affluent northern neighbor. India has witnessed largely bloodless and peaceful transfer of power 16 times something that other former colonial, developing countries can only envy.
- **Indian workers** send nearly **100 billion dollars** of inbound remittance, which strengthens the Indian economy. In an indirect way, it is like India's labor export income.
- India has witnessed rise of several unicorns in the past few years, the growth of e-commerce and digital payments has helped Indian startup economy grow significantly.
- India's **trade to GDP ratio**, an indicator of its **openness** is higher than the United States. It is now the world's leading exporter of software and an outsourcing powerhouse.

What needs to be addressed?

- Unemployment remains a huge challenge, as the youth still scramble for government jobs. The government disclosed in Parliament recently that 220 million Indians had applied for just seven lakh government jobs in the past seven years.
- Despite PDS, India's ranking in the world hunger index is abysmal, signifying the lopsided distribution of economic growth.
- Labour force participation rate is low, alarmingly so for women. Job creation is priority number one, even as nearly 70% of industrial jobs are vulnerable to becoming extinct, thanks to automation and robotics.
- India was more inward-looking and influenced, by the Soviet planning model of development. One could argue, with hindsight, that it should have been abandoned much earlier than when we actually did. But, it did pay dividends in terms of infrastructure and green revolution.
- Inequality in income, wealth, and access to quality education and health facilities is widening.
- India also missed the bus, unlike her East Asian neighbors, on capitalizing on labor-intensive export-led growth. But after the shock of 1991, the economy opened up dramatically.

What should be the way forward?

- To generate 10 million jobs annually, we need lakhs of new enterprises to be born. That calls for ease of doing business, especially in areas such as dispute resolution and contract enforcement.
- Judicial reform is as urgent as job creation.
- India is the fastest-growing large economy, proud of its democratic foundations, but much work remains to be done.

UDAN scheme completes 5 years

News: Recently UDAN (UdeDeshkaAamNagrik), a Regional Connectivity Scheme of the Ministry of Civil Aviation has completed 5 years of success since the launch of its first flight by the Prime Minister on 27th April 2017.

About:

- Ude Desh Ka Aam Naagrik (UDAN) was launched as a Regional Connectivity Scheme (RCS) under the Ministry of Civil Aviation in 2016.
- It was formulated based on the review of The National Civil Aviation Policy (NCAP)-2016 and it was planned to remain in force for a period of 10 years.
- Under this Scheme, Regional Connectivity Fund (RCF) was created, which funds the Viability Gap Funding (VGF) requirements of the scheme through a levy on certain domestic flights. VGF means a grant one-time

or deferred, provided to support infrastructure projects that are economically justified but fall short of financial viability.

Key Achievements of UDAN:

- There were 74 operational airports in 2014 which has increased to 141 by now.
- 68 underserved/unserved destinations which include 58 Airports, 8 Heliports & 2 Water Aerodromes have been connected under UDAN scheme.
- With 425 new routes initiated, UDAN has provided air connectivity to more than 29 States/ UTs across the country.
- More than one crore passengers have availed the benefits of this scheme till August 2022.
- RCS-UDAN was awarded the Prime Minister's Award for Excellence in Public Administration under Innovation Category for the year 2020.
- Republic Day Tableau for 26th January 2022 on UDAN was adjudged as the Best Tableau by the Ministry of Defense.

How has the scheme evolved over the years?

- **UDAN 1.0** - 5 airlines companies were awarded 128 flight routes to 70 airports (including 36 newly made operational airports).
- **UDAN 2.0** - In 2018, the Ministry of Civil Aviation announced 73 underserved and unserved airports. For the first time, helipads were also connected under phase 2 of the UDAN scheme.
- **UDAN 3.0** - Inclusion of tourism routes, seaplanes and bringing in North-eastern region under the coverage of UDAN.
- **UDAN 4.0 and UDAN 4.1** - Inclusion of some places within Lakshadweep Islands, Sagarmala seaplane services were started.
- **KRISHI UDAN** - It was launched for value realization of agriculture products especially in Northeastern Region (NER) and tribal districts
- **Lifeline UDAN** - Launched for transportation of medical cargo during pandemic.
- **International UDAN** - Here, the plan is to connect India's smaller cities directly to some key foreign destinations in the neighborhood.

Matsyasetu Mobile app

News: The Union Minister for Fisheries launched the Online Market Place feature, **Aqua Bazar**, in the MatsyaSetu mobile app during the ninth general body meeting of the National Fisheries Development Board.



About:

- The app was developed by the Indian Council of Agricultural Research ICAR-Central Institute of Freshwater Aquaculture (ICAR-CIFA), Bhubaneswar, with the funding support of the National Fisheries Development Board (NFDB), Hyderabad through the Pradhan Mantri Matsya Sampada Yojana (PMMSY).

- Through this platform, any registered vendor can list their input materials.
- The listings are categorized into the following major categories, fish seeds, input materials, services, jobs, and table fish. Every listing will contain detailed information about the product, price, available quantity, supply area, etc. along with the seller's contact details.
- The needy farmers/stakeholders can contact the vendors and fulfill their procurements. It also allows the fish farmers to list their grown table-size fish/fish seeds for sale with an option to indicate the date of availability along with the price offer.

Importance and need for this intervention:

- The online marketplace will help the fish farmers and stakeholders to source the inputs such as fish seeds, feed, medicines, etc., and services required for fish culture as well as farmers can also list their table-size fish for sale.
- It will certainly help the farmers to receive more business inquiries from buyers or buyer agents who procure fish, paving the way for increased awareness about the market situation and better price realization of farmers' produce.
- The application provides an option to fish farmers as majority of them face issues in selling their produce in the market and their network is limited to only a few buyers/agents.
- Delay in obtaining critical inputs such as fish seeds, fish feed ingredients, additives during the crop season can interrupt productivity of fish culture operation. The application may come in handy here.

One Nation, One Fertilizer

News: To bring about uniformity in fertiliser brands across the country, the government issued an order directing all companies to sell their products under a single brand name of 'Bharat'. It will be sold under fertilizer subsidy scheme named 'Pradhanmantri Bhartiya Janurvarak Pariyojana' (PMBJP)

Key details about the order:

- All fertiliser bags, whether containing urea or di-ammonium phosphate (DAP) or muriate of potash (MOP) or NPK will sport the brand name 'Bharat Urea', 'Bharat DAP', 'Bharat MOP' and 'Bharat NPK' irrespective of the company that manufacturers (private or public)
- A single brand name and the logo of Pradhan Mantri Bhartiya Janurvarak Pariyojana (PMBJP) will have to be displayed on the bag. The central government grants subsidies annually to the fertiliser companies and PMBJP.

Reasons why government made the changes:

- The maximum retail price of urea is currently fixed by the government, which compensates companies for the higher cost of manufacturing or imports incurred by them. Companies cannot avail subsidy if they sell at MRPs higher than indicated by the government.
- Through the Fertilizer (Movement) Control Order, 1973 the government also decides where they can sell.
- When the government is spending vast sums of money on fertilizer subsidies, deciding where and at what price companies can sell, they would want to take credit and send that message to farmers.

Potential drawbacks:

- It will disincentivize fertilizer companies from undertaking marketing and brand promotion activities. They will now be reduced to contract manufacturers and importers for the government.
- Currently, in case of any bag or batch of fertilizers not meeting the required standards, the blame is put on the company. But now, that may be passed on fully to the government.

Science & Technology

Private players can use drones for Delivery purpose

News: The government is utilizing the services of drone providers for vaccine delivery, an inspection of oil pipelines and power transmission lines, agricultural spraying, etc. Private players can now also do so.

Background:

- The government of India on 25 August last year notified the Drones Rules, 2021 to provide the necessary regulatory framework for the commercial use of drones.
- A month later, the central government further liberalised the scope of Drone rules by introducing the Production-Linked Incentive (PLI) scheme to promote the growth of drone manufacturing by private companies.
- The scheme provides for an incentive of Rs 120 crores, spread over three financial years. The PLI rate is 20% of the value addition over three financial years. As per government orders, PLI for a manufacturer shall be capped at 25% of the total annual outlay.
- Earlier, a provisional list of 23 PLI beneficiaries was released on 6th July 2022. The beneficiaries include 12 manufacturers of drones and 11 manufacturers of drone components.

What was the first-ever Drone loan sanctioned by Government?

- The Agri Infra Fund (AIF) on 30 July 2022 sanctioned the first ever drone loan for a Kisan drone manufactured by Garuda Aerospace. AIF functions under the Ministry of Agriculture and Farmers Welfare and has spearheaded many schemes that are farmer-centric.

How do Drones help all sectors of economy?

- From agriculture, and transportation, to defence, drones offer immense benefits to almost all sectors of the economy in the areas of vaccine delivery, surveillance, search and rescue, mapping, law enforcement and more.
- Drone service providers offer services to governments in various ways including vaccine delivery, inspection of oil pipelines and power transmission lines, anti-locust operations, agricultural spraying, the survey of mines, land mapping under SVAMITVA scheme for issuance of digital property cards, etc. Infact, many of these have been especially helpful in remote areas of the country.
- Private players are free to use drones for delivery purposes in accordance with Drone Rules, 2021.

What are some of the regulatory aspects regarding Drone Rules, 2021 that we must know?

Every drone, except for those meant for research, development and testing purposes, is required to be registered and should have a Unique Identification Number (UIN)

Drones are required to have the necessary type certification issued by the Directorate General of Civil Aviation (DGCA)

Drone operations that violate the provisions of the Drone Rules, 2021 are punishable under Rule 49 of the Drone Rules, 2021 as well as provisions of any other law, for the time being in force.

An airspace map of the country is divided into red, yellow and green zones. The operation of drones in red and yellow zones is subject to the approval of Cen Govt and ATC. No approval is required for use of drones in green zones.

Small Satellite Launch Vehicle (SSLV)

News: Recently, SSLV-D1 placed the satellites into a 356×76 km elliptical orbit instead of the 356-km circular orbit, making the satellite unusable.

About:

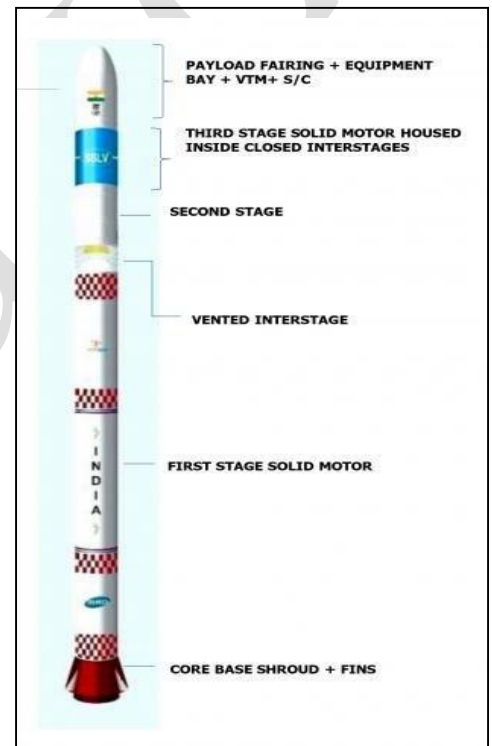
- SSLV is configured with three solid stages 87 t, 7.7 t and 4.5 t.
- The satellite insertion into the intended orbit is achieved through a liquid propulsion-based velocity trimming module.
- SSLV is capable of launching Mini, Micro, or Nanosatellites (10 to 500 kg mass) to a 500 km planar orbit. SSLV provides low-cost access to Space on demand basis.
- It offers low turn-around time, flexibility in accommodating multiple satellites, launch-on-demand feasibility, minimal launch infrastructure requirements, etc.
- SSLV-D1 is a 34 m tall, 2 m diameter vehicle having a lift-off mass of 120 t.

Which satellites were launched via SSLV?

- **EOS-02** is an earth observation satellite designed and realised by ISRO. This microsat series satellite offers advanced optical remote sensing operating in infra-red band with high spatial resolution.
- **AzaadiSAT** is a 8U Cubesat weighing around 8 kg. It carries 75 different payloads each weighing around 50 grams and conducting femto-experiments. Girl students from rural regions across the country were provided guidance to build these payloads. The payloads are integrated by the student team of "Space Kidz India".

Why can SSLV be a game-changer for ISRO?

- It is a rocket that can be assembled within 72 hours, by a team of 5-6 people. While, PSLV and GSLV takes around 70-80 days to assemble.
- It costs at least one-tenth of those currently in use.
- The SSLV would have the capability to carry satellites weighing 500 kg to the low-earth orbits which is one of the most sought after places in space for positioning of satellites.
- It can enable a space launch every week thereby increasing the ISRO's launch rate (approximately around 50-60 per year)
- It is a rocket that caters specifically to the small and micro-satellites that constitute over 90% of all satellites being launched these days.



2nd Generation Ethanol Plant

News: On World Biofuel Day 2022 (August 10th), the government of India announced a 2nd generation (2G) ethanol plant to be set up at the Indian Oil Corporation's refinery in Haryana.

What is Ethanol?

- It is one of the principal biofuels, which is naturally produced by the fermentation of sugars by yeasts or via petrochemical processes such as ethylene hydration.
- It is a domestically produced alternative fuel most commonly made from corn. It is also made from cellulosic feedstock's, such as crop residues and wood.

About Ethanol Plant:

- It will boost India's waste-to-wealth endeavours by utilising about 2 lakh tonnes of rice straw (parali) annually to generate around 3 crore litres of ethanol annually.
- This plant will also utilize maize and sugarcane waste besides paddy straw to produce ethanol.

- The project will provide direct employment to people involved in the plant operation and indirect employment will be generated in the supply chain for rice straw cutting, handling, storage, etc.
- The project will have zero liquid discharge.
- Through reduction in burning of rice straw, the project will contribute to a reduction of greenhouse gases. Thus, earlier the farmers who were being criticized for burning crop waste will also feel proud by helping the country to meet its need for Biofuel.
- 'This plant will not only help reduce air pollution from the Delhi-NCR region but also help generate additional income and green fuel' as quoted by the Prime Minister.

What are other initiatives regarding Biofuels?

- Ethanol Blending Programme - It is aimed at reducing the country's dependence on crude oil imports, cutting carbon emissions and boosting farmers' incomes. The Government of India has advanced the target for 20% ethanol blending in petrol (also called E20) to 2025 from 2030.
- E-100 Project - The ambitious project aims to set up a network for production and distribution of ethanol across the nation.
- Repurpose used cooking oil (RUCO) - The Food Safety and Standards Authority of India (FSSAI) has launched this initiative that will enable collection and conversion of used cooking oil to biodiesel.
- Pradhan Mantri Ji-VAN Yojana, 2019 - The scheme aims to create an ecosystem for setting up commercial projects and boost Research and Development in the 2G Ethanol sector.

India Blockchain Platform

News: India has made several efforts to become a digital society by building a large citizen-scale digital public infrastructure with a significant push from the government.

What is Digital Public Infrastructure?

- It refers to digital solutions that enable basic functions essential for public and private service delivery, i.e., collaboration, commerce, and governance.
- The Government of India and the Reserve Bank of India (RBI) have been promoting simplification and transparency to increase the speed of interaction between individuals, markets, and the government.
- With the commencement of the Digital India mission in 2015, the payments, provident fund, passports, driving licenses, crossing tolls, and checking land records all have been transformed with modular applications built on Aadhaar, Unified Payments Interface(UPI), and the India Stack.

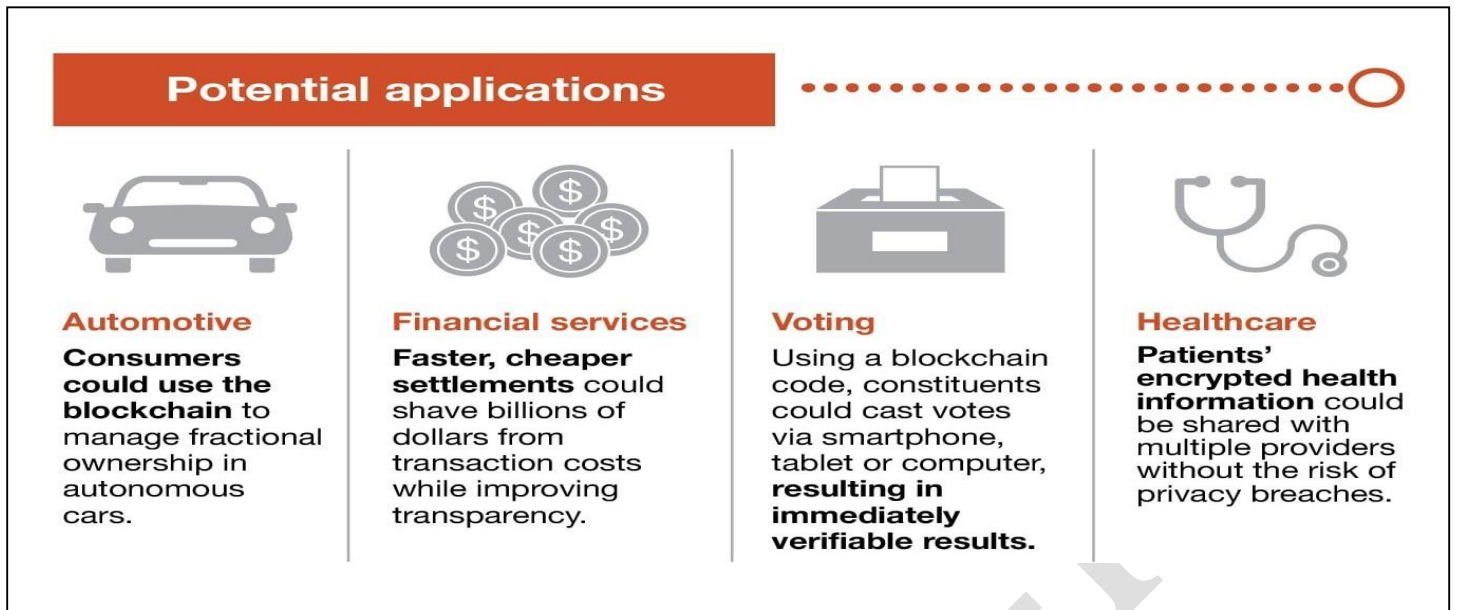
Limitations of Public Digital infrastructure:

- Low availability and affordability - It is well established that digital infrastructure should be designed based on principles of availability, affordability, value, and trust.
- Current digital ecosystem is not interconnected as a design. A technical integration is required to make them conversant and interoperable.
- Validation of data is becoming complex - Information has to travel across multiple systems to complete the interaction and rely on private databases, which makes the validation of data more complex as the network grows, driving up costs and creating inefficiencies.

What is Blockchain technology?

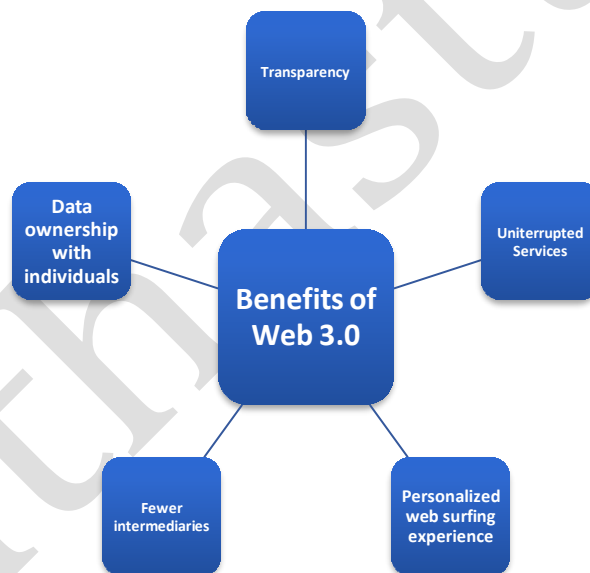
- A blockchain is a distributed database or ledger that is shared among the nodes of a computer network. As a database, a blockchain stores information electronically in digital format.
- Blockchains are best known for their crucial role in cryptocurrency systems, such as Bitcoin, for maintaining a secure and decentralized record of transactions.
- The innovation of a blockchain is that it guarantees the fidelity and security of a record of data and generates trust without the need for a trusted third party.

What are the potential application of Blockchain technology?



What is Web 3.0 and how investing in it can help India's public digital infrastructure?

- Web 3.0 is a decentralized internet to be run on blockchain technology, which would be different from the versions in use, Web 1.0 and Web 2.0.
- It heavily relies on blockchain technology, machine learning, and artificial intelligence (AI). It aims to create a decentralized internet with open, connected, intelligent websites and web applications.



What is the way forward?

- A digital infrastructure based on blockchain technology will transform the digital ecosystem in India and will enable the future of digital services, platforms, applications, content, and solutions.
- The Indian digital community, including fintech, academia, think tanks, and institutions, should focus on supporting research in standards, interoperability, and efficient handling of current known issues with the distributed technologies, e.g., scalability and performance, consensus mechanisms, and auto-detection of vulnerabilities.

Hydrogen Fuel Cell Bus

News: Recently, the Union Minister of State of Science & Technology launched India's first Hydrogen Fuel Cell (HFC) Bus.

What are Hydrogen Fuel Cells?

- A hydrogen fuel cell is an electrochemical device that converts hydrogen into electrical energy.
- Fuel cells work in a similar manner to conventional batteries found in electric vehicles, but they do not run out of charge and don't need to be recharged with electricity. They continue to produce electricity as long as there is a supply of hydrogen.

About HFC Bus:

- The HFC bus has been developed by the Council of Scientific & Industrial Research (CSIR) and KPIT, an Indian Multinational Corporation. The launch of this India's first truly indigenously developed HFC Bus is in tune with the National Hydrogen Energy Mission.
- The fuel cell utilizes Hydrogen and Air to generate electricity to power the bus and the only effluent from the bus is water. Thus, making it possibly the most environmentally friendly mode of transportation.

Why does this innovation matter?

- It forms a core part of PM Modi's Hydrogen Vision which will ensure self-reliant means of affordable and accessible clean energy, meeting climate change goals and creating new jobs as well.
- Green hydrogen is an excellent clean energy source that enables deep decarbonization of difficult-to-abate emissions from the heavy commercial transportation sector among others.
- About 12-14% CO₂ emissions and particulate emissions come from diesel powered heavy commercial vehicles (which are decentralized emissions and hence difficult to capture). Fuel Cell vehicles give zero green-house gas emissions.
- The operational cost of HFC vehicles in rupees per kilometre is lower than diesel powered vehicles.
- Through such innovations, India can transition from being a net importer of fossil energy to becoming a net exporter of clean hydrogen energy.

Tomato Flu

News: Recently, some parts of Kerala reported Tomato Flu among children under five years of age.

About:

- The infection has been named 'tomato flu' because of the red, painful blisters that appear on a patient's body and gradually enlarge to the size of a tomato.
- The 'tomato flu' is caused by Coxsackievirus A 16.
- It belongs to the Enterovirus family. The enteroviruses are an ancient and important group of RNA viruses. Humans are the only hosts for the enteroviruses.
- The infectious disease is caused by intestinal viruses and is rare in adults as they usually have immune systems strong enough to defend them from the virus.

Transmission, symptoms and treatment:



- Tomato flu is **very contagious** and children are at increased risk of exposure to tomato flu as viral infections are common in this age group and spread is likely to be through close contact.
- The **primary symptoms** observed in children with tomato flu are **like those of chikungunya**, which include **high fever, rashes, and intense pain in joints**.
- The **treatment** for tomato flu is similar to the treatment of chikungunya, dengue and hand, foot, and mouth disease. Patients are **advised to isolate, rest, have plenty of fluids, and hot water sponge** for the relief of irritation and rashes.

Space Situational Awareness Observatory

News: India's first commercial Space Situational Awareness (SSA) Observatory will be set up in the Garhwal region of Uttarakhand.

About:

- The observatory will be the first-of-its-kind in the region, set up to augment the start-up's SSA capabilities.
- It will be strategically positioned to serve global space traffic management operations.
- It will assist in tracking any activity in space including that of space debris and military satellites hovering over the region.
- The observatory will bring value to the nation by serving as an essential data source for advancing knowledge of the realm of space.
- It will be able to supplement its space-based sensors in their mission to monitor satellites and debris in orbits ranging from Low Earth Orbit (LEO) to Geosynchronous Earth Orbit (GEO).

What do we understand by SSA and how has India fared in this segment?

- Space Situational Awareness (SSA) refers to keeping track of objects in orbit and predicting where they will be at any given time.
- It is understood to cover 3 areas – Space surveillance and tracking of man-made objects, monitoring near-earth objects and space weather monitoring and forecast.
- At present, India uses a Multi Object Tracking Radar at Sriharikota range (Andhra Pradesh), but it has a limited range.
- Further, for SSA, India depends on data from NORAD (North American Aerospace Defense Command)
- ISRO's efforts towards SSA is coordinated by the SSA Control Centre in Bengaluru and managed by the Directorate of Space Situational Awareness and Management at the ISRO headquarters.

How will the recent SSA observatory help?

- It would improve the effectiveness of tracking and identifying pre-existing Resident Space Objects (RSO).
- The observatory is designed with a capability to track objects as small as 10cm (in size). It would be able to reduce the potential for collisions between satellites and other spacecraft by making more accurate predictions of their location, speed, and trajectory.
- A data gap has been witnessed due to the lack of dedicated SSA sensors between Australia and southern Africa. The observatory will play a vital role in monitoring space activities above the Indian subcontinent, relaying real-time data essential to safeguard the Indian assets.
- Promoting development of such critical technology and infrastructure is necessary towards building indigenous resilient capabilities and compete on a global stage.

Indian women in Science

News: As per the Department of Science and Technology data, the number of women scientists has gone up in over the past two decades.

Key Findings:

- The number of women principal investigators in R&D had risen more than four times from 232 in 2000-01 to 941 in 2016-17.

- The percentage of women among researchers went from 13.9% in 2015 to 18.7% in 2018.
- It is observed that there is good number of participation of women till post-graduate level and then there is a drop at the post-doctoral level. (most research takes place at post-doctoral level)
- Women in Engineering (14.5%) < Women in natural Science (22.5%) < Women in Health (24.5%)

What are the initiatives taken by government to encourage women participation in Science?

- Science, Technology, and Innovation Policy 2020 target of 30 per cent of women at a post-doctoral level by 2030.
- The Gender Advancement for Transforming Institutions (GATI) was launched by the Department of Science & Technology (DST). It will develop a comprehensive Charter and a framework for assessing Gender Equality in STEM (Science, technology, engineering, and mathematics).
- Vigyan Jyoti Scheme (by DST) is intended to create a level-playing field for the meritorious girls in high school to pursue STEM in their higher education. It also offers exposure for girl students from the rural background to help to plan their journey from school to a job of their choice in the field of science.
- Indo-US Fellowship for Women in STEMM (STEM and Medicine).
- KIRAN (Knowledge Involvement in Research Advancement through nurturing) Scheme was launched to encourage women Scientists.

Some of the issues prevalent:

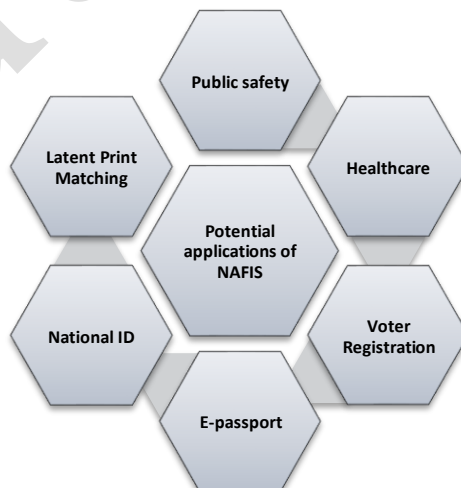
- The 2019 All India Survey on Higher Education shows a significant lag in female participation at doctoral levels, partly owing to the pressures of marriage and family planning.
- World Economic Forum (WEF) ranked India at 135 out of 146 countries in its Global Gender Gap (GGG) Index for 2022.
- Women scientists often have to shoulder a disproportionate burden of academic housekeeping in comparison to their male counterparts.

NAFIS

News: National Automated Fingerprint Identification System (NAFIS) has been launched by the Home Ministry to allow a country-wide search of crime-related fingerprints.

About:

- NAFIS will create a unique 10-digit national fingerprint number (NFN) for each person arrested for the crime. Using the database of fingerprints, different crimes can be linked to NFN.
- It will “provide the much-needed unique identifier for every arrested person in the CCTNS (Crime and Criminal Tracking Network & Systems)
- It is developed by National Crime Records Bureau (NCRB) and is already implemented in Madhya Pradesh to identify deceased persons.



Battery Waste Management Rules, 2022

News: The Ministry of Environment, Forest and Climate Change published the Battery Waste Management Rules, 2022 to ensure environmentally sound management of waste batteries and replace the Batteries (Management and Handling) Rules, 2001.

Battery waste management rules, 2022:

- Producers (including importers) of batteries are responsible for the collection and recycling/refurbishment of waste batteries and the use of recovered materials from waste into new batteries.
- Setting up of new industries and entrepreneurship in collection and recycling/refurbishment of waste batteries.
- It envisions mandatory minimum percentage of recovery of materials from waste batteries. This will prompt newer technologies and investment in the recycling and refurbishment industry and create new business opportunities.
- Create a Mechanism of centralized online portal for the exchange of EPR certificates between producers and recyclers/refurbishers to fulfil the obligations of producers.
- Use of a certain amount of recycled materials for new batteries which will reduce the dependency on new raw materials and save natural resources.
- Environmental compensation will be imposed for non-fulfilment of Extended Producer Responsibility targets, responsibilities and obligations set out in the rules.
- The funds collected under environmental compensation shall be utilized in collection and refurbishing or recycling of uncollected and non-recycled waste batteries.
- Online registration & reporting, auditing, and a committee - To monitor and implement rules and to take measures required for removal of difficulties.



Environment & Bio-diversity

International Tiger Day

News: 29th July is celebrated globally as International Tiger Day. A recent IUCN assessment suggests that tiger numbers have increased by 40% since 2005 at the global.

Tiger in India:

- The fourth cycle of the All India Tiger Estimation 2018 estimated 2,967 tigers or 75 per cent of the global tiger population in the nation (the biggest increase since 2006)
- Of the 2967 tigers, 526 are in Madhya Pradesh (highest).
- National Tiger Conservation Authority is the nodal agency.

Steps taken by India to conserve its Tigers:

- Increased Conservation efforts - From 28 in 2006, the number of tiger reserves went up to 50 in 2018, spread across 18 states. Recognition of tiger landscapes and the importance of the corridors and their physical delineation at the highest levels of governance. Integrating tiger conservation with developmental activities using the power of reliable information in a Geographic Information System database.
- Organized poaching rackets have been all but crushed. As per Tiger estimation reports, there has been no organized poaching by traditional gangs in Central Indian landscapes since 2013.
- Villages were shifted outside core areas in many parts of the country which led to the availability of more inviolate space for tigers. In addition, water and fodder facilities were provided within the reserve so that fewer animals stray out of these reserves and minimize animal-human conflict.
- India has built the world's largest animal underpass to funnel tigers safely beneath a highway. Finished in 2018, the NH44 has 9 specially built underpasses, ranging in length from 50 to 750 meters, designed to allow animals to pass beneath the roads.
- Lidar-based survey technology is being used to deal with the challenge of human-animal conflict that was causing the death of animals. Lidar is a method of measuring distance by illuminating the target with laser light and measuring the reflection with a sensor.
- Measures such as aerial surveillance, economic valuation of Tiger reserves and maintaining online database of tiger crime has helped tremendously in our tiger conservation efforts.

However, some issues are observed as far as Indian approach is concerned. They are:

- Large-scale habitat destruction and decimation of prey populations are the major long-term threats to the existence of the dwindling tiger population in the country.
- Man-animal conflict - As per government data, in 2019, 58 people lost their lives to human-wildlife conflict and 181 were injured.
- Three tiger reserves in India - Mizoram's Dampa reserve, West Bengal's Buxa reserve and Jharkhand's Palamau reserve have no tigers left.
- The tiger reserves are having poor interconnectivity with each other due to which the gene exchange among the tiger population can barely take place, increasing the risk of disease susceptibility.
- Smaller population leads to higher chances of extinction -Populations that are smaller than 100 breeding individuals have a high probability of extinction. Small and isolated populations face a high probability of extinction. This is because there is a high chance of inbreeding that will expose disadvantageous genetic variants that are present in all genomes.

The tiger is a unique animal which plays a pivotal role in the health and diversity of an ecosystem. However, there is a need for further community involvement through tiger reserve that is not built with fences and armed patrol guards, but around a cultural model of conservation like including local tribes like Idu Mishmi in Arunachal Pradesh, who consider Tigers as their elder brother and sacred.

Reduction in Groundwater levels

News: Ground water levels in some parts of the Country are declining because of continuous withdrawal necessitated by increased demand of fresh water for various uses, vagaries of rainfall, increased population, industrialization & urbanization (as per report of Central Ground water board)

What is present status of Groundwater reduction in India?

- According to the CGWB, with 230 billion metre cubes of groundwater drawn out each year for irrigating agriculture lands in India, many parts of the country are experiencing rapid depletion of groundwater.
- The total estimated groundwater depletion in India is in the range of 122–199 billion metre cubes.
- 89% of ground water extracted is used in the irrigation sector, making it the highest category user in the country.
- This is followed by ground water for domestic use which is 9% of the extracted groundwater. Industrial use of ground water is 2%.
- 50% of urban water requirements and 85% of rural domestic water requirements are also fulfilled by ground water.

What are the reasons for groundwater reduction?

- Green Revolution enabled water intensive crops to be grown in drought prone/ water deficit regions, leading to over extraction of groundwater.
- Frequent pumping of water from the ground without waiting for its replenishment leads to quick depletion.
- Subsidies on electricity and high MSP (Minimum Support Price) for water intensive crops.
- Industries Requirement - Water contamination as in the case of pollution by landfills, septic tanks, leaky underground gas tanks, and from overuse of fertilizers and pesticides leading to damage and depletion of groundwater resources.
- Inadequate regulation of groundwater encourages the exhaustion of groundwater resources without any penalty.
- Water being a State subject, initiatives on water management including water conservation and water harvesting and making available adequate drinkable water to citizens in the Country is primarily States' responsibility.

What are the initiatives taken by Central government to manage Groundwater levels?

- It is promoting the concept of conjunctive use of surface and groundwater based on the village/gram panchayat level water security plan prepared in a scientific manner through participation of communities/stakeholders.
- Atal Bhujal Yojana for sustainable management of ground water resources with community participation.
- Jal Shakti Abhiyan was launched in 2019 in 256 water stressed districts in the country to improve water availability including ground water conditions in these areas. It has special emphasis on creation of recharge structures, rejuvenation of traditional water bodies, intensive afforestation etc.
- The CGWB has taken up Aquifer Mapping and Management Programme. It is aimed to delineate aquifer disposition and their characterization for preparation of aquifer/area specific groundwater management plans with community participation.
- Atal Mission for Rejuvenation and Urban Transformation (AMRUT) focuses on development of basic urban infrastructure in the AMRUT cities, such as water supply, sewerage management, storm water drainage, green spaces & parks, and non-motorized urban transport.

Report on Natural Resource accounting by November 2022

News: The Comptroller and Auditor General of India has stated that it would be coming up with report on Natural resource accounting (NRA) by November 2022.

What is NRA?

- It is the process of estimating the value of natural resource depletion and environmental degradation due to economic activities. In recent years, it became an important environmental assessment tool.

- It is based on the idea that ‘measurement of resource leads to its better management’.

What is the importance of NRA?

- It highlights the relation between economy and environment. It measures the non-renewable damage to the environmental resources and helps analyze development in real terms.
- It helps policymakers to understand the potential impact of their decisions.
- Asset and flow accounts have been recognized as a useful framework for monitoring, measuring and analyzing climate change.
- 4 out of 17 SDG's can be directly related to management of natural resources and their accounting.
- Besides fulfilling the SDGs, it would help India become a part of the group of elite countries in generating Asset Accounts.

Challenges associated with NRA:

- Dearth of training and capacity building among state officers.
- Limitations in preparing the asset accounts - mapping the periodicity of data.
- Multiple agencies are involved in data collection for resources; it may give rise to the issues of data sharing/data conflict.

Initiatives taken at Global level to promote NRA

- UN General Assembly resolution titled, "Transforming our world; the 2030 agenda for sustainable development", requires the preparation of Natural Resource Accounts. India is a signatory to this resolution.
- The UN, in 2012, adopted the System of Economic and Environmental Accounting (SEEA). It is the latest internationally accepted framework for NRA.
- India is one of the 5 countries taking part in the National Capital accounting and valuation of ecosystem services (NCAVES) Project. It is an umbrella term covering efforts to make use of an accounting framework to provide a systematic way to measure and report on stocks and flows of natural capital.

Addition of 10 Ramsar Sites

News: Recently, India has added 10 more Ramsar sites, or wetlands that are of international importance, taking the number of such sites to 64.

- Just in the past week, India added 5 new wetlands of international importance – The Karikili Bird sanctuary, Pichavaram Mangrove and Pallikaranai Marsh reserve (all in Tamil Nadu), Sakhya sagar (MP) and Pala wetland (Mizoram).

Following are the list of new Ramsar Sites:

Name	State	Key facts to know
Gulf of Mannar Marine Biosphere Reserve	Tamil Nadu	It is the first Marine Biosphere Reserve in South & South -East Asia. And It is one of the most biologically diverse regions in India.
Vembannur Wetland Complex	Tamil Nadu	It is a human-made inland tank. It forms the southernmost tip of peninsular India further it forms part of the Important Bird and Biodiversity Area (IBA)
Vedanthangal Bird Sanctuary	Tamil Nadu	It is one of the oldest bird-protected areas in Tamil Nadu.
Vellode Bird Sanctuary	Tamil Nadu	
Koonthankulam Bird Sanctuary	Tamil Nadu	This is the largest reserve for breeding resident and migratory

Udhayamarthandapuram Bird Sanctuary	Tamil Nadu	water birds in South India. It forms part of Central Asian flyway. The notable species observed at the site are oriental darter, glossy ibis, grey Heron & Eurasian spoonbill.
Satkosia Gorge	Odisha	It spreads along the magnificent gorge over the mighty river Mahanadi. Satkosia is the meeting point of two biogeographic regions of India, the Deccan Peninsula and the Eastern Ghats, contributing immense biodiversity.
Sirpur Wetland	Madhya Pradesh	Provides rich source of water and helps groundwater recharge in downstream areas.
Nanda Lake	Goa	
Ranganathittu Bird Sanctuary	Karnataka	Important riverine wetland, rich in biodiversity.

Challenges faced by Solar PV manufacturing in India

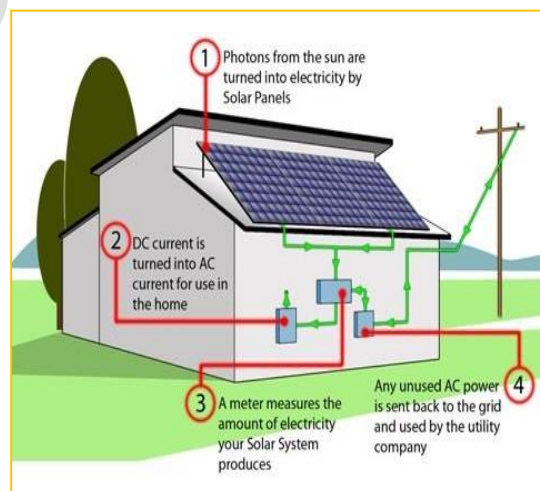
News: From less than 10 MW in 2010, India has added significant solar PV capacity over the past decade, achieving over 50 GW by 2022. By 2030, India is targeting about 500 GW of renewable energy deployment, out of which 280 GW is expected from solar PV.

What are Solar PV Panels and how do they work?

- A typical solar PV value chain consists of first fabricating polysilicon ingots which need to be transformed into thin Silicon wafers that are needed to manufacture the PV mini-modules.
- When the sun shines onto a solar panel, energy from the sunlight is absorbed by the PV cells in the panel. This energy creates electrical charges that move in response to an internal electric field in the cell, causing electricity to flow.

What are the challenges in Solar PV manufacturing in India?

- Indian manufacturers are still dependent on older Al-BSF technology (Aluminum Back Surface Field Solar Cells) (low efficiencies of 18-19%), whereas worldwide PV cell efficiency is greater than 21%.
- India's current solar module manufacturing capacity is limited to 15 GW per year. India has no manufacturing capacity for solar wafers and polysilicon ingots, and currently imports 100% of silicon wafers and around 80% of solar cells.
- India is more of an assembly hub than a manufacturing one. Several raw materials such as silicon wafers, metallic pastes of silver and aluminium to form the electrical contacts too, are almost 100% imported.
- India is dependent on China for the Silicon wafers (the most expensive raw material). More than 90% of the world's solar wafer manufacturing currently happens in China.
- India has hardly invested in creating centres for the try and test solar technologies in a cost-effective manner.
- India lost the case in WTO (challenged by US PV manufacturers) over India's import duty.



What can India do?

- India will have to work on technology tie-ups to make the right grade of silicon for solar cell manufacturing
- India should move up the value chain by making components locally that could drive the price and quality of both cells and modules
- India needs to create industry-like centres to work on specific technology domains with clear roadmaps and deliverables for the short and long term. For example, PV Panel manufacturing park.
- Strong industry-academia collaboration in an innovative manner to start developing home-grown technologies.

Government initiatives:

- Government has made it mandatory to procure modules only from an approved list of manufacturers (ALMM) (till now only India-based manufacturers have been approved) for projects that are contracted to state/ central government grids
- India has implemented a 40% duty on the import of modules and 25% duty on the import of cells
- PLI scheme to support manufacturing capex.

Katchal Island

News: Recently, a study by the National Aeronautics and Space Administration (NASA), highlighted the loss of mangrove cover on Katchal island, part of India's Nicobar archipelago.

What are mangroves?

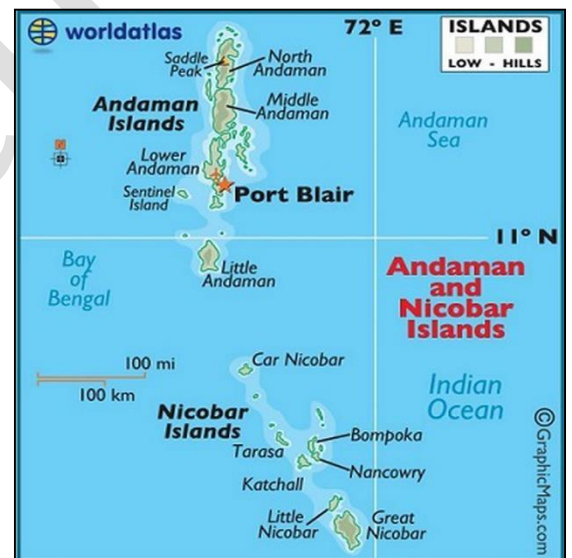
- According to FAO, Mangroves are trees and bushes growing below the high water level of spring tides which exhibits remarkable capacity for salt water tolerance.

Characteristics of Mangroves:

- They can survive under extreme hostile environments such as high salt and low oxygen conditions. With their roots submerged in water, mangrove trees thrive in hot, muddy, salty conditions that would quickly kill most plants.
- The best locations of mangroves are where abundant silt is brought down by rivers or on the backshore of accreting sandy beaches.
- They require high solar radiation and have the ability to absorb freshwater from saline/brackish water.
- It produces pneumatophores (blind roots) to overcome respiration problem in the anaerobic soil conditions.
- They exhibit viviparity mode of reproduction where seeds germinate in the tree itself. This is an adaptive mechanism to overcome the problem of germination in saline water.

Importance of Mangroves:

- Mangrove plants have additional special roots such as prop roots, pneumatophores which help to impede water flow and thereby enhance the deposition of sediment in areas, stabilize the coastal shores, provide breeding ground for fishes.
- They moderate monsoonal tidal floods and reduce inundation of coastal lowlands.
- It prevents coastal erosion.
- It protects coastal land from Tsunami, hurricanes and floods.
- They enhance natural recycling of nutrients.
- It supplies woods, fire wood, medicinal plants and edible plants to local people.
- They provide physical habitat and nursery grounds for a wide variety of marine organisms, many of which have important recreational or commercial value.



What are the findings of the study?

- The study shows the real extent of tidal wetlands lost between 1992 and 2019 on Katchal Island in the Nicobar Islands in the eastern Indian Ocean.
- The mangroves had the highest ratio of loss to gain among the three types of tidal wetlands it studied. The other two were tidal flats and marshes.
- Mangroves showed an estimated net decrease of 3,700 square kilometers between 1999 and 2019.
- Despite the losses, there have been gains of 2,100 square kilometers indicating the considerable dynamism of these systems.

Reasons for Loss:

- There was an earthquake with a magnitude of 9.2 during the Tsunami of 2004, during which the islands experienced up to 3 meters (10 feet) of land subsidence. This submerged many mangrove ecosystems, resulting in a loss of more than 90% of mangrove extent in some areas.
- Sea level rise, shoreline erosion, storms, altered sediment flow, and subsidence.
- Some 27% of the losses and gains were directly caused by human activity. They alter wetlands through development, water diversion projects, or by converting the land to agriculture or aquaculture.



World Elephant day

News: The World Elephant Day is celebrated every year on **12th of August**, with the aim to acknowledge Elephants' significance in our ecosystem.

Why do we celebrate the day?

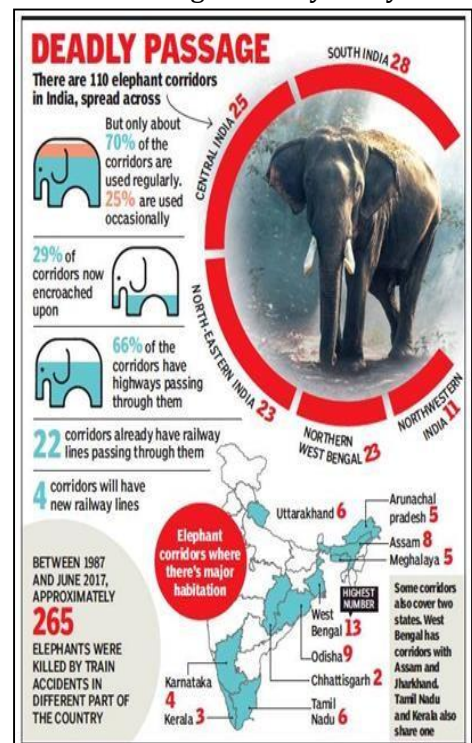
- Elephants are considered sacred in many cultures and are essential for maintaining a healthy ecosystem. They are an intelligent species; they have the biggest brain of any land animal.
- The elephant population has reduced by 50% over the past 75 years. The current population estimates indicate that there are about 50,000 -60000 Asian elephants in the world. More than 60% of the population is held in India.
- The campaign World Elephant Day was initiated in 2012 to bring awareness to the disturbing situations of African and Asian elephants. The objective of this campaign is to create a sustainable environment where animals are not exploited and taken care of.

What is the conservation status?

- On the IUCN red list of Threatened species, African Forest Elephant – Critically endangered, African Savanna Elephant – Endangered and **Asian Elephant is listed as Endangered.**
- Convention of the Migratory species – Appendix I
- Schedule I of Wildlife (Protection) Act, 1972.

What are the initiatives taken by Government to protect Elephants?

- **Project Elephant** was launched in 1991-92 as a Centrally



Sponsored Scheme of the Ministry of Environment and Forests. Estimation of wild elephant population in the year 2007, 2012 and 2017. Karnataka has the highest number of elephants followed by Assam and Kerala.

- **Elephant Reserve** is a management entity notified by the State Governments as per recommendation of Government of India. It includes Protected Areas, forest areas, corridors and private/reserve lands. **Agasthiyamalai (Tamil Nadu) will be the country's 32nd elephant reserve.**
- **Mike Programme** – It stands for Monitoring of Illegal Killing of Elephants programme. It is mandated by Conference of Parties (COP) resolution of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). It was started to provide information needed for elephant range States to make appropriate management and enforcement decisions, and to build institutional capacity within the range States for the long-term management of their elephant populations.

Ramsar Sites

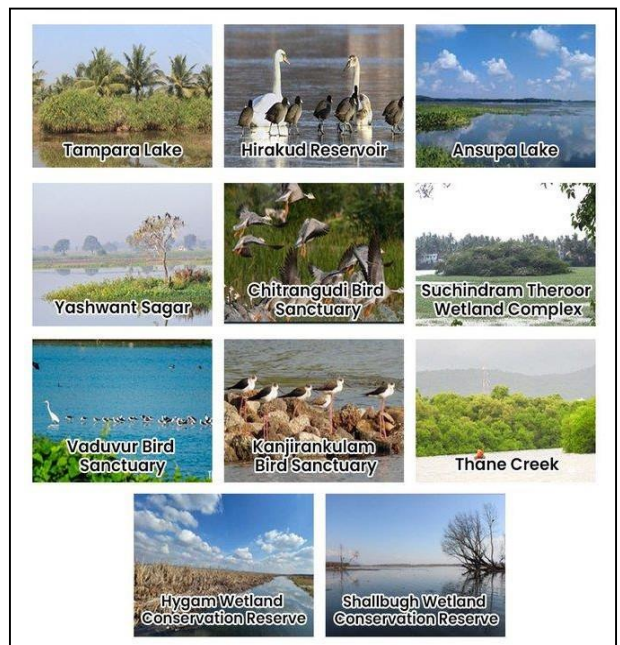
News: Government has added 11 more wetlands to the Ramsar list of wetlands.

About:

- Many of the sites are already notified under the Union government's Wetland (Conservation and Management) Rules 2017 meaning development activities within the waterbody as well as within its zone of influence are regulated.
- Being designated Ramsar Site means now the sites will be on the global map for their importance in providing ecological services.

Following are the Ramsar sites added most recently:

- **Tampara Lake – Odisha**
 - Tampara Lake is among the most prominent freshwater lakes in the State of Odisha. It is called 'Tampara' as the depression on the ground gradually filled with rainwater from catchment flow and was called "Tamp" by the British and subsequently termed "Tampra" by the locals.
 - The wetland is an important habitat for vulnerable species such as Cyprinus carpio, common pochard (Aythya ferina), and river tern (Sterna aurantia).
- **Ansupa Lake – Odisha**
 - Ansupa Lake is the largest freshwater lake in Odisha situated in the Cuttack district.
 - The wetland is an oxbow lake formed by River Mahanadi.
 - The wetland provides a safe habitat to:-
 - Three threatened bird species– Rynchops albicollis (EN), Sterna acuticauda (EN) and Sterna aurantia (VU)
 - Three threatened fish species– Clarias magur (Clariidae) (EN), Cyprinus carpio (Cyprinidae) (VU) and Wallago attu (VU).
- **Hirakud reservoir – Odisha**
 - Hirakud Reservoir, the largest earthen dam in Odisha started operating in 1957. The reservoir is important for livelihoods of fishermen, tourism, irrigation and production of hydro-energy.
 - The wetland also provides important hydrological services by moderating floods in the Mahanadi delta, the ecological and socio-economic hub of the east coast of India.
- **Thane Creek – Maharashtra**
 - Creek is a narrow, sheltered waterway, especially an inlet in a shoreline or channel in a



marsh. Ulhas River is the largest source of water for the creek

- Thane creek is fringed by mangroves on both banks & comprises around 20% of the total Indian mangrove species.
- The area is an important part of the wetland complex of the Central Asian Flyway of the birds and has been categorized as an Important Bird Area (IBA).
- **Shallbugh Wetland Conservation reserve - J&K**
 - The area has extensive reedbeds of *Phragmites communis* and *Typha angustata*, and rich growth of *Nymphaea candida* and *N. stellata* on open water. It serves as an abode to more than four lakh resident and migratory birds of at least 21 species.
- **Hygam Wetland Conservation Reserve - J&K**
 - Hygam Wetland falls within the River Jhelum basin and plays a significant role as a flood absorption basin, biodiversity conservation site, eco-tourism site, and livelihood security for the local communities.
 - Consequent to the high rate of siltation, Hygam Wetland has lost its wetland characteristics to a large extent and in many places changed its profile into a landmass.
- **Yashwant Sagar - Madhya Pradesh**
 - It is one of the two Important Bird Areas (IBA) in the Indore region as well as one of the most important birding sites in the Malwa region of Madhya Pradesh.
 - Presently it is mainly used for water supply to the city of Indore and is also being used for fish culture on a commercial scale.
 - Yashwant Sagar is considered to be a stronghold of the vulnerable Sarus Crane in central India. Due to its vast shallow reed beds, the wetland is considered heaven to a large number of winter migratory birds.
- **Vaduvur Bird Sanctuary - Tamil Nadu**
 - It is a large human-made irrigation tank and shelter for migratory birds as it provides a suitable environment for food, shelter, and breeding ground.
- **Kanjirankulam Bird Sanctuary - Tamil Nadu**
 - It is notable as a nesting site for several migratory heron species that roost in the prominent growth of babul trees there.
 - The site qualifies as an IBA as the threatened Spot-billed Pelican *Pelecanus philippensis* breeds here.
 - The wetland supports IUCN RedList vulnerable avian species like *Sterna aurantia* (River Tern)
- **Chitrangudi Bird Sanctuary - Tamil Nadu**
 - The wetland is a protected area since 1989 and declared a Bird Sanctuary.
 - It is an ideal habitat for winter migratory birds.
- **Suchindram Theroor Wetland Complex - Tamil Nadu**
 - It is part of the Suchindrum-Theroor Manakudi Conservation Reserve.
 - It is declared an Important Bird Area and lies at the southern tip of the Central Asian flyway of migratory birds. This is a man-made, inland Tank and is perennial.

Security & Disaster Management

UNSC meet on Counterterrorism

News: India will host diplomats and officials from all 15 countries of the United Nations Security Council, including China, Russia and the United States, for a special meeting on terrorism, in Delhi and Mumbai in October.

How is the meeting likely to help Indian cause?

- India is expected to highlight cross-border threats from Pakistan and Afghanistan at the meeting, which will come two months before India completes its tenure as an elected member of the UNSC (2021-22).
- In addition, India has been pushing for the UN members to adopt a Comprehensive Convention on International Terrorism (first proposed in 1996), which is likely to be raised during the meeting. (India had proposed the initiative)
- The event will showcase India's role as a victim of terrorism as well as a country at the forefront of global counter-terrorism efforts.
- They said the CTC meeting in India could also pave the way for a possible visit to New York by the Prime Minister in December, where India will be the President of the UNSC for the entire month.

What is Comprehensive convention on International terrorism?

- It calls for universal definition of terrorism. It does not like to differentiate based on good terrorist and bad terrorist.
- Ban an all groups regardless of country of operation, cut off access to fund and safe havens.
- Prosecution of all groups, including cross-border groups.
- Amending domestic laws to make cross-border terror an extraditable offence.

Why has CCIT been blocked?

- According to US and Allies they are concerned over definition of terrorism, including acts done by US soldiers in international interventions without UN mandate.
- According to Latin American countries they are concerned over international humanitarian laws and human rights being ignored.
- OIC – Concerned that the convention will be used to target Pakistan and restrict rights of self-determination groups in Palestine.

Personal Data Protection Bill

News: The government of India has withdrawn the Personal Data Protection Bill from Parliament as it considers a 'comprehensive legal framework' to regulate the online space to boost innovation in the country through a new bill.

What are the reasons for withdrawals of the Bill?

- The tech companies had questioned a proposed provision called data localization, under which it would have been mandatory for companies to store a copy of certain sensitive personal data within India.
- Prohibition on export of undefined "critical" personal data.
- Some activists had criticized a provision that allowed the government and its agencies blanket exemptions from adhering to any and all provisions of the Bill.
- The Bill was also seen as being too compliance intensive by many startups of the country. The fear was it may hamper their growth and increase compliance costs.
- The government says following the recommendations of Joint committee of Parliament (JCP) they are working on a comprehensive legal framework.

What were the recommendations made by JCP?

- Non-personal data should also be included within the ambit of the law.
- Data protection authority (DPA) which is to be setup under the law to regulate how data is to be managed and processed, should be bound by directions of the Union government in all cases – not just questions of policy.
- Companies will need to report a data breach within 72 hours, additional compliance for companies that deal exclusively with children’s data.
- The JCP’s report also recommended changes on issues such as regulation of social media companies, and on using only “trusted hardware” in smartphones, etc.
- It proposed that social media companies that do not act as intermediaries should be treated as content publishers, making them liable for the content they host.

Is the explanation given by the government justified?

- The government suggested that it has withdrawn the bill as it seeks to implement JPC recommendations in the revamped bill. However, the JPC has nowhere suggested a withdrawal in favour of a ‘comprehensive legal framework’, but on the contrary pitched the bill to ‘be passed’.
- Secondly, the government fears that compliance burden can impede innovation and growth in the country. However, detailed reasoning is available in the Srikrishna committee’s report as well as a growing international consensus suggesting that next-generation innovation in technology needs data protection.
- Thirdly, with the imperfections within the bill and even the JPC report, there exists a reasonable argument that if passed into law, it may institutionalize bad privacy practices. Over here seeking changes in the law at a later date may be difficult. Such a reasoning fails to recognize that institutional memory develops through reasonable due diligence and experience. Legislative foresight is limited and no law is perfect, which is why there exist parliamentary amendments and judicial review.
- Lastly, there is omission of the contours of this ‘comprehensive legal framework’ and any timeline assured from the government which makes it reasonable to ask who benefits from further delay and a status quo in the unregulated data collection and exploitation of personal data of millions of Indians.

What are the things to remember from prelims perspective?

- **Justice A P Shah committee report on Privacy**
- **Justice K.S Puttuswamy vs Union of India** – Article 21 → Right to privacy recognized as Fundamental right
- **Justice BN Srikrishna committee report**
- **Section 43A of IT act, 2000** – Protects user data from misuse but it is applicable to only corporate entities and not on government agency.

National Register of Citizens

News: Recently, the Manipur Assembly has resolved to implement the National Register of Citizens (NRC) and establish a State Population Commission (SPC).

What is NRC?

- NRC is a register prepared in respect of each village, showing the houses or holdings in a serial order and indicating against each house or holding the number and names of persons staying therein.
- The register was first prepared after the 1951 Census of India and since then it has not been updated until recently.
- It has been updated in Assam only for now and the government plans to update it nationally as well.
- The purpose is to separate ‘illegal’ immigrants from ‘legitimate’ residents.
- Registrar General and Census commissioner of India is the Nodal agency.

What prompted the Manipur assembly to think of implementing NRC?

- Significant increase in population of the state from 1971 to 2011.
- There is fear that there is strong possibility of a huge influx of non-Indians, especially Myanmar nationals primarily Kukis-Chin communities.
- The northeastern States have been paranoid about 'outsiders', 'foreigners' or 'alien cultures' swamping out their numerically weaker indigenous communities.
- Manipur, home to three major ethnic groups, is no different. These ethnic groups are the non-tribal Meitei people and the tribal Naga and Kuki-Zomi groups.
- There has been a history of conflict among these three groups, but the NRC issue has seemingly put the Meiteis and the Nagas on the same page. They claim that an NRC is necessary because the political crisis in neighbouring Myanmar, triggered by the military coup in February 2021, has forced hundreds of people into the State from across its 398-km international border.

What is the Inner-Line Permit (ILP) system?

- An Inner Line Permit is a document that allows an Indian citizen to visit or stay in a state that is protected under the ILP system. Initially, the ILP was applicable to three North-eastern states – Nagaland, Arunachal Pradesh and Mizoram.
- In December 2019, **Manipur became the 4th North-Eastern state** to be brought under the ILP system.
- No Indian citizen can visit any of these states unless he or she belongs to that state, nor can he or she overstay beyond the period specified in the ILP.
- The concept comes from the colonial area. Under the **Bengal Eastern Frontier Regulation Act, 1873**, the British framed regulations restricting the entry and regulating the stay of outsiders in designated areas. This was to protect the Crown's own commercial interests by preventing "British subjects" (Indians) from trading within these regions. In 1950, the Indian government replaced "British subjects" with "Citizen of India". This was to address local concerns about protecting the interests of the indigenous people from outsiders belonging to other Indian states.

An **ILP is issued by the state government concerned**. It can be obtained after applying either online or physically. It states the dates of travel and also specifies the particular areas in the state which the ILP holder can travel to.

New Defence systems for the Army

News: Defence Minister Rajnath Singh handed over several new defence systems, including the F-INSAS, the Nipun mines, and the Landing Craft Assault (LCA), to the Army.

What is F-INSAS system?

- F-INSAS stands for Future Infantry Soldier as a system, a programme for infantry modernization aimed at increasing the operational capability of the soldier.
- As part of the project, soldiers are being equipped with modern systems that are lightweight, all-weather-all-terrain, cost-effective and low maintenance.

What are Nipun Mines?

- Nipun mines are indigenously designed and developed anti-personnel mines, termed by the DRDO as 'soft target blast munition'. These mines are meant to act as the first line of defense against infiltrators and enemy infantry. They have been developed with the efforts of the Armament Research and Development Establishment.

What is Landing Craft Assault?

- The Landing Craft Assault (LCA) is meant to serve as a replacement for the boats with limited capabilities currently in use in the Pangong Tso lake. The LCA, which has been indigenously developed by Goa-based Aquarius Shipyard Limited, is said to have better launch, speed and capacity to operate across water obstacles in eastern Ladakh.

General Studies – 4

Ethics, Integrity & Aptitude

1. Ethics and Human Interface: Essence, determinants and consequences of Ethics in-human actions; dimensions of ethics; ethics - in private and public relationships. Human Values - lessons from the lives and teachings of great leaders, reformers and administrators; role of family society and educational institutions in inculcating values.
2. Attitude: content, structure, function; its influence and relation with thought and behaviour; moral and political attitudes; social influence and persuasion.
3. Aptitude and foundational values for Civil Service, integrity, impartiality and non-partisanship, objectivity, dedication to public service, empathy, tolerance and compassion towards the weaker-sections.
4. Emotional intelligence-concepts, and their utilities and application in administration and governance.
5. Contributions of moral thinkers and philosophers from India and world.
6. Public/Civil service values and Ethics in Public administration: Status and problems; ethical concerns and dilemmas in government and private institutions; laws, rules, regulations and conscience as sources of ethical guidance; accountability and ethical governance; strengthening of ethical and moral values in governance; ethical issues in international relations and funding; corporate governance.
7. Probity in Governance: Concept of public service; Philosophical basis of governance and probity; Information sharing and transparency in government, Right to Information, Codes of Ethics, Codes of Conduct, Citizen's Charters, Work culture, Quality of service delivery, Utilization of public funds, challenges of corruption.
8. Case Studies on above issues

Euthanasia

News: In a recent incident, a Bengaluru woman had gone to Delhi HC to stop a friend's euthanasia trip to Europe. According to a petition filed before the court, the man has been suffering from Chronic Fatigue Syndrome since 2014 and is allegedly planning to travel to Switzerland for physician-assisted suicide as the option is not available in India.

What is Euthanasia?

- The term "euthanasia" is derived from Greek, literally meaning "good death".
- Euthanasia refers to the termination of a person's life, to end their suffering, usually from an incurable or terminal condition. It is for this reason that euthanasia was also coined the name "mercy killing".
- There are 2 types of Euthanasia. First, Active Euthanasia which is deliberate act, usually through the intentional administration of lethal drugs, to end an incurably or terminally ill patient's life. Second, Passive Euthanasia, which means deliberate withholding or withdrawal of life-prolonging medical treatment resulting in the patient's death.

Why is there need for Euthanasia?

- It is argued that as part of our human rights, there is a right to make our own decisions and we have a right to a dignified death.

- Advocates of euthanasia express the view that the fundamental moral values of society, compassion and mercy, require that no patient be allowed to suffer unbearably, and mercy killing should be permissible.
- Supporters of euthanasia claim that active euthanasia is not morally worse than passive euthanasia – the withdrawal or withholding of medical treatments that result in a patient’s death. In line with this view, it is argued that active euthanasia should be permitted just as passive euthanasia is allowed.

Views of people that are against Euthanasia:

- Society views an action which has a primary intention of killing another person as inherently wrong, in spite of the patient’s consent. Thus, Euthanasia is considered at par with murder.
- Religious proponents argue that it is the sole prerogative of God to bestow life and to cause death.
- It has also been argued that patients’ requests for euthanasia are rarely autonomous, as most terminally ill patients may not be of a sound or rational mind.
- If euthanasia were to become an accepted practice, it may give rise to situations that undermine the rights of vulnerable patients.
- Active voluntary euthanasia and physician-assisted suicide undermine the doctor-patient relationship, destroying the trust and confidence built in such a relationship.

Euthanasia in India:

- In the **Gian Kaur v. State of Punjab** it was held by the five judge bench of the Supreme Court that the “right to life” guaranteed by Article 21 of the Constitution does not include the “right to die”.
- In India, like almost in other countries, euthanasia has no legal aspect.

The Debate around Moonlighting

News: Recently, Swiggy launched a moonlighting policy allowing its employees to work on their passion projects outside of their work (calling it a step towards a “remote-first organization”). While on the other hand, Rishad Premji, Wipro’s chairman, termed the concept of moonlighting in the tech industry as cheating.

What is Moonlighting?

- Moonlighting simply refers to the act of having a second job, or working for extra projects, gigs, or employers, that counts as a secondary source of income, outside one’s working hours.



Why is it fair?

- Moonlighting allows workers to work for side projects once they finish their shift timings, without compromising on their primary employment.
- After the company’s shift timings, a person is free to do whatever she/he wants to do as a passion project or side gig.
- Many universities abroad consider such side projects as valuable for admission into professional courses.
- It helps develop extra skills, free time can be put to good use and adds to the income/savings of the households and provides for extra purchasing power as well.

What are arguments against moonlighting?

- There is no overarching law which prohibits a person from doing multiple jobs. However, a person with a similar nature of jobs may spark breach of confidentiality issues.
- There restriction is on double employment under the Factories Act, but not applicable to IT companies in some states.
- An employee is expected to give his complete dedication and efforts for the company she/he works for.
- Side jobs may take away the employee’s productivity.
- Fear of leakage of confidential information of the primary job.
- Some companies have introduced a moonlighting clause that puts a restriction on the double employment of an employee.

Short News for Prelims

Earth Overshoot Day

What is it?

- This is marked as the day when humanity has used all the Biological resources that Earth regenerates during the entire year. This year it falls on 28th July (last year it was 29th July)
- It is calculated by Global Footprint Network.

You may click on the following to read more about Earth Overshoot Day - <https://www.overshootday.org/about-earth-overshoot-day/>

World Hepatitis Day

News: July 28 is marked as World Hepatitis day.

About:

- Hepatitis means inflammation of the liver. The liver is a vital organ that processes nutrients, filters the blood, and fights infections. When the liver is inflamed or damaged, its function can be affected.
- Causes - Heavy alcohol use, toxins, some medications, and certain medical conditions can cause hepatitis.
- Types - It is caused by a group of viruses known as the 'hepatotropic' (liver-directed) viruses and can be of type A, B, C, D and E. It may also be caused by 'Varicella Virus' (which is responsible for Chickenpox)
- Treatment - Hepatitis A and E go away on their own and require no specific antiviral medications. For Hepatitis B and C, effective medications are available. The vaccine is available for Hepatitis B.
- Severity - Acute inflammation of liver presents with sickness which may include jaundice, fever and vomiting. Chronic inflammation of liver lasts more than six months, but essentially shows no symptoms.

Al Najah IV

News: The India-Oman military exercise, 'AL NAJAH-IV', will take place in the Mahajan field firing ranges in Rajasthan from August 1 to 13.

About:

- The fourth edition of India-Oman joint military exercise 'AL NAJAH-IV' between contingents of Indian Army and the Royal Army of Oman is scheduled to take place at the Foreign Training Node of Mahajan Field Firing Ranges from August 1 to 13.
- A 60-member team from the Royal Army of Oman has arrived at the site. The Indian Army will be represented by troops from the 18 Mechanised Infantry Battalion.
- The previous edition of the exercise was organised in Muscat in March 2019.

Chabahar Day Conference

News: Union Shipping Minister Sarbanand Sonowal inaugurated the Chabahar Day conference in Mumbai.



About:

- Dignitaries from Iran, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Afghanistan were present on the occasion.

- In May 2016, India and Iran signed a bilateral agreement in which India would refurbish one of the berths at Shahid Beheshti port, and reconstruct a 600 meter long container handling facility at the port.
- In October 2017, India's first shipment of wheat to Afghanistan was sent through the Chabahar Port.

Chabahar Port

- Chabahar Port is a seaport in Chabahar located in southeastern Iran, on the Gulf of Oman.
- It serves as Iran's only oceanic port, and consists of two separate ports named Shahid Kalantari and Shahid Beheshti, each of which has five berths.
- The Chabahar port is a key pillar of India's Indo-Pacific vision to connect with Eurasia with Indian Ocean Region. The port will also be part of the International North South Transport Corridor network connecting India.
- Iran has given special incentives to increase trade cooperation activities between India and Iran through Chabahar port.

Loktak Lake

News: Manipur government's Loktak Development Authority (LDA) issued a notice to remove/dismantle all 'athaphums' (circular fish culture ponds) and huts on 'phumdis' (floating organic mass) from the lake, in order to safeguard the environment and biodiversity of the lake.

About:

- It is the largest freshwater lake in Northeast India and is famous for the phumdis floating over it.
- Keibul Lamjao National Park is also situated in the same lake. The National Park is the only floating national park in the world and is the last natural refuge for endangered Sangai deer.
- The lake serves as a source of water for irrigation, drinking water supply and hydropower generation. The lake comes under both Ramsar Site and under Montreux record.

Vitamin B1 (Thiamine)

News: The government is promoting the production of Vitamin B1 under the 'Production Linked Incentive Scheme for Bulk Drugs'

About:

- Thiamine is a water-soluble vitamin, an essential micronutrient, which cannot be made in the body.
- It is found in food and commercially synthesized to be a dietary supplement or medication.
- Food sources of thiamine include whole grains, legumes, and some meats and fish.
- Beriberi is a deficiency of thiamin.

INSTC

News: Recently, Containers from Russia's Astrakhan port crossed the Caspian Sea and eventually reach Nhava Shiva port in Mumbai, signaling the launch of the International North-South Transport Corridor (INSTC).



What is INSTC?

- INSTC is a 7,200-km multi-modal transport corridor that combines road, rail and maritime routes connecting Russia and India via Central Asia and Iran.
- The corridor is expected to consolidate the emerging Eurasian Free Trade Area.
- The legal framework for the INSTC is provided by a trilateral agreement signed by India, Iran and Russia at the Euro-Asian Conference on Transport in 2000.

Importance of INSTC

- It can bypass Pakistan thereby giving access to Afghanistan, Central Asia and beyond.
- It reduces freight costs by 30% and the journey time by 40% in comparison with the conventional deep-sea route via the Suez Canal.
- INSTC can shape a north-south transport corridor that can complement the east-west axis of the China-led Belt and Road Initiative (BRI).
- It signals significant shift in approach of Indian Foreign policy from that of Non-alignment to multi-alignment. India is working on QUAD, SCO, INSTC, I2U2 (West Asian Quad)

Google's Street view service

News: Google Street View is launched in ten cities of India under the Guidelines of the National Geospatial Policy (NGP), 2021. NGP 2021 lets Indian companies collect map data and license it to others.

What is Google street view?

- Google Street View provides panoramic 360-degree views from designated roads throughout its coverage area.
- The 10 cities in which this service has been launched include; Bengaluru, Delhi, Mumbai, Chennai, Pune, Nasik, Hyderabad, Vadodara, Amritsar and Ahmednagar.
- As a part of the Street View Services, Google Maps will showcase speed limits data, that will be shared by traffic authorities. This facility will start from Bengaluru.
- In Bengaluru, Google will also partner with traffic police in a bid to deliver models that optimise traffic light timings in a better manner.

Issues with Street view

- Over the years a lot of privacy and other issues have been raised regarding Street View.
- A lot of these stem from people's faces and other identifiable aspects, like car number plates and house numbers, being captured by the camera and being misused in different ways.

- There have also been security concerns about this kind of view being available, especially for sensitive locations.
- Along with India, Google has had issues with the local authorities in countries like Austria, Australia and Germany, though it has come back in most of these locations.

What is National Geospatial policy 2021?

- The National Geospatial Policy, 2021 liberalizes the geospatial sector and democratizes the datasets generated by use of public funds.
- The Policy seeks to empower citizens and enterprises to create, access and use geospatial data and information for addressing developmental needs of the country while also safeguarding its security interests.
- It provides for augmenting the geospatial ecosystem in the country, as well as globally, by encouraging geospatial knowledge generation, skill sets and expertise etc.

Gujarat Semiconductor Policy 2022-27

News: Gujarat is the first state in India to release a dedicated semiconductor policy. Government has also proposed to develop a special 'Semicon City' as a part of the Dholera Special Investment region.



What are Semiconductors?

- Semiconductors are materials which have a conductivity between conductors and insulators. They can be pure elements, silicon or germanium or compounds; gallium, arsenide or cadmium selenide.

- They are the basic building blocks that serve as the heart and brain of all modern electronics and information and communications technology products.

Gujarat Government's policy

- Under the Gujarat Semiconductor Policy 2022-27, Gujarat Government will provide heavy subsidies on power, water and land tariffs for entrepreneurs who are interested in investing in semiconductors or display fabrication manufacturing in Gujarat.

Coal Reserves in India

News: According to the Inventory of India published by the Geological Survey of India, the total assessed geological coal resource in the country is 352 billion tonnes, putting it among the nations with the highest reserves (currently 5th placed). The bulk of it is relatively low calorific value thermal or non-coking coal (used mostly in thermal power plants)

Why does India depend on import of coal with such high reserves at our disposal?

- Demand outpacing production
- Poor finances of DISCOMS
- Poor logistics
- Limited role of private sector

Nagar Van Yojana

News: The scheme was recently discussed in the parliament.

About:

- To create 400 Urban Forest and 200 Nagar Vatikas in at least 20 hectares of land in the urban areas in the next five years (2020-2025) (on existing forest land or any other vacant land by Urban local bodies)
- It was launched in 2020 and van will be maintained by state governments.
- Funding will be through CAMPA fund (Compensatory afforestation fund act, 2016)
- Warje urban forest in Pune will be taken as role model for the scheme.

Exercise Pitch Black

News: Indian Air Force will join 16 other nations later this month for Exercise Pitch Black, hosted by the Australian Air Force.

About:

- It's a biennial exercise to enhance interoperability and strengthen relationships among participants.
- It will provide Indian Air Force a unique opportunity to exchange knowledge and experience with these nations in a dynamic warfare environment.
- It provides all nations' personnel with experience in working with aircraft, systems, and work practices, in northern Australia's unique environment, that would otherwise be unfamiliar.
- It will take place in the Southern hemisphere which is hosted by the Royal Australian Air Force (RAAF).

Revamped Distribution Sector Scheme

News: RDSS has been launched for DISCOMs.

What is the scheme about?

- RDSS is a reform-based and result-linked scheme to improve the financial sustainability and operational efficiencies of DISCOMs. This is done by financial assistance for the modernization of distribution infrastructure e.g., Smart Prepaid Meters.
- Ministry of Power will be the nodal agency and all state owned DISCOMS will be eligible.
- Time – 2021-22 to 2025-26
- It merges other existing power sector reforms schemes – Integrated Power Development Scheme, DDU Gram Jyoti Yojana, and Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA)

What are the goals?

- Reduce AT&C loss by 12-15%. AT & C loss is nothing but the sum total of technical and commercial losses and shortage due to non-realization of billed amount.
- Reduce financial deficit (average cost of supply-average revenue realized) of DISCOMs to Zero.
- Compulsory installation of smart meters (target of installing 250 million smart meters by 2025)

District Legal Services Authority

News: PM addressed the inaugural session of the 1st DLSA meet. The meeting will deliberate on the creation of an integrated procedure in order to bring homogeneity and synchronisation across DLSAs.

About:

- DLSA has been established to provide free legal aid, organize Lok Adalat, legal literacy for the poor.
- It is established under Legal Services Authorities Act (LSA) 1987.
- District Legal Services Authority is constituted in every District to implement Legal Aid Programmes and Schemes in the District.
- There are 676 DLSA in India headed by a District judge who acts as a chairman of the authority.
- Through DLSAs and State Legal Services Authorities (SLSAs), various legal aid and awareness programmes are implemented by NALSA.
- The DLSAs also contribute towards reducing the burden on courts by regulating the Lok Adalats conducted by NALSA.

What else can the DLSA do?

- As noted by the Prime Minister himself, he raised concerns over the issue of sensitivity towards undertrial prisoners. He said that the District Legal Services Authorities can take up the responsibility of providing legal aid to such prisoners. He also appealed to the District Judges, as Chairpersons of undertrial review committees, to expedite the release of undertrial prisoners.

Udyam Portal

News: Around one crore Micro, Small and Medium Enterprises (MSMEs) have registered on the Udyam portal within a span of 25 months, according to the

Union Minister of Micro, Small, and Medium Enterprises.

About:

- It's an online system for registering MSMEs, launched by the Union MSME ministry.
- Further, it is linked to the databases of the Central Board of Direct Taxes (CBDT) and Goods and Services Tax Network (GSTN).
- It is fully online, does not require any documentation, and is a step towards Ease of Doing Business for MSMEs.
- Udyam registrations are essential for MSMEs to utilize the benefits of schemes for the Ministry of MSME and for Priority Sector Lending from banks.

Anti-Tank Guided Missile

News: Recently, Defence Research and Development Organisation (DRDO) has successfully test fired indigenously developed Laser-Guided Anti-Tank Guided Missiles (ATGM).

About Laser-Guided ATGM:

- The all-indigenous Laser Guided ATGM employs a tandem High Explosive Anti-Tank (HEAT) warhead to defeat Explosive Reactive Armour (ERA) protected armoured vehicles.
- The ATGM has been developed with multi-platform launch capability and is currently undergoing technical evaluation trials from the 120 mm rifled gun of MBT Arjun.

What are some of ATGM in India?

- Helina, Nag, Man-portable Anti-tank guided missile (MPATGM), Smart Stand-off Anti-Tank missile (SANT).

Hellfire R9X missile

News: The US military used its 'secret weapon' - the Hellfire R9X missile ('Ninja missile') - to kill Al Qaeda chief Ayman al-Zawahiri on the balcony of a safe house in Kabul.



About:

- Better known in military circles as the AGM-114 R9X, the Hellfire R9X is a US-origin missile known to cause minimum collateral damage while engaging individual targets.
- It weighs about 45 kg and the missile can also be launched from helicopters, aircraft and Humvees. The range of these missiles varies from 500 metres to 11 km.
- Hellfire means Heliborne, Laser, Fire and Forget Missile
- Al-Zawahiri, an Egyptian surgeon who had a \$25 million bounty on his head, had helped coordinate September 11, 2001, attacks that had killed nearly 3,000 people.

Lawn Bowls Sport

News: In Commonwealth Games 2022, Indian women's team scripted history by winning the country's first-ever Gold Medal in "Women's Four Lawn Bowls" Sport. Our women's team comprised of Rupa Rani Tirkey, Pinki, Nayanmoni Saikia and Lovely Choubey. We defeated South Africa in the finals.

About the sport:

- Lawn bowls is often considered a mix of "Ten-pin Bowling" and the winter sport of "Curling".
- While in ten-pin bowling, the goal is to take down all the pins at the end of a lane.
- In lawn bowling, the team has to get the 'Bowling' (the Ball) closest to a target, which is known as the 'Jack'.
- Bowls are mostly spherical ball-like objects, typically made of wood, rubber or plastic resin, having flattened sides.

How is the game played?

- Players stand on either side of a 600mm long and 360mm wide mat and take turns rolling these bowls in an attempt to get closest to the jack. The jack is either white or yellow in colour and is smaller and lighter than the bowl.
- In the fours event, the first bowler, called the lead, is followed by the second and the third. The last bowler is called the 'skip' and is the leader of the team. Each team member gets two bowls per round.
- Umpires use a device called "Box Measure" which uses a string to measure the distance between the jack and the bowls.



To read more about the history of the sport you may refer to the following link -
<https://theprint.in/sport/what-is-lawn-bowls-the-outdoor-sport-that-gave-india-its-historic-gold-at-commonwealth-games/1066234/>

Red Rot Disease

What is it?

- The red rot disease, which is also known as the cancer of sugarcane crops, can wipe out entire standing crops. The infection can reduce the sugarcane's weight by 29 per cent and result in poor quality of cane. As much as 25-75% sucrose is reduced in diseased cane as compared to the healthy cane.
- Red rot is the most destructive disease of sugarcane. The disease affects every portion of the plant above the ground. The leaves wither gradually downwards with the progress of the disease.

- The fungus that causes the disease is spread by wind, rain, and insects. The disease might persist from one year to the next in the soil, decomposing leaves, or crop stubble that is left over after ratooning. When a farmer plants canes that are already infected, the disease will also spread to the field.



Symptoms:

- The affected canes leaf changes its color, from green to orange and then to yellow in the third or fourth leaf and after that, the leaves start drying from bottom to top.
- If the fungal microorganisms enter the leaf sheath through the leaf midrib, then reddish spots can be seen on the back side of the leaf midrib.

Pathogen:

- Red rot disease is caused by the fungus **Glomerella tucumanensis**. An older name, *Colletotrichum falcatum*, is still preferred by some pathologists.

Exercise 'Skylight'

News: Indian Army tested the operational readiness of its satellite-based systems under this operation.

About:

- 'Satellite-based Systems' provide communication facilities to military's ground and air-based systems. It also acts as a backup in case terrestrial connectivity is disrupted.
- Currently, Army doesn't have a dedicated satellite system (unlike Air-force and Navy). GSAT-7B satellite will be launched for use by Army.
- GSAT-7 series of the satellite is meant for defense services.

World Tribal Day

News: 9th August is celebrated as the International Day of the World's Indigenous Peoples.

About:

- In 1994, the UNGA, passed a resolution, declaring August 9 as the International Day of the World's Indigenous People as it was on 9th August that the UN Working Group on Indigenous Populations held its first meeting.
- Aim - To highlight the role of indigenous people and the importance of preserving their rights, communities and knowledge they gathered and passed down over centuries.
- Theme - 'The Role of Indigenous Women in the Preservation and Transmission of Traditional Knowledge.'

Significance:

- Taking cognisance of the knowledge acquired by indigenous people is vital culturally and also scientifically
- Understanding and preservation of indigenous languages, their spiritual practices, and philosophies can help in the conservation and upliftment of Tribals without compromising their identity.

World Lion Day

News: To spread awareness about conservation of these animals, August 10 is celebrated as World Lion Day. On this day, the world talks about the "King of the Jungle."

Significance:

- The day looks to enhance awareness among public about different programmes and the urgent need for conservation of lions.
- The species has been designated as vulnerable by the International Union for Conservation of Nature. According to data available, there are approximately 30,000 to 100,000 lions left worldwide.
- To ensure the existence of lions, public awareness of the threats they face, protection of natural habitats and building more such habitats are the need of the hour.

Lions in India:

- Except for Africa and India, the population of lions has dwindled globally.
- In Gujarat's Gir forest, which is home to lions, their population has been increasing gradually.
- In Gir and the larger Saurashtra region, the population of Asiatic lions, a distant relative of the much larger African lions, have gradually increased after initially experiencing a decline. The number of these lions has risen from 523 to 674 in a span of five years from 2015 to 2020.

Facts about Asiatic Lion in India:

- Scientific name – Panthera Leo Persica
- Status – listed in Schedule I of Wildlife Protection Act of 1972, in Appendix I of CITES and as **Endangered** on IUCN Red List.

Blue Bonds

News: SEBI has proposed the 'blue bonds' for sustainable finance.

About:

- It will be a debt instrument to support investments in healthy oceans and blue economies (i.e. use of ocean resources for economic growth) sustainable exploitation of ocean resources, fishing, and extracting renewable energy.
- It will catalyze progress towards SDG 14 (Life Below Water)
- UN Decade of Ocean Science for sustainable development (2021-2030)
- First Blue Bond - The Republic of Seychelles, in 2018, was the first to come with a sovereign blue bond.

ECOSTRESS

News: NASA's ECOSystem and Spaceborne Thermal Radiometer Experiment on Space Station (ECOSTRESS) are helping in understanding the pattern and reasons behind wildfires.

About:

- It is a multiple wavelength imaging spectrometers to study the effectiveness of water use by vegetation, the water stress and

their ability to adapt to a warming climate. By measuring the rate of release of water by plants, the intensity of coming wildfires can be measured.

- A spectrometer is an optical instrument used to measure the properties of light over a specific portion of the electromagnetic spectrum.

Lumpi-ProVaInd

News: Union Minister for Agriculture and Farmers Welfare, launched the indigenous vaccine Lumpi-ProVaInd to protect livestock from Lumpy Skin disease. The vaccine has been developed by the National Equine Research Center, Hisar (Haryana) in collaboration with the Indian Veterinary Research Institute, Izzatnagar (Bareilly).

What is Lumpy Skin Disease?

- It is an infectious disease in cattle caused by a virus of the family Poxviridae, also known as the Neethling virus.
- The disease is characterized by fever, enlarged superficial lymph nodes and multiple nodules (measuring 2–5 centimetres (1–2 in) in diameter) on the skin and mucous membranes (including those of the respiratory and gastrointestinal tracts).
- Infected cattle also may develop edematous swelling in their limbs and exhibit lameness.
- The virus has important economic implications since affected animals tend to have permanent damage to their skin, lowering the commercial value of their hide.
- Additionally, the disease often results in chronic debility, reduced milk production, poor growth, infertility, abortion, and sometimes death.

Crew Escape System

News: ISRO successfully carried out the test-firing of the Low Altitude Escape Motor (LEM) of the Crew Escape System, from Sriharikota, Andhra Pradesh for the Gaganyaan Project.

About:

- The Crew Escape System (CES) takes away the Crew module of the Gaganyaan mission in case of any eventuality and rescues the astronauts. In case of mission-abort during the initial phase of flight, LEM provides the required thrust to CES, to take away Crew Module from the launch vehicle.
- The LEM is a distinctive special purpose solid rocket motor with four reverse flow nozzles and generates a maximum sea level thrust of 842 kN (nominal) with a burn time of 5.98 seconds (nominal).

Langya Virus

News: Amid the Covid-19 and Monkeypox cases around, the new zoonotic Langya Henipavirus has raised concerns.

About:

- The Langya virus is a **zoonotic virus** which means it can be transmitted from animals to humans.
- Langya is part of the genus Henipavirus, which has a single-stranded RNA genome with a negative orientation.
- The newly discovered Langya virus is a 'phylogenetically distinct Henipavirus'.
- Other viruses of the type Henipavirus discovered earlier are the Mojiang, Ghanian, Cedar, Nipah, and Hendra. Of these, Nipah and Hendra are known to have caused fatal illnesses in humans.
- Langya's genome organization is "identical to that of other Henipaviruses", and that it is closely related to the Mojiang Henipavirus, which was discovered in southern China.

What are the symptoms?

- Fever, Fatigue, Cough, Nausea, Headache, Loss of appetite etc.
- The Langya virus may potentially be fatal to humans in case of severe infections. Langya belongs to the same family of viruses as the deadly Nipah virus that is typically found in bats.

Is there any treatment available?

- There are no licensed drugs or vaccines meant for humans.

SMILE 75 Initiative

News: The Ministry of Social Justice & Empowerment has launched the "SMILE-75 Initiative".

About:

- SMILE (Support for Marginalized Individuals for Livelihood and Enterprise Scheme) is aimed at making cities/towns and municipal areas begging-free and comprehensive rehabilitation of the persons engaged in the act of begging.
- Under the initiative, seventy-five (75) Municipal Corporations in collaboration with NGOs and other stakeholders will cover several comprehensive welfare measures for persons who are engaged in the act of begging.
- Measures such as rehabilitation, provision of medical facilities, counselling, awareness, education, skill development, economic linkages and convergence with other Government welfare programmes will be taken.

Few facts about Situation regarding beggars in India:

- According to the Census 2011 total number of beggars in India is over 4 lakhs.
- West Bengal tops the chart followed by Uttar Pradesh and Bihar.
- Though there is no central law on begging, some states have adopted the Bombay Prevention of Begging Act, 1959, which penalises beggary.

IMEI number

News: According to the police, few gangs have started formatting stolen phones.

What is IMEI number?

- The International Mobile Equipment Identity or IMEI is a unique number that is used to identify a device on a mobile network. It has 15 digits, and is like your phone's unique identity.

- When you use the internet or place a call through your cellular service provider, then this number is used to verify the identity of your device.
- If you have a dual SIM phone, then you will have two IMEI numbers, one for each slot.



How does it help?

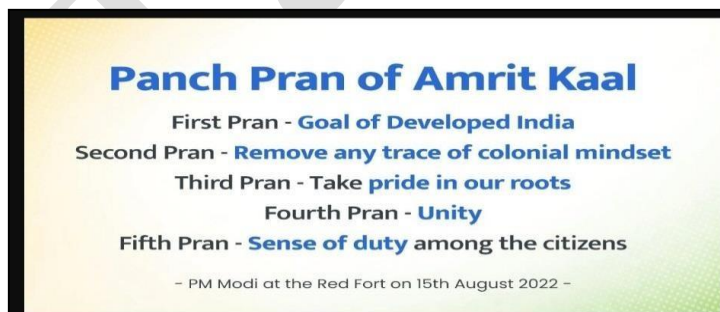
- The IMEI number can help network providers track down a device in case it gets stolen or is lost. Once such loss or theft is reported, the carrier/s can deny the device access to the cellular network even with a new SIM card. This will practically render the device useless as it won't be able to make or receive calls.

Are there any challenges?

- Mobile phones which don't have a flexible operating system can be broken into. There is a software that can change IMEI numbers of the phones as well. This might cause trouble for law enforcement agencies in blocking stolen devices.

Panch Pran of Amrit Kaal

News: On the country's 76th Independence Day, Prime Minister Narendra Modi said corruption and nepotism are two main challenges that are not confined to politics alone and asked people to have



'nafrat' (hatred) for these evils and focus on 'Panch Pran' (five resolves) to ensure a developed India in the next 25 years.

About:

- He spelled out "Panch Pran" (five resolves) to fulfil freedom fighters' dreams for the country at India's independence centenary by 2047.
- He said we should focus on the five pledges - a resolve of developed India; removing any trace of the colonial mindset; taking pride in our legacy; our strength of unity; and fulfilling the duties of citizens with honesty, which should be done by the Prime Minister and Chief Ministers as well.

Advanced Tower Artillery Gun Systems

News: An indigenously developed howitzer gun, ATAG, became part of the 21-gun salute during the Independence Day ceremony for the first time.



About:

- The ATAGS is an indigenous 155 mm x 52 calibre howitzer gun developed by the Defence Research and Development Organisation (DRDO) with its Pune-based facility Armament Research and Development Establishment (ARDE) being the nodal agency.
- The development process of ATAGS by the DRDO coincides with development of Howitzer Dhanush for Advanced Weapons and Equipment India of the erstwhile Ordnance Factory Board.

- In 2019, the Army and the Ministry of Defence gave bulk production clearance to produce 114 Dhanush.
- In the coming days, ATAGS and Dhanush will successfully replace older artillery systems.

Features:

- The armament system of ATAGS mainly comprises barrel, breech mechanism, muzzle brake and recoil mechanism to fire 155 mm calibre ammunition held by Army with a longer range, accuracy and precision and provides greater firepower.
- The ATAGS is configured with all electric drive to ensure maintenance free and reliable operation over a longer period of time.
- It has advanced features in terms of high mobility, quick deployability, auxiliary power mode, advanced communication system, automatic command and control system with night firing capability in the direct fire mode.

Udarashakti Exercise

News: Recently, a contingent of the Indian Air Force left for **Malaysia** to participate in a bilateral exercise named 'Udarashakti'.

About:

- The Indian Air Force is participating in the air exercise with Su-30 MKI and C-17 aircraft while Malaysian Air Force will be flying Su 30 MKM aircraft.
- Exercises will strengthen long-standing friendships and enhance defense cooperation between both armies. As a result, regional security will be strengthened.
- IAF will have an opportunity to share and learn best practices with the Royal Malaysian Air Force through this exercise. It is also likely that they will discuss mutual combat capabilities.

Child Mortality

News: Child mortality in India has reduced since 2014 from 45 per 1,000 live births to 35 per 1,000 live births in 2019.

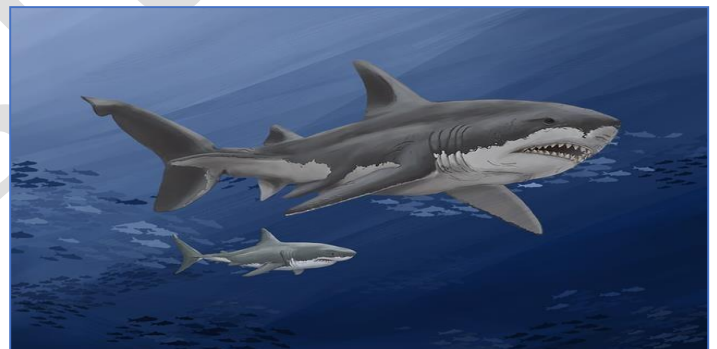
What is Paalan 1000 initiative?

- It is a National Campaign and Parenting App at the Early Childhood Development

- It focuses on the cognitive development of children in the first two years of their life.
- The programme is aligned with the mission of the Rashtriya Bal Swasthya Karyakram (RBSK), emphasizing responsive care and focused interventions during the first 1,000 days.
- First 1000 days are extremely critical for a child's holistic development in the future. The period establishes a solid platform for a child's physical, mental, emotional, cognitive and social health. It is during this period where the child needs the right nutrition, attention, stimulation, love and support.

Megalodon

News: Using fossil evidence to create a three-dimensional model, researchers have found new evidence about the life of one of the biggest predatory animals of all time (the Megalodon).



About:

- Megalodons roamed the oceans an estimated 23 million to 2.6 million years ago.
- Megalodon could "completely ingest, and in as few as five bites," a prey as big as the killer whale.
- According to the study, the Megalodon was bigger than a school bus at around 50 feet from nose to tail. In comparison, the great white sharks of the present can grow to a maximum length of around 15 feet.
- Using their digital model, the researchers have suggested that the giant transoceanic predator would have weighed around 70 tonnes or as much as 10 elephants.

You may read more about Megalodon by clicking on the following link - <https://www.britannica.com/animal/megalodon>

Air Quality and Health in Cities

News: Delhi, Kolkata first, second globally in PM2.5 pollution as per the report titled Air Quality and Health in Cities (by US-based research organization Health Effects Institute's (HEI) State of Global Air Initiative)

PM _{2.5}			NO ₂		
Rank	Location	Annual Average Exposure Levels (µg/m ³)	Rank	Location	Annual Average Exposure Levels (µg/m ³)
1	Delhi, India	110	1	Shanghai, China	41.6
2	Kolkata, India	84	2	Moscow, Russia	40.2
3	Kano, Nigeria	83.6	3	Tehran, Iran	39.8
4	Lima, Peru	73.2	4	St. Petersburg, Russia	38.3
5	Dhaka, Bangladesh	71.4	5	Beijing, China	37.7
6	Jakarta, Indonesia	67.3	6	Cairo, Egypt	37.5
7	Lagos, Nigeria	66.9	7	Ashgabat, Turkmenistan	36.8
8	Karachi, Pakistan	63.6	8	Minsk, Belarus	36.8
9	Beijing, China	55	9	Istanbul, Turkey	35.3
10	Accra, Ghana	51.9	10	Ho Chi Minh City, Viet Nam	34.7

Key Findings:

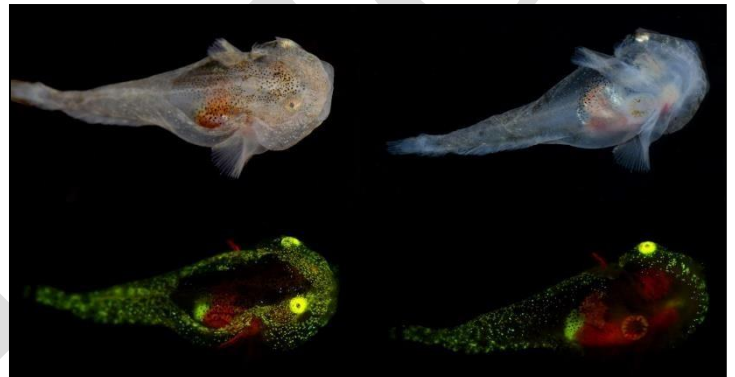
- Delhi has had an 'annual exposure level' of 110 micrograms per cubic metre (µg/m³) of PM2.5 (WHO recommendation: annual average concentrations of PM5 should not exceed 5 µg/m³). Kolkata came second with 84 µg/m³ of PM2.5.
- In 2019, 7 million deaths were linked to PM2.5 exposures.
- The report found that exposure to PM2.5 pollution tended to be higher in cities located in low- and middle-income countries.
- Exposure to NO₂ was found to be higher across cities in high-income as well as low- and middle-income. NO₂ is produced mainly from the burning of fuels mostly in older vehicles, power plants, industrial facilities and residential cooking and heating.

Snailfish

News: Recently, a study has found a Snailfish that lives in an iceberg habitat in Greenland can survive in icy Arctic waters due to the presence of antifreeze proteins in its bloodstream.

About:

- The name snailfish can refer to any of the more than 400 species found in the family Liparidae.
- The Snailfish releases biofluorescence, which allows it to glow green and red in the dark arctic waters.
- Snailfish is the only polar fish reported to have biofluorescence. Biofluorescence is the ability of an organism to convert blue light into green, red, or yellow light.
- They are found all over the world, including in Antarctica.



Key highlights of the study:

- Snailfish found on an iceberg habitat in Greenland can survive in icy Arctic waters due to the presence of 'antifreeze' proteins in their bloodstream. Further, scientists also discovered the most highly expressed genes were related to antifreeze proteins. This extraordinary feature, which is rare among sea organisms, allows snailfish to prevent ice crystals from accumulating in their cells and body fluid.
- The climate change could affect its survivability, as with rising ocean temperature icebergs would melt at a faster rate.
- The increase biodiversity that warmer waters bring to higher latitudes can increase competition, thereby jeopardizing its position in the food chain.
- The findings demonstrate how marine life can sustain in sub-zero temperatures using their unique adaptation mechanisms.

To read more about the recent discovery please do refer the following link - <https://www.livescience.com/antifreeze-protein-snailfish-greenland>

Modified Interest Subvention Scheme (MISS)

News: Government will provide interest subventions (kind of subsidy) to all financial institutions (Banks) for short-term agriculture loans given to farmers. This will be valid for FY22 to FY24 (2 years) and up to 1.5% interest subvention.

About:

- Under MISS, bank provides short term loans upto 3 lakh for all agriculture and allied activities at 7% per annum.
- For prompt repayment of loans - Farmers repaying loans before due date are given extra 3% subventions (i.e., they will have to pay just 4% interest rate)
- Funding will be 100% by centre
- Nodal agency to be NABARD and RBI

What is Interest subvention?

- It is a form of waiver of some percentage of interest from the total interest that one has to pay on a loan taken from financial institutions.
- For example, if banks provide loans on 8.5% interest rate to farmers. And if the government provides interest subvention of 1.5%. Then farmers have to pay only 7% interest rate to bank. The difference will be paid by government as subsidy.

Mithila Makhana

News: The government has recently awarded the Geographical Indication (GI) tag to Mithila Makhana. The move is expected to help growers get the maximum price for their premium produce.

About:

- Mithila Makhana or Makhan (botanical name: *Euryale ferox* Salisb.) is a special variety of aquatic fox nut cultivated in Mithila region of Bihar and Nepal. Makhana is the one of the three prestigious cultural identities of Mithila.
- Pan, Makhan and Machh (fish) are the three prestigious cultural identity of Mithila.
- It is also very famous in Kojagara festival of Maithil Brahmins celebrated for newly married couples.

- Makhana contains protein and fiber, along with micronutrients like calcium, magnesium, iron, and phosphorus.

Other GI tag products in Bihar:

- Bhagalpuri Jardalu Mango
- Katarni Rice
- Magahi Betel (Paan)
- Shahi Litchi
- Silao Khaja (a delicacy)
- Madhubani Painting
- Pipili Work

India-Iran MOU

News: India and Iran signed a Memorandum of Understanding (MoU) on recognition of Certificates of Competency in Unlimited Voyages to help seafarers from both countries as per the provisions of the International Convention on Standards of Training, Certification and Watch keeping for Seafarers (1978).

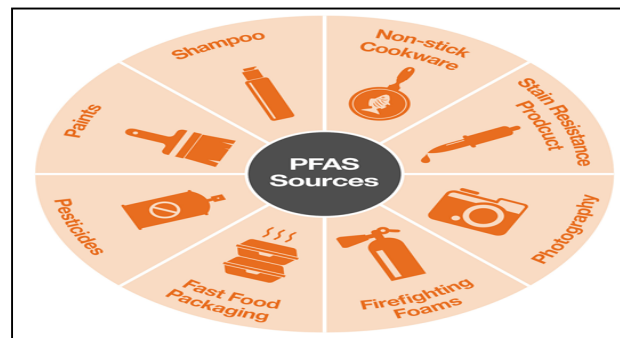
About:

- A seafarer voyage means an uninterrupted period when the sailor carries out his assigned duties or performs work assigned on board a ship.

About the Convention:

- It sets qualification standards for masters, officers and watch personnel on seagoing merchant ships.
- STCW was adopted in 1978 by a conference at the International Maritime Organization (IMO) in London and entered into force in 1984.
- The 1978 STCW Convention was the first to establish basic requirements for training, certification and watch keeping for seafarers on an international level.

Forever Chemicals



News: A recent study published in Environment Science and Technology has found that rainwater from many places across the globe is contaminated with “**per and polyfluoroalkyl substances,**” (PFAs), which are called “forever chemicals” because of their tendency to stick around in the atmosphere, rainwater and soil for long periods of time.

About:

- According to the US Centre for Disease Control and Prevention (CDC), PFAs are man-made chemicals used to make nonstick cookware, water-repellent clothing, stain-resistant fabrics, cosmetics, firefighting forms and many other products that resist grease, water and oil.

Chola Era Idols to be brought back

News: Tamil Nadu Idol Wing CID initiates steps to bring back 6 stolen Chola-era idols from the US. The idol belongs to Nareeswara Siv Temple (Veeracholapuram, Kallakurichi) and was built by Rajendra Chola I.

How was the return made possible?

- The return is possible under Mutual Legal Assistance in Criminal Matters between the US and India and “The Antiquities and Art Treasure Act (1972) (it makes the export of such item without licensing a criminal offence)

About Rajendra I:

- He was the son of Rajaraja Chola.
- Rajendra I conducted the most striking military exploit after his accession in 1023 by his expedition to northern India and Southeast Asia.
- He established many educational institutes in his empire, and for this, he got the title Pandita Chola.
- He contributed to art, religion and literature. He established the city of Gangaikondacholapuram to commemorate his victory over the Pala dynasty and it subsequently became the capital of Chola dynasty.

Nikshay Poshan Yojana

News: Only two-thirds of people living with tuberculosis benefitted from the Union government’s Nikshay Poshan Yojana (NPY), sole nutrition support

scheme, in 2021, which raises major public health concern.

About:

- The NPY was launched in 2018 by the Ministry of Health and Family Welfare.
- It aims to support every Tuberculosis (TB) Patient by providing a Direct Benefit Transfer (DBT) of Rs 500 per month for nutritional needs.

Status of TB in India:

- As per India TB Report 2022, during 2021, the total number of TB patients was more than 19 lakhs. In 2020 it was around 16 lakhs, increasing 19 %.
- In India, the mortality rate due to all kinds of tuberculosis increased by 11% between 2019 and 2020.
- The total number of estimated TB-related deaths for the year 2020 was 4.93 lakh, which is 13 % higher than the estimates of 2019.
- Malnutrition, HIV, diabetes, alcohol, and tobacco smoking are the comorbidities that impact a person suffering from TB.

Yudh Abhyas

News: Citing border pacts, China objects to India-U.S. drill. The upcoming fifteenth edition of the “Yudh Abhyas” joint exercise is expected to take place next month in a high-altitude area in Uttarakhand less than 100 km from the LAC.

About:

- It is one of the longest-running joint military training and defense cooperation (started in 2004 under the US Army Pacific Partnership Program) between India and the US.
- The exercise is hosted alternately between both countries.
- Other India-US exercises - Exercise Vajra Prahar (Special Forces Exercise), Exercise Tiger Triumph (Humanitarian Assistance and Disaster Relief exercise), Cope India (Air Force), Malabar Exercise (naval exercise between QUAD countries), Red Flag (US’ multilateral air exercise).

African nations offer Lithium

News: India has been approached by several African countries with offers to service part of their development loans by giving access to Indian companies in their mining operations and allowing exports of highly prized lithium and cobalt.

About:

- The government has asked domestic metal and mining companies to place their interest in raw materials and other minerals that they require for manufacturing so that these could be sourced from countries where Indian lines of credit have been extended.
- India extends development assistance through concessional LoC under the Indian Development and Economic Assistance Scheme (IDEAS).
- Africa has rich deposits of oil, gas and lithium, which has become the most sought-after mineral by countries building their electric mobility infrastructure using lithium-ion batteries.

Rashtriya Khel Diwas

News: The National Sports Day or Rashtriya Khel Divas is celebrated on 29th August every year in India as a tribute to hockey legend Major Dhyan Chand who was born on this date in 1905.



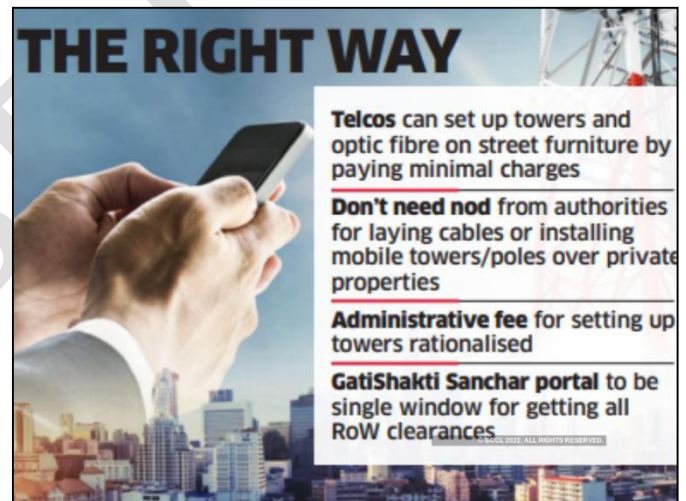
About:

- The day was first designated and celebrated in 2012 as India's National Sports Day.
- The nation celebrates the day honouring our sports stars. The president gives away sports awards such as the Major Dhyan Chand Khel Ratna Award, Arjuna Award, Dronacharya Award, and Dhyan Chand Awards on this occasion.

- The primary motto of National Sports Day is to promote awareness about the significance of sports and being physically active in day-to-day life.
- The Government of India organises various programs, events, seminars etc to raise awareness about the significance of National Sports Day.

Right of Way Rules

News: Ministry of Communications, Electronics & IT and the Ministry of Railways has released amendment in the Indian Telegraph Right of Way (RoW) Rules, 2016 to facilitate faster and easier deployment of Telecom Infrastructure. Ministry has released the 5G RoW application 'form' on GatiShakti Sanchar Portal to enable a faster 5G roll-out in India.



About:

- Right of way is the legal right, established by a grant from a landowner or long usage, to pass along a specific route through property belonging to another.
- The "GatiShakti Sanchar" portal was launched recently for Centralised Right of Way (RoW) approvals. (under the ministry of communication)
- PM Gati Shakti Scheme was launched in 2021, with the aim of coordinated planning and execution of infrastructure projects to bring down logistics costs.

ANPR cameras

News: The Ministry of Road Transport and Highways will install is planning to remove all the toll plazas on the national highways and rely on Automatic Number Plate Reader (ANPR) cameras.



About:

- ANPR cameras will read the vehicle number plates and automatically deduct toll fees from the bank accounts of the vehicle owners.
- However, only those that have come after 2019 will be registered by the cameras. The government plans to come up with a scheme to replace older number plates.
- Currently, about 97% of the total toll collection happens through FASTags while the remaining 3% pay higher than normal toll rates for not using FASTags.

e-SHRAM Portal

News: SC has directed states to register unorganized workers on the portal within 6 weeks.

About:

- E-Shram portal was one of the key initiatives aimed at bringing the workforce (creating a national database), particularly the unorganised sector, into the ambit of social security.

- Currently, about 28 crore workers from nearly 400 fields have been registered on the portal.
- The Ministry of Labour and Employment worked upon the portal.

Petcoke

News: India has recently bought discounted Venezuelan petroleum coke to replace coal (due to high prices of coal).

About:

- Petroleum coke (or pet coke) is a final carbon-rich solid material that derives from oil refining
- A tonne of petcoke is **more expensive** than coal, but **produces more energy** when burnt. It is generally not used as fuel because of toxic emissions, but is widely used by the cement industry – its largest consumer, as sulphur dioxide emissions, are absorbed by limestone.
- It is used as fuel in Industries- Cement, Lime, Alumina etc.
- Previously Supreme Court had banned the use of Petcoke in NCR areas (Delhi)
- India, which counts the United States and Saudi Arabia as major petcoke suppliers, received its first-ever cargo from Venezuela at the beginning of 2022

