

Current Affairs MONTHLY



SEPTEMBER 2022

By
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**For HPAS & Other
Competitive
Exam in
Himachal Pradesh**

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GENERAL STUDIES 1.

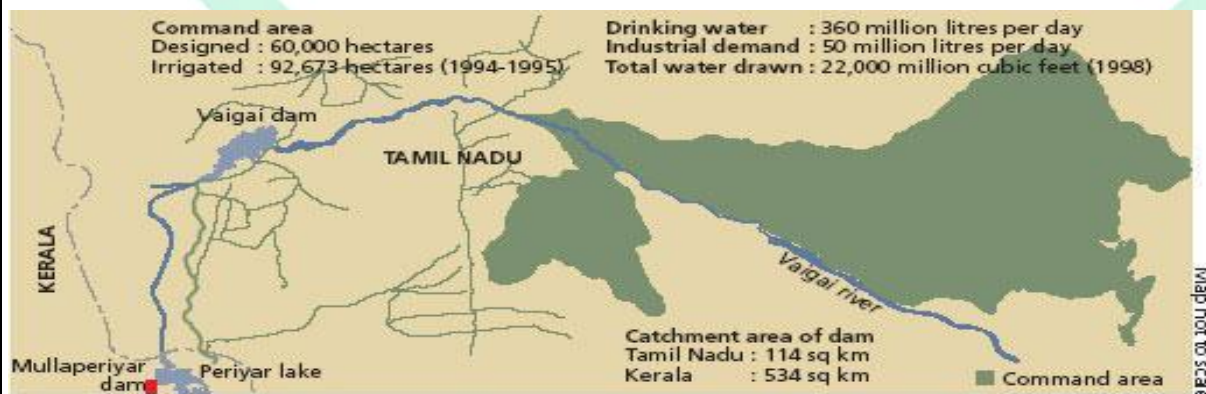
GEOGRAPHY

MULLAPERIYAR DAM

- The Mullaperiyar Dam in Kerala was built on the Periyar river in 1895.
- The dam is located on the confluence of the Mullayar and Periyar rivers in Kerala's Idukki district. The dam is located on the Cardamom Hills of the Western Ghats.
- The dam is located in Kerala but is operated and maintained by the neighbouring state of Tamil Nadu.
- The dam is operated by Tamil Nadu following an 1886 lease agreement for 999 years. It was signed between the Maharaja of Travancore and the Secretary of State for India during British Rule.
- In the 1970s, the lease agreement was renewed by Tamil Nadu and Kerala. It gave the former, rights to the water from the dam, besides the authority to develop hydropower projects at the site. In return, Kerala receives rent from Tamil Nadu.

Periyar River

- The Periyar River is the longest river in the state of Kerala with a length of 244 km.
- It is also known as 'Lifeline of Kerala' as it is one of the few perennial rivers in the state.
- Periyar River originates from Sivagiri hills of Western Ghats and flows through the Periyar National Park.
- The main tributaries of Periyar are Muthirapuzha, Mullayar, Cheruthoni, Perinjankutti.
- **United Nations University-Institute for Water, Environment and Health (UNU-INWEH)** has released a report titled "Ageing Water Storage Infrastructure: An Emerging Global Risk". The report provides an overview of the current state of knowledge on the ageing of large dams.
- The report says the dam is located in a seismically active area, making it prone to earthquakes. The intended lifespan of the dam is 50 years.
- A minor earthquake caused cracks in the dam in 1979, and in 2011, more cracks appeared in the dam due to seismic activity. It warns that in case of a catastrophe, 3.5 million people would be in danger.
- Consequently, the Central Water Commission decided that water level in the dam be brought down from the full reservoir level of 152 ft to 136 ft. It will enable Tamil Nadu to carry out dam strengthening works.
- By the 1990s, Tamil Nadu started demanding restoration of the water level in the Mullaperiyar dam as it completed the task assigned to it. When no consensus was reached through negotiations, the Supreme Court was approached.

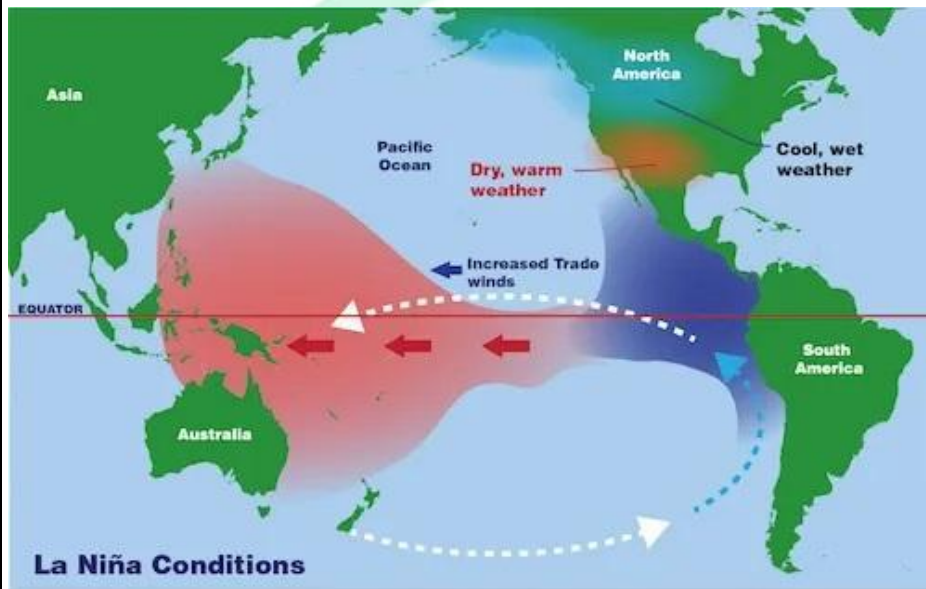


Source: A Mohanakrishnan 1997, *History of the Periyar dam with century long performance*, Central Board of Irrigation and Power, New Delhi

Mullaperiyar dam is in Kerala, Tamil Nadu its main beneficiary

LA NINA

- An uncommon phenomenon, La Niña conditions prevailing over the equatorial Pacific Ocean since September 2020 has entered the third year. There are only six instances of La Niña lasting for more than two years since 1950s, data with the India Meteorological Department (IMD) show.
- La Niña is when the sea surface temperatures (SSTs) along the central and equatorial Pacific Ocean are colder than normal, which, favour the Indian summer monsoon.
- However, La Niña years are also infamous for frequent and intense hurricanes and cyclones in the Atlantic Ocean and the Bay of Bengal.



Impacts of La Niña

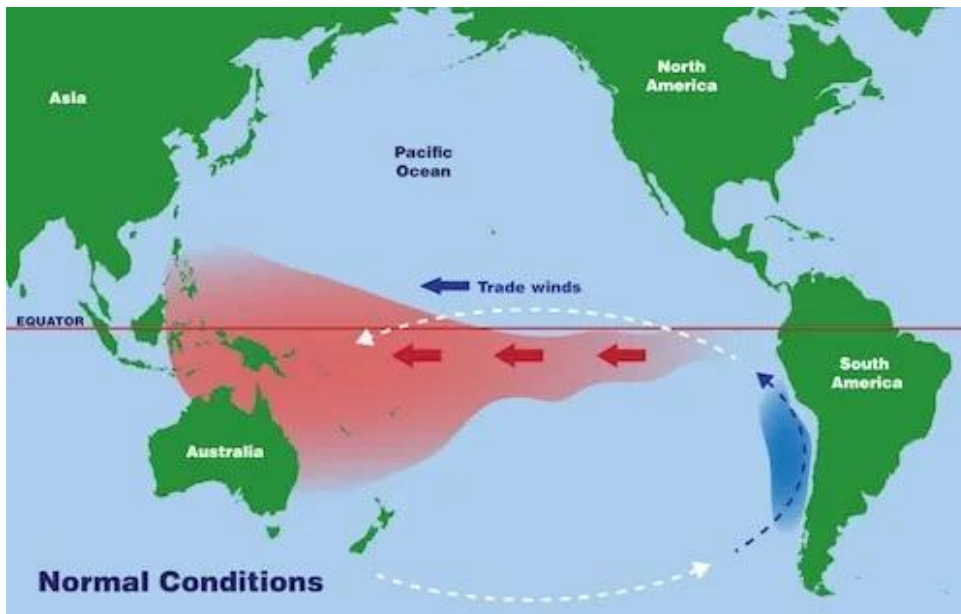
- La Niña tends to lead to milder winters in Northern Europe and colder winters in southern/western Europe leading to snow in the Mediterranean region.
- It is continental North America where most of these conditions are felt.
- La Niña causes drought in the South American countries of Peru and Ecuador.
- It usually has a positive impact on the fishing industry of western South America.
- In the western Pacific, La Niña increases the potential for landfall in those areas most vulnerable to their effects, and especially into continental Asia and China.
- It also leads to heavy floods in Australia and high temperatures in Western Pacific, Indian Ocean, off the Somali coast and a comparatively better monsoon rains in India.

El Niño

- The phrase “El Niño” refers to the Christ Child and was coined by fishermen along the coasts of Ecuador and Peru to describe the warming of the central and eastern Pacific.
- In a normal year, a surface low pressure develops in the region of northern Australia and Indonesia and a high-pressure system over the coast of Peru. As a result, the trade winds over the Pacific Ocean move strongly from east to west.
- The easterly flow of the trade winds carries warm surface waters westward, bringing convective storms (thunderstorms) to Indonesia and coastal Australia. Along the coast of Peru, cold bottom cold nutrient rich water wells up to the surface to replace the warm water that is pulled to the west.

El Niño impacts monsoon rainfall in across the globe

- El Nino impacts ocean temperatures, the speed and strength of ocean currents, the health of coastal fisheries, and local weather from Australia to South America and beyond.
- Rainfall increases drastically in South America, contributing to coastal flooding and erosion.



El Nino impacts monsoon rainfall in India

- El Nino and Indian monsoons are inversely related.
- The most prominent droughts in India – six of them – since 1871 have been El Nino droughts, including the recent ones in 2002 and 2009
- However, not all El Nino years led to a drought in India. For instance, 1997/98 was a strong El Nino year but there was no drought.
- On the other hand, a moderate El Nino in 2002 resulted in one of the worst droughts.
- El Nino directly impacts India's agrarian economy as it tends to lower the production of summer crops such as rice, sugarcane, cotton, and oilseeds.

HISTORY

THE 1947 BOUNDARY COMMISSION

- On August 17, 1947, two days after Independence, the award of the Boundary Commissions for the partition of Punjab and Bengal was announced.
- The award caused much anguish to the people of the two provinces and also to the governments of India and Pakistan.
- Documents accessed from National Archives of India reveal that the then Law minister of India, B R Ambedkar, and Minister of Industry and Supply, Syama Prasad Mukherjee, proposed to take the matter of the Chittagong Hill Tracts to the UN (the UNO).

What were the two Boundary Commissions?

- In June 1947, Sir Cyril John Radcliffe, a British lawyer, was made the Chairman of two boundary commissions of Punjab and Bengal and given the task to draw up the new borders of India and Pakistan.
- He was given a period of five weeks to complete this task and arrived in India in July 1947.
- The boundary commissions of Punjab and Bengal also included two nominees each of the Indian National Congress and Muslim League respectively.
- The Punjab commission had Justice Mehr Chand Mahajan, Justice Teja Singh, Justice Din Mohammad and Justice Muhammad Munir as members.
- The Bengal commission comprised Justice CC Biswas, Justice BK Mukherjee, Justice Abu Saleh Akram and Justice SA Rehman. The Boundary Commissions award was made public on August 17, 1947.

What discussion took place with regard to the awards?

Bengal

- The minutes of the meeting show that Pandit Jawaharlal Nehru protested against the award of Chittagong hill Tracts to Pakistan (East Pakistan, now Bangladesh).
- He said that he had never considered that the allocation of Chittagong Hill Tracts to East Bengal was possible under the terms of reference of the boundary commission.
- Lord Mountbatten defended the award saying that the Chittagong district had close economic ties with the hill tracts and that the port required proper supervision of the Karnaphuli river which runs through the hill tracts. He made a suggestion of compromise by re-adjustment of territory which was rejected by Nehru and the Liaquat Ali Khan.

Punjab

- Nehru said that he considered that the award of boundary commission in the Punjab was likely to have a bad effect among the Sikhs, who presented a particularly difficult problem.
- Sardar Baldev Singh said that the reaction to the award would be very unfavourable on the Sikh mind.
- Liaquat Ali Khan said it would have a similar unfavourable reaction among the Muslims.
- He emphasised that complete religious freedom will be allowed," the minutes note.
- Sardar Patel's view was that the only solution to the Punjab award was a transfer of population on a large scale.
- Mountbatten said that he had spoken to Jinnah about Nankana Sahib.
- "Mr Jinnah had stated that he had it in mind to give the Sikhs any religious assurances that were required in connection with their Gurdwara there.
- The Governor General suggested that a specific statement on Nankana Sahib might be made by the Pakistan government at the same time as the issue of the boundary commission award.

On Bengal award, what was BR Ambedkar and SP Mukherjee's note?

- The joint note of the two ministers pointed out that the decision of the award in some vital respects is "unjust and unfair" and against the fundamental policy of the partition and also the terms of reference.

- A copy of this note was circulated by the Cabinet Secretariat on August 25 to a special committee formed for the legal and other implications on boundary award and which included Home Minister, Food and Agriculture Minister and Defence Minister apart from these two ministers.
- The note points out that Cyril Radcliffe was the Chairman of the boundary commissions and that it also consisted of other judges and was not solely composed of Radcliffe.
- The note also pointed out that Radcliffe and not given any reasons to support the award which he gave.
- “Nowhere has he set out the principles on which he has based his decisions.
- It can therefore be urged that the decision by Sir Cyril Radcliffe without reference to principles by which he was guided can be treated as a nullity.
- This is no mere formal objection. It goes to the root of the matter,” the note says.
- Both ministers would in conclusion that the award in Bengal was unjust and arbitrary and will be a source of bitterness and strife now and in future.
- We therefore lodge our protest against the award and cannot accept it as final and conclusive.
- We propose to take up the matter with the Pakistan Dominion immediately.
- We shall make an attempt to open negotiations with that government and see if any amicable re-settlement is possible.
- If not, we reserve to ourselves the right to treat this as an intern dominion dispute and refer it to the UNO, claiming the inclusion of the areas outlined above into West Bengal.
- The scheme will also provide for sanitation workers to train for and go into any of the approved list of alternative occupations in sectors like agriculture, services, electronics assembling, handicrafts and so on.

WOMEN HEROES OF INDIA'S FREEDOM STRUGGLE

- In his ninth Independence Day address to the nation from the ramparts of the Red Fort, Prime Minister hailed “Nari Shakti”, and urged people to pledge to not do anything that lowers the dignity of women.
- He also paid tribute to women freedom fighters for showing the world the true meaning of India’s “Nari Shakti”. A look at the women he named in his speech:

Rani Laxmibai

- The queen of the princely state of Jhansi, Rani Laxmibai is known for her role in the First War of India’s Independence in 1857.
- Born Manikarnika Tambe in 1835, she married the king of Jhansi.
- The couple adopted a son before the king’s death, which the British East India Company refused to accept as the legal heir and decided to annex Jhansi.
- Refusing to cede her territory, the queen decided to rule on behalf of the heir, and later joined the uprising against the British in 1857.
- Cornered by the British, she escaped from Jhansi fort.
- She was wounded in combat near Gwalior’s Phool Bagh, where she later died. Sir Hugh Rose, who was commanding the British army, is known to have described her as “personable, clever...and one of the most dangerous Indian leaders”.

Jhalkari Bai

- A soldier in Rani Laxmibai’s women’s army, Durga Dal, she rose to become one of the queen’s most trusted advisers.
- She is known for putting her own life at risk to keep the queen out of harm’s way.
- Till date, the story of her valour is recalled by the people of Bundelkhand, and she is often presented as a representative of Bundeli identity.
- According to Ministry of Culture’s Amrit Mahotsav website, “Many Dalit communities of the region look up to her as an incarnation of God and also celebrate Jhalkaribai Jayanti every year in her honour.”

Durga Bhabhi

- Durgawati Devi, who was popularly known as Durga Bhabhi, was a revolutionary who joined the armed struggle against colonial rule.
- A member of the Naujawan Bharat Sabha, she helped Bhagat Singh escape in disguise from Lahore after the 1928 killing of British police officer John P Saunders.
- During the train journey that followed, Durgawati and Bhagat Singh posed as a couple, and Rajguru as their servant.
- Later, as revenge for the hanging of Bhagat Singh, Rajguru, and Sukhdev, she made an unsuccessful attempt to kill the former Punjab Governor, Lord Hailey.
- Born in Allahabad in 1907 and married to Hindustan Socialist Republican Association (HSRA) member Bhagwati Charan Vohra, Durgawati, along with other revolutionaries, also ran a bomb factory in Delhi.

Rani Gaidinliu

- Born in 1915 in present-day Manipur, Rani Gaidinliu was a Naga spiritual and political leader who fought the British.
- She joined the Heraka religious movement which later became a movement to drive out the British.
- She rebelled against the Empire, and refused to pay taxes, asking people to do the same.
- The British launched a manhunt, but she evaded arrest, moving from village to village.
- Gaidinliu was finally arrested in 1932 when she was just 16, and later sentenced for life. She was released in 1947.
- Prime Minister Jawaharlal Nehru, according to the Amrit Mahotsav website, described Gaidinliu as the “daughter of the hills”, and gave her the title of ‘Rani’ for her courage.

Rani Chennamma

- The queen of Kittur, Rani Chennamma, was among the first rulers to lead an armed rebellion against British rule. Kittur was a princely state in present-day Karnataka.
- She fought back against the attempt to control her dominion in 1824 after the death of her young son.
- She had lost her husband, Raja Mallasarja, in 1816. She is seen among the few rulers of the time who understood the colonial designs of the British.
- Rani Chennamma defeated the British in her first revolt, but was captured and imprisoned during the second assault by the East India Company.

Begum Hazrat Mahal

- After her husband, Nawab of Awadh Wajid Ali Shah, was exiled after the 1857 revolt, Begum Hazrat Mahal, along with her supporters, took on the British and wrested control of Lucknow.
- She was forced into a retreat after the colonial rulers recaptured the area.

Velu Nachiyar

- Many years before the revolt of 1857, Velu Nachiyar waged a war against the British and emerged victorious.
- Born in Ramanathapuram in 1780, she was married to the king of Sivagangai.
- After her husband was killed in battle with the East India Company, she entered the conflict, and won with support of neighbouring kings.
- She went on to produce the first human bomb as well as establish the first army of trained women soldiers in the late 1700s,” says the Amrit Mahotsav website.
- Her army commander Kuyili is believed to have set herself ablaze and walked into a British ammunition dump.
- She was succeeded by her daughter in 1790, and died a few years later in 1796.

- Lok Sabha Speaker Om Birla will travel to Mexico where he will unveil statues of Swami Vivekananda and Maharashtra-born freedom fighter and agriculturalist Pandurang Khankhoje.

Who was Pandurang Khankhoje?

- Born in Wardha, Maharashtra, in the late 19th century, Pandurang Khankhoje came in contact with other revolutionaries early on.
- As a student, Khankhoje was an ardent admirer of the French Revolution and of the American War of Independence.
- Closer to home, the 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.
- At this time, the British government's suspicions of him were also growing due to his anti-government activities.
- Before leaving, he visited Bal Gangadhar Tilak, by whom he was inspired.
- 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.
- But a year later, he joined the Mount Tamalpais Military Academy in California as a student of agriculture.

What was his association with the Indian independence movement?

- Khankhoje was one of the founding members of the Ghadar Party, established by Indians living abroad in 1914, mostly belonging to Punjab.
- Its aim was to lead a revolutionary fight against the British in India.
- While 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.

How did Khankhoje reach Mexico?

- At the military academy, Khankhoje met many people from Mexico.
- The Mexican Revolution of 1910 had led to the overthrow of the dictatorial regime, and this inspired Khankhoje.
- He then reached out to Bhikaji Cama in Paris, and met with Vladimir Lenin in Russia among other leaders, seeking support for the Indian cause.
- He was facing possible deportation from Europe and could not go to India, he sought shelter in Mexico.
- Soon, in part due to his prior friendship with Mexican revolutionaries, 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.
- Later on, the American agronomist Dr Norman Borlaug, called the Father of the Green Revolution in India, brought the Mexican wheat variety to Punjab.
- 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.

THE CENTRAL BANK DIGITAL CURRENCY (CBDC)

- Reserve Bank of India's (RBI) digital rupee the Central Bank Digital Currency (CBDC) may be introduced in phases beginning with wholesale businesses in the current financial year.

What is Central Bank Digital Currency (CBDC)?

- According to the RBI, "CBDC is the legal tender issued by a central bank in a digital form.
- It is the same as a fiat currency and is exchangeable one-to-one with the fiat currency.
- Only its form is different." The digital fiat currency or CBDC can be transacted using wallets backed by blockchain.

- Though the concept of CBDCs was directly inspired by Bitcoin, it is different from decentralised virtual currencies and crypto assets, which are not issued by the state and lack the 'legal tender' status.
- CBDCs enable the user to conduct both domestic and cross-border transactions which do not require a third party or a bank.

Significance

- It would reduce the cost of currency management while enabling real-time payments without any inter-bank settlement.
- India's fairly high currency-to-GDP ratio holds out another benefit of CBDC to the extent large cash usage can be replaced by (CBDC), the cost of printing, transporting and storing paper currency can be substantially reduced.
- It will also minimize the damage to the public from the usage of private virtual currencies.
- It will enable the user to conduct both domestic and cross border transactions which do not require a third party or a bank.
- It has the potential to provide significant benefits, such as reduced dependency on cash, higher seigniorage due to lower transaction costs, and reduced settlement risk.
- It would also possibly lead to a more robust, efficient, trusted, regulated and legal tender-based payments option.

Risks

Privacy Concerns:

- The first issue to tackle is the heightened risk to the privacy of users—given that the central bank could potentially end up handling an enormous amount of data regarding user transactions.
- This has serious implications given that digital currencies will not offer users the level of privacy and anonymity offered by transacting in cash.
- Compromise of credentials is another major issue.

Disintermediation of Banks:

- If sufficiently large and broad-based, the shift to CBDC can impinge upon the bank's ability to plough back funds into credit intermediation.
- If e-cash becomes popular and the Reserve Bank of India (RBI) places no limit on the amount that can be stored in mobile wallets, weaker banks may struggle to retain low-cost deposits.
- Faster obsolescence of technology could pose a threat to the CBDC ecosystem calling for higher costs of upgradation.
- Operational risks of intermediaries as the staff will have to be retrained and groomed to work in the CBDC environment.
- Elevated cyber security risks, vulnerability testing and costs of protecting the firewalls
- Operational burden and costs for the central bank in managing CBDC.

Way Forward

- The usage should be payment-focused to improve the payment and settlement system. Then it can steer away from serving as a store of value to avoid the risks of disintermediation and its major monetary policy implications.
- Robust data security systems will have to be set up to prevent data breaches. Thus, it is important to employ the right technology that will back the issue of CBDCs.
- The RBI will have to map the technology landscape thoroughly and proceed cautiously with picking the correct technology for introducing CBDCs.

CULTURE OF INDIA

HYDERABAD LAC BANGLES SET TO GET GI TAG

- Hyderabad-based Creasant Handicraft Artisans Welfare Association has filed an application for securing a Geographical Indications tag for lac bangles that are manufactured in the city.
- The Geographical Indications Registry, Chennai has accepted the application and the coveted tag may add to the lustre of the bangles which is a favourite of tourists and are part of the trousseau for brides from the city.
- The GI tag helps in easy identification of a product based on the area of production.
- It adds to the marketing muscle of the unique product.
- GI tag will pave a way to brand the Hyderabad Lac Bangles better in India and abroad.
- The lac bangles can be seen in the shops that line the Laad Bazaar area near Charminar shimmering with mirror work and encrusted precious stones.
- They are handcrafted in the homes by an army of workers who use molten lac and shape them into bangles and turn them into speckled shimmering wonders.

GI in Telangana State

- Hyderabad Haleem
- Warangal Durries
- Nirmal Toys
- Karimnagar filigree
- Pochampally Ikat

MANDALA ART

- Mandala patterns are a centuries-old motif that are used to depict the cosmos, and have been adapted by artists the world over, each of whom have added their own interpretation and painted it as their own.
- Residents of Liverpool, UK, are now marvelling over a mandala the size of one and a half football pitches in length created by artist James Brunt at the Halewood Park Triangle with materials such as leaves and rocks.
- The piece of land art will be visible for the next couple of weeks, following which the natural elements will wither.

What is mandala and its origins?

- Literally meaning “circle” or “centre” in Sanskrit, mandala is defined by a geometric configuration that usually incorporates the circular shape in some form.
- While it can also be created in the shape of a square, a mandala pattern is essentially interconnected.
- It is believed to be rooted in Buddhism, appearing in the first century BC in India.
- Over the next couple centuries, Buddhist missionaries travelling along the silk road took it to other regions.
- By the sixth century, mandalas have been recorded in China, Korea, Japan, Indonesia and Tibet. In Hinduism, the mandala imagery first appeared in Rig Veda (1500 – 500 BCE).

The meaning of the motif

- It is believed that by entering the mandala and moving towards its center, one is guided through the cosmic process of transforming the universe from one of suffering to that of joy.
- A traditional Buddhist mandala, a circular painting drawn with coloured sand, aided in meditation, with the main objective of aiding its creator to discover their true self.
- In Hinduism, a mandala or yantra is in the shape of a square with a circle at its center.
- There are various elements incorporated within the mandala, each of which has its own meaning.

- For instance, the eight spokes of the wheel (the dharmachakra) represent the eightfold path of Buddhism (practices that lead to liberation from rebirth), the lotus flower depicts balance, and the sun represents the universe.
- Facing up, triangles represent action and energy, and facing down, they represent creativity and knowledge.

Mandala in Modern Indian Art

- Deep-rooted in ancient philosophy, the mandala has attained varied forms in the hands of modern and contemporary Indian artists.
- It continues to appear in thangka paintings, it has a central place in the practice of mainstream artists associated with the tantric and neo-tantric spiritual movements.
- In the 1960s Sohan Qadri and Prafulla Mohanty gained widespread recognition for their works that were imbued with tantric symbolism, such as mandalas that are also used in the rituals of tantric initiation.
- Geometric compositions also dominated works of artists such as Biren De, GR Santosh, Shobha Broota, and famously SH Raza, who visualised the bindu as the center of his universe and the source of energy and life.

ANANG TAL LAKE

- The Anang Tal lake in South Delhi, believed to have been built a thousand years ago, has been declared a monument of national importance through a gazette notification by the Ministry of Culture
- In exercise of the powers conferred by sub-section (1) of section 4 of the Ancient Monuments and Archaeological Sites and Remains Act, 1958 (24 of 1958), the central government declare the ancient site and remains to be of national importance.

Anang Tal Lake

- The lake is situated in Mehrauli, Delhi and is claimed to be created by Tomar King, Anangpal II, in 1,060 AD.
- He is known to have established and populated Delhi in the 11th century.
- The millennium old Anang Tal signifies the beginning of Delhi.
- Anang Tal has a strong Rajasthan connection as Maharaja Anangpal is known as nana (maternal grandfather) of Prithviraj Chauhan.

Who was Anangpal II?

- Anangpal II, popularly known as Anangpal Tomar, belonged to the Tomar dynasty.
- He was the founder of Dhillika Puri, which eventually became Delhi.
- Multiple inscriptions and coins suggest Anangpal Tomar was the ruler of present-day Delhi and Haryana in between the 8th-12th centuries.
- He had built the city from ruins and under his supervision, Anang Tal Baoli and Lal Kot were constructed.
- Anangpal Tomar II was succeeded by his grandson Prithviraj Chauhan.
- Delhi Sultanate was established in 1192 after Prithviraj Chauhan's defeat in the Battle of Tarain (present-day Haryana) by the Ghurid forces.

GENERAL STUDIES 2.

POLITY

APPOINTMENT OF CHIEF JUSTICE INDIA

- Chief Justice of India N V Ramana, kickstarting the process of appointment of the next Chief Justice of India.
- Besides the CJI, the collegium includes Justices U U Lalit, D Y Chandrachud, Sanjay Kishan Kaul and Abdul Nazeer.
- As per the Memorandum of Procedure (MoP), the document governing the process of appointment of judges and appointment of the CJI, the Law Minister asks the outgoing Chief Justice of India to recommend the next CJI.
- The CJI should be “the senior-most judge of the Supreme Court considered fit to hold the office.”
- Although the MoP says that the CJI’s views must be sought “at the appropriate time” and does not specify a timeline for the process.
- Justice Lalit, who is the seniormost judge of the Supreme Court is next in line to be appointed the CJI.

Constitution on appointment of CJI

- The Constitution of India does not have any specific provision for criteria and procedure for appointing the CJI.
- Article 124(1) and the 2008 amendment of the Indian Constitution states that there shall be a Supreme Court of India consisting of a Chief Justice of India and no. of judges as prescribed by Parliament.
- Initially, the prescribed no. of judges was 7 excluding CJI. Now the no. is 34 judges including the CJI.
- The closest mention is in Article 126. It deals with the appointment of an acting CJI.

ORDINANCE

- Kerala governor took exception to the State government’s move to reissue ordinances instead of getting the executive orders ratified by the Assembly.
- The government had sent Mr. Khan 11 ordinances for repromulgation.
- They included the controversial Kerala Lok Ayukta, 1999, amendment ordinance.
- The Kerala Cooperative Societies Act, 2022, amendment ordinance.
- The Supreme Court had ruled (in January 2017) that re-promulgation of ordinances tantamount to subversion of the democratic legislative process

Ordinance

- Ordinances are temporary laws which can be issued by the President when Parliament is not in session.
- The President has been empowered to promulgate Ordinances based on the advice of the central government under Article 123 of the Constitution.
- This legislative power is available to the President only when either of the two Houses of Parliament is not in session to enact laws.

Conditions with regards to the president’s ordinance making powers:

- When one or either of the two Houses of Parliament is not in session, the President may promulgate an Ordinance.
- The President cannot issue an Ordinance unless he is satisfied that the situation necessitates ‘immediate action.’
- The President’s authority to issue ordinances is justiciable if intentions are proved malafide.

Ordinance Making Power of Governor

- Article 213 states that the Governor of the state may issue ordinances when the state legislative assembly (or either of the two Houses in states with bicameral legislatures) is not in session.

Properties of the Ordinance

- President can promulgate an ordinance only when both the Houses of Parliament are not in session or when either of the two Houses of Parliament is not in session.
- He can make an ordinance only when he is satisfied that the circumstances make it necessary for him to take immediate action.
- His ordinance-making power is limited. An ordinance can be issued only on those subjects on which the Parliament can make laws.
- An ordinance is subject to the same constitutional limitation as an act of Parliament. Hence, an ordinance cannot abridge or take away any of the fundamental rights .
- Every ordinance issued by the President during the recess of parliament must be laid before both the Houses of Parliament when it reassembles.
- His power of ordinance-making is not a discretionary power, and he can promulgate or withdraw an ordinance only on the advice of the council of ministers headed by the prime minister.

Misuse of ordinance making power

- The misuse of ordinance powers is just one way in which the quality of democracy in India has been eroded, a phenomenon also known as ‘democratic backsliding’.
- A lack of public trust in democratic institutions and instruments, including the Constitution.
- Undermining the Doctrine of Separation of Powers: In the Kesavananda Bharati vs. State of Kerala case 1973, the Supreme Court listed the separation of powers as a “basic feature” of the Constitution.
- The repromulgation undermines the separation of powers, as it effectively allows the executive to make permanent legislation without legislative input or approval.

Ignoring Supreme Court’s Judgements

- In the D.C. Wadhwa case, the court took up the issue of promulgation of 256 ordinances, of which 69 were repromulgated in Bihar between 1967 and 1981.
- The supreme court ruled that repromulgation of ordinances is against Constitutional morality and is an act of **Colourable legislation**. Because through ordinance making power the Executive encroaches into the law-making function of the Legislature.
- Further, the court said that there was no such practice of repromulgation by the centre.
- Later, the Centre too started to follow the lead of Bihar. For example, in 2013 and 2014, the Securities Laws Ordinance promulgated 3 times, Land Acquisition Act twice.
- In 2017, the matter came up again in the Supreme Court. This time, the court gave a strong verdict. It declared that Re-promulgation of ordinances is a fraud on the Constitution and a subversion of democratic legislative processes.
- However, the Centre and states are not following this judgement. It is evident in the current case of the Commission for Air Quality Management.
- Our Constitution has provided for the separation of powers among the legislature, executive and judiciary where enacting laws is the function of the legislature. The executive must show self-restraint and should use ordinance making power only in unforeseen or urgent matters and not to evade legislative scrutiny and debates.

WOMEN IN PARLIAMENT

- Sadia Hussain’s article, ‘Performance of Women in Parliament: A Quantitative Study of Questions by Women Members in Lok Sabha (1999-2019)’ draws attention to women’s performance in the Lok Sabha through a quantitative analysis of the questions posed by women leaders on the floor.

- It was found that contrary to general belief, women representatives asked more questions on health and family welfare, human resource development, home affairs, finance, agriculture and railways than women's issues.

Women in politics

- Women have had to use alternate methods to come to power. Education and wealth have aided women in political participation.
- Studies suggest that more women have started to organise themselves into economic groups, and financial freedom has pushed them to be more politically active.
- The decreased gap in voter turnout between men and women is a positive sign toward gender inclusivity in the political sphere.
- The 2019 general election was a historic moment for women's politics, as it saw 78 women elected to the lower house of Parliament for the first time since independence where only 22 women were present in the 543-member Lok Sabha.

Access to power versus participation

- Women's performance during the Question Hour session becomes relevant as it is a space where legislators act free from party regulation.
- Substantive representation or acting in the interest of those represented defines the quality of a leader. It becomes imperative to analyse whether descriptive representation transforms into substantive representation.
- The author analyses these research questions through the study of parliamentary sessions. The questions asked during the Question Hour of Parliamentary sessions between the years 1999 to 2019 were specifically chosen as they involved four general elections with governments completing their full five-year terms with two different ruling coalitions.
- As part of the evaluation, the number of questions raised by representatives, the Ministries under which they fell, and the content of questions including terms like 'women', 'girls', 'rape', 'crimes against women' and 'maternal', were collected and categorised.

Breaking Stereotypes

- The study reveals how descriptive representation transforms into substantive representation.
- It goes against the popular notion that women members only touch upon softer issues or that they are silent spectators in Parliament.
- Though men asked more questions and participated in more debates than women, there has been a substantial increase in the number of questions women asked.
- Moreover, contrary to general belief, women representatives asked more questions on health and family welfare, human resource development, home affairs, finance, agriculture and railways than women's issues.
- Male legislators asked more questions on issues concerning women than their female counterparts.
- These are very welcoming signs as the representatives were seen not to be held back by gender stereotypes.
- Members from marginal States, irrespective of gender asked fewer questions.
- Party affiliations, education, regional background, ethnicity, caste and the age of women members played a role in the number and content of questions asked in the lower house.
- The paper studies the friction between the burden women bear to represent women's issues more and on the other hand, being concerned in representing the issues pertaining to the general public at large.
- What lies underneath is the problem of structural inequality, wherein women are marginalised at different levels. Through examples of Latin American Parliaments, the author explains how proportional representation will lead to a better representation of women's interests.
- Moreover, representation becomes a phenomenon that cannot be isolated from society. Social, cultural, economic, religious and political factors affect the process.

- The increased political participation is a positive sign toward gender inclusivity and equality in the political sphere. But it has a long way to go, considering the socio-economic and cultural conditions that still socialise women into being averse to politics, hindering them from pursuing politics as a career.

SUPREME COURT TO TAKE UP PLEA TO BAN CONVICTS FROM POLLS FOR LIFE

- The Supreme Court said it will consider a plea seeking a lifetime ban on people convicted of offences from contesting elections and becoming Members of Parliament and State Legislative Assemblies.
- The Centre had, in an affidavit filed in 2020, maintained in court that disqualification under the Representation of the People Act of 1951 for the period of prison sentence and six years thereafter was enough for legislators.
- In its affidavit in December 2020, the Ministry had rejected the idea of a lifetime ban on convicted persons contesting elections or forming or becoming an office-bearer of a political party.
- The Ministry had reasoned that MPs and MLAs were not bound by specific "service conditions".
- They are bound by their oath to serve citizens and country.
- They are bound by propriety, good conscience and interest of the nation.
- The Centre's stand in 2020 contradicted that of the Election Commission of India (ECI).
- In 2017, the top poll body endorsed the call for a lifetime ban in the apex court. It had argued that such a move would "champion the cause of decriminalisation of politics".
- The ECI had then agreed in the Supreme Court that a ban would be in the spirit of fundamental rights of the Constitution, including the right to equality.

Provisions of disqualification under Representation of Peoples Act 1951:

- Section 8 deals with disqualification of representatives on conviction for certain offences. A person can be disqualified on below grounds:
- Disqualification on conviction for certain election offences and corrupt practices in the election.
- A person convicted of any offence and sentenced to imprisonment for not less than two years.
- Disqualification on the ground of corrupt practices.
- Disqualification for dismissal for corruption or disloyalty.
- Disqualification for office under Government Company.
- Disqualification for failure to lodge account of election expenses.
- Disqualification for promoting enmity between different groups or for the offence of bribery.
- A person must not have been punished for preaching and practicing social crimes such as Untouchability, Dowry, Sati etc.

THE SUPREME COURT VERDICT ON PMLA

- The Supreme Court will hear in open court a review of its judgment upholding key provisions of the Prevention of Money Laundering Act (PMLA), 2002.

What was the Supreme Court ruling on PMLA?

- In Vijay Madanlal Choudhary & Ors v Union of India, a judgment delivered, the Supreme Court upheld the key provisions of the PMLA.

How is a judgment reviewed?

- A ruling by the Supreme Court is final and binding.
- However, Article 137 of the Constitution grants the SC the power to review its judgments or orders.
- A review petition must be filed within 30 days of pronouncement of the judgment.
- Except in cases of death penalty, review petitions are heard through "circulation" by judges in their chambers, and not in an open court.
- Lawyers make their case through written submissions and not oral arguments.
- The judges who passed the verdict decide on the review petition as well.
- The SC rarely entertains reviews of its rulings.

- A review is allowed on narrow grounds to correct grave errors that have resulted in a miscarriage of justice.
- A mistake apparent on the face of record” is one of the grounds on which a case for review is made. This mistake, the court has said, must be glaring and obvious — such as relying on case law that is invalid.

Why is the PMLA verdict under review?

- The key grounds on which review is sought are:
- Amendments introduced as Money Bills: In 2015, 2016, 2018, and 2019, amendments including on bail and classification of predicate offences were made to the PMLA through the Finance Act.
- The PMLA amendments do not qualify as a Money Bill as defined under Article 110 of the Constitution.
- While the Court agreed that this could be a valid contention, it did not decide on the issue since the question of what qualifies as a Money Bill has been referred to a larger seven-judge Bench in another case.

Interpretation of Section 3 of the PMLA:

- Section 3 of the law defines the offence of money laundering in terms of who is punishable. It states: “Whosoever directly or indirectly attempts to indulge or knowingly assists or knowingly is a party or is actually involved in any process or activity connected with the proceeds of crime and projecting it as untainted property shall be guilty of offence of money-laundering.”
- The SC in its verdict, accepted the government’s submission that a drafting error had crept in, and said that the expression “and” should be read as “or” in Section 3.
- The petitioners seeking a review argue that this interpretation would expand the scope of the provision.

Retrospective application of the offence of money laundering:

- The PMLA is an offence to punish money laundering with an intent that a person must not be allowed to take benefit of the offence he commits. The Act limits itself to “proceeds of crime” which is property that is derived out of a scheduled offence committed earlier by the accused. A scheduled offence is an offence specifically listed in a Schedule attached to the PMLA.
- In its ruling, the SC said the offence of money laundering, i.e., enjoying the “proceeds of crime”, is a “continuous one”, and can be acted upon independent of when the scheduled offence was committed.
- This means holding property that is derived from an offence which may not have been a scheduled offence at the time of commission of the offence, will also be defined as money laundering.
- The petitioners seeking review have argued that this is a retrospective reading of the law, and violates the fundamental right under Article 20(1) of the Constitution.

Enforcement Directorate distinct from “police”

- The SC verdict upheld Section 50 of PMLA that empowers ED officials to record statements on oath from any person.
- This is admissible in court, unlike statements or confessions made to the police.
- The SC also said that the ED need not supply a copy of the Enforcement Case Information Report (ECIR) with an arrested person.
- The SC has not taken into account certain obvious provisions which give penal powers to the ED while making this determination.

Bail provisions

- The SC verdict, citing a compelling interest in imposing stringent bail conditions for economic offences, upheld the bail provisions under PMLA that impose a reverse burden of proof on the accused.
- The petitioners have argued that “in the absence of an FIR (or equivalent), Complaint (charge sheet), case diary (not maintained), and documents relied upon by the prosecution, no accused can present facts and submissions to persuade the Special Court to believe that he is not guilty of such offence”.

SUBRAMANIAM BALAJI VS TAMIL NADU JUDGMENT

- The Supreme Court referred to a three-judge Bench a series of petitions seeking a judicial direction that political parties who make “wild” promises of largesse should also reveal in their poll manifestos where they will get the money to pay for them.
- The 2013 Balaji judgment states that election manifesto promises do not amount to ‘corrupt practice’ under Section 123 of the Representation of People Act.
- The reference is a shift from the court’s own stand in the S. Subramaniam Balaji vs Tamil Nadu judgment of 2013.

What happened?

- In the Balaji case judgment, a Division Bench of the Supreme Court had held that making promises in election manifestos do not amount to a ‘corrupt practice’ under Section 123 of the Representation of People Act (RP).
- However, the Supreme Court is now worried that freebies promised by political parties to win elections could bleed the public exchequer dry.
- The Court said that parties who form the government riding the wave created by their pre-poll promises of “free gifts” are bleeding the State finances dry by actually trying to fulfil their outlandish promises using public money.
- The Supreme Court has therefore decided to revisit the Balaji verdict.

What triggered the Balaji case?

- The course of events started in 2006, during the run-up to the Tamil Nadu Assembly elections.
- Few political parties released their election manifesto announcing a scheme of free distribution of colour television sets (CTVs) grinders, mixies, electric fans, laptop computers, four gram gold thalis, etc.
- Balaji, a resident of Tamil Nadu, challenged the schemes in the Madras High Court stating that the expenditure to be incurred by the State from the exchequer was “unauthorised, impermissible and ultra vires the constitutional mandates”.

How did the case play out?

- He argued that the promises of free distribution of non-essential commodities in an election manifesto amounts to electoral bribe under Section 123 of the RP Act.
- The Comptroller and Auditor General of India has a duty to examine expenditures even before they are deployed.
- Money can be taken out of the Consolidated Fund of the State only for “public purposes”.
- The distribution of goods to certain sections of people was violative of Article 14 of the Constitution.

The State of Tamilnadu’s Arguments

- In response, the State of Tamil Nadu countered that promises of political parties do not constitute corrupt practice.
- Political parties are not the State and ‘freebies’ is a nebulous term which has no legal status.
- The promises implemented by the party after forming the government is an obligation under the Directives Principles of State Policy.
- The State is only doing its duty to promote the welfare of its people.
- The promises are implemented by framing various schemes/guidelines/eligibility criteria etc. as well as with the approval of the legislature.
- Thus, it cannot be construed as a waste of public money or be prohibited by any statute or scheme.

The Court’s Judgment

- The court’s judgment held that promises by a political party cannot constitute a ‘corrupt practice’ on its part.
- It would be “misleading” to construe that all promises in the election manifesto would amount to corrupt practice.
- The manifesto of a political party is a statement of its policy.

- The question of implementing the manifesto arises only if the political party forms a government.
- It is the promise of a future government and not of an individual candidate.
- However, the court agreed that freebies create an “uneven playing field”.
- It had asked the Election Commission of India to consult political parties and issue guidelines on the election manifesto and make it a part of the Model Code of Conduct.

Why is the Court’s move to review the Balaji judgment significant?

- In its order, the court foresees that “freebies may create a situation wherein the State government cannot provide basic amenities due to lack of funds and the State is pushed towards imminent bankruptcy”.
- The court said it wants a transparent debate before the three-judge Bench on whether an “enforceable” judicial order can stop political parties from promising and distributing ‘irrational freebies’.
- The case is unique as the Supreme Court is exploring whether judicial parameters can be set on a purely political act of promising freebies.



CivilsTap Hlmachal

GOVERNANCE

ELECTORAL BONDS

- Donations through electoral bonds to political parties have gone up by Rs 389.5 crore to Rs 10,246 crore in the 21st sale of the financial instruments since they were launched in 2018.
- As per the provisions of the EB Scheme, only the political parties registered under Section 29A of the Representation of the People Act, 1951 (43 of 1951) and have secured not less than 1 per cent of the votes polled in the last general election to the House of the People or the Legislative Assembly, as the case may be, are eligible to receive electoral bonds.

The Electoral Bonds

- The Electoral Bonds are the non-interest-bearing financial instruments.
- These Electoral bonds allow eligible donors to pay eligible political parties using banks as an intermediary.
- The Electoral Bonds aim to ensure transparency in the funding of political parties.
- The State Bank of India (SBI) issues electoral bonds in the months of January, April, July, and October.
- The electoral bonds are available in denominations from Rs 1,000 to Rs 1 crore.
- The donors can buy electoral bonds and transfer them into the accounts of the political parties as a donation. The name of the donor is kept confidential.
- Political parties will create a specific account. This account will be verified by the ECI. The political parties will encash the electoral bonds only in this verified account.
- The bonds will remain valid for 15 days. Within that time, the political parties have to encash the electoral bond in the designated accounts.

Need for Electoral Bonds

- These bonds are aimed to reduce anonymous cash donations made to political parties.
- The Electoral bonds encourage political donations of clean money.

MINES AND MINERALS (DEVELOPMENT AND REGULATION) (MMDR) AMENDMENT ACT, 2021

- The Kerala government has opposed the new set of proposed amendments to the Mines and Minerals (Development and Regulation) Act.
- The amendments are a breach of States' rights as minerals come under the purview of States.
- The proposed amendments as anti-Constitutional and added that the proposals may lead to improper handling of strategically important minerals such as uranium by select private companies.
- The main objection is against the sixth item in the note for consultation sent to the State governments that will empower the Centre to auction some minerals from the list of atomic minerals.
- Kerala strongly opposes the proposed amendment as State governments are the owners of the mines and minerals located within the territory of the State concerned, and under Entry 23 of List II of the Constitution and the Constitutional right of the State under Article 246(3), State Assemblies can make laws on such minerals.
- Any loss or leakage of the Monazite (being the primary source of thorium) and Rare Earth (occurring in association with Beach Sand Minerals) due to mineral processing would be significant loss affecting national security.
- Private monopoly companies should not be allowed to handle precious and strategically important minerals and the earlier stand of the Centre should not be changed.

Ownership of Mineral

- The State Governments are the owners of minerals located within the boundary of the State concerned, under the provisions of the Mines and Minerals (Development and Regulation) Act, 1957 and Mineral Concession Rules, 1960.
- However, for minerals specified in the First Schedule to the Mines and Minerals (Development and Regulation) Act, 1957 approval of the Central Government is necessary.
- The Central Government is the owner of the minerals underlying the ocean within the territorial waters or the Exclusive Economic Zone of India.
- Schedule I contains minerals such as coal and lignite, minerals of the “rare earths” group containing Uranium and Thorium.

Atomic Minerals

- Uranium and Thorium are the main atomic minerals.
- Other atomic minerals are beryllium, lithium and zirconium.

Thorium

- Thorium is a chemical element with symbol Th and atomic number 90.
- It is one of only two significantly radioactive elements that still occur naturally in large quantities.
- Thorium is estimated to be about three to four times more abundant than uranium in the Earth's crust, and is chiefly refined from monazite sands.
- Monazite is a widely scattered on the Kerala Coast
- Thorium is predicted to be able to replace uranium as nuclear fuel in nuclear reactors.

SCHEME FOR UPLIFTMENT OF DAILY WAGE WORKERS

- As per the Unorganised Workers' Social Security Act, 2008, the Government is mandated to provide Social Security to the workers of unorganised sector including daily wage workers by formulating suitable welfare schemes on matters relating to
 - Life and disability cover
 - Health and maternity benefits
 - Old age protection
 - Any other benefit as may be determined by the Central Government.
- **The Life and Disability cover** is provided through Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY).
- The Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) provides an annual health cover of Rs. 5 lakhs per eligible family for secondary and tertiary care hospitalization corresponding to 1949 treatment procedures across 27 specialties. It is a completely cashless and paperless scheme. The beneficiary families under AB-PMJAY have been identified from Social Economic Caste Census (SECC) of 2011 basis 6 deprivation and 11 occupational criteria across rural and urban areas.
- **The old age protection** is provided through the Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM) pension scheme in the form of monthly pension of Rs. 3,000/- after attaining the age of 60 years.
- **The Right of Children to Free and Compulsory Education (RTE) Act, 2009**, mandates the appropriate Government to provide free and compulsory elementary education to every child of the age 6 to 14 years in a neighbourhood school. Education is a subject in the concurrent list of the Constitution and majority of the schools are under the control of the respective State Governments.
- Apart from these schemes,
 - Atal Pension Yojana,
 - Public Distribution System under National Food Security Act,
 - Mahatma Gandhi National Rural Employment Guarantee Act,
 - Deen Dayal Upadhyay Gramin Kaushal Yojana,
 - Pradhan Mantri Awas Yojana, National Social Assistance Programme,
 - Gareeb Kalyan Rojgar Yojana,
 - Mahatma Gandhi Bunkar Bima Yojana,

- Deen Dayal Upadhyay Antyodaya Yojana,
- PMSVANidhi,
- Pradhan Mantri Kaushal Vikas Yojana, are also available to the unorganised workers including daily wage workers depending upon their eligibility criteria.

THE ENERGY CONSERVATION (AMENDMENT) BILL, 2022

- The Act promotes energy efficiency and conservation. It provides for the regulation of energy consumption by equipment, appliances, buildings, and industries.

Key proposals under the Bill are:

- **Obligation to use non-fossil sources of energy:** The Act empowers the central government to specify energy consumption standards.
- **Carbon Trading:** The Bill empowers the central government to specify a carbon credit trading scheme.

Carbon Markets

- 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 which outperforms the emission standards stands to gain credits.
- Another unit which is struggling to attain the prescribed standards can buy these credits and show compliance to these standards.
- The unit that did better on the standards earns money by selling credits, while the buying unit is able to fulfill its operating obligations.
- Under the Kyoto Protocol, the predecessor to the Paris Agreement, carbon markets have worked at the international level as well.
- As the world negotiated a new climate treaty in place of the Kyoto Protocol, the developed countries no longer felt the need to adhere to their targets under the Kyoto Protocol.
- A similar carbon market is envisaged to work under the successor Paris Agreement, but its details are still being worked out.

Carbon Credit

It implies a tradeable permit to produce a specified amount of carbon emissions.

- The central government or any authorised 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.
- **Energy Conservation Code for Buildings:** The Act empowers the central government to specify energy conservation code for buildings. The code prescribes energy consumption standards in terms of area. The Bill amend this to provide for an 'energy conservation and sustainable building code'.
- **Applicability to Residential Buildings:** Under the Act, the energy conservation code applies to commercial buildings:
 - Erected after the notification of the code
 - Having a minimum connected load of 100 kilo watts (kW) or contract load of 120 kilo volt ampere (kVA).
- **Standards for Vehicles and Vessels:** Under the Act, the energy consumption standards may be specified for equipment and appliances which consume, generate, transmit, or supply energy. The Bill expands the scope to include vehicles (as defined under the Motor Vehicles Act, 1988).
- **Regulatory Powers of SERCs:** The Act empowers the State Electricity Regulatory Commissions (SERCs) to adjudge penalties under the Act. The Bill adds that SERCs may also make regulations for discharging their functions.
- **Composition of the Governing Council of BEE:** The Act provides for the setting up of the Bureau of Energy Efficiency (BEE). The Bureau has a governing council with members between 20 and 26 in number. These include: (i) secretaries of six departments, (ii) representatives of regulatory authorities such as the Central

Electricity Authority, and the Bureau of Indian Standards, and (iii) up to four members representing industries and consumers. The Bill instead provides that the number of members will be between 31 and 37. It increases the number of secretaries to 12. It also provides for up to seven members representing industries and consumers.

NO PRIVILEGE TO MPs FROM CRIMINAL PROCEEDINGS DURING SESSION

- Rajya Sabha Chairman has clarified that members of Parliament do not enjoy any immunity from arrest in criminal cases when the House is in session, and they cannot avoid summons issued by law enforcement agencies.

MP's Privileges on Arrests

- Under Article 105 of the Constitution, members of Parliament enjoy certain privileges, so they can perform their duties without any hindrances.
- 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.
- However, in criminal matters, members of Parliament are not on a different footing than a common citizen. That means members of Parliament do not enjoy any immunity from being arrested in a criminal case during the session or otherwise.

Issues

- Leader of Opposition in the Rajya Sabha has claimed he was "insulted" as he was summoned by the Enforcement Directorate during the working hours of Parliament.
- For this Chairman said, it was "a wrong notion" among members that they have privilege from action by agencies while Parliament is in session.
- He cited Article 105 of the Constitution, Section 135A of the Civil Procedure Code and Supreme Court Judgments.
- He stated that in criminal matters, MPs are not on a different footing than a common citizen. That means MPs do not enjoy any immunity from being arrested in a criminal case during the Session or otherwise.

Supreme Court Judgements on this Issue

- **K Anandan Nambiar Case:** In this, the Court held that the true Constitutional position is that so far as a valid order of detention is concerned, a Member of Parliament can claim no special status higher than that of an ordinary citizen and is as much liable to be arrested, detained or questioned even during the Session.
- In July 2021, the SC rejected a plea by the Kerala government to withdraw criminal cases against its MLAs, who destroyed public property and disrupted a Budget speech in the Assembly in 2015.
- The state had claimed parliamentary privilege and immunity from criminal prosecution, arguing that the incident occurred inside the Assembly hall. They also said that prior sanction of the Speaker was necessary before the registration of an FIR by the police.
- But the SC held that legislators who indulge in vandalism and general mayhem cannot claim parliamentary privilege and immunity from criminal prosecution, and that this could not be called "essential legislative action"

NITI AAYOG GOVERNING COUNCIL

- Addressing the 7th meeting of the NITI Aayog Governing Council, the Prime Minister said that during the pandemic every State played a crucial role by focussing on the grassroots delivery of public services through cooperation across political lines.

The Governing Council discussed four key issues:

- Crop diversification and achieving self-sufficiency in pulses, oilseeds and other agri-commodities
- Implementation of the National Education Policy (NEP) in school education

- Implementation of the National Education Policy in higher education
- Urban governance.

The Prime Minister stressed the need

- To focus on modernised agriculture, animal husbandry, and food processing to become self-sufficient and a global leader in the agriculture sector.
- He said rapid urbanisation could be turned into a strength by using technology to ensure ease of living, transparent service delivery and improvement in the quality of life.
- State should focus on promoting trade, tourism and technology via every Indian Mission around the world.
- The States must focus on reducing imports, increasing exports and identifying opportunities thereof.

NITI Aayog

- The National Institution for Transforming India, also called NITI Aayog, was formed via a resolution of Union Cabinet on Jan 1, 2015 and it replaced the Planning Commission.
- NITI Aayog is the premier policy 'Think Tank' of GoI to bring states to act together in national interest, and thereby foster Cooperative federalism.

Composition

- **Chairperson:** Prime Minister
- **Vice-Chairperson:** To be appointed by Prime-Minister
- **Governing Council:** Chief Ministers of all states and Lt. Governors of Union Territories.
- **Regional Council:** To address specific regional issues, Comprising Chief Ministers and Lt. Governors Chaired by Prime Minister or his nominee.
- **Adhoc Membership:** 2 members in ex-officio capacity from leading Research institutions on rotational basis.
- **Ex-Officio Membership:** Maximum four from Union council of ministers to be nominated by Prime minister.
- **Chief Executive Officer:** Appointed by Prime-minister for a fixed tenure, in rank of Secretary to Government of India.
- **Special Invitees:** Experts, Specialists with domain knowledge nominated by Prime-minister.

Hubs of NITI Aayog

- Team India Hub acts as interface between States and Centre.
- Knowledge and Innovation Hub builds the think-tank acumen of NITI Aayog.
- The Aayog planned to come out with three documents — 3-year action agenda, 7-year medium-term strategy paper and 15-year vision document.

NATIONAL REGISTER OF CITIZENS (NRC)

- On July 5, the 60-member Manipur Assembly resolved to implement the National Register of Citizens (NRC) and establish a State Population Commission (SPC).
- The northeastern States have been paranoid about "outsiders", swamping out their numerically weaker indigenous communities. The Meiteis and the Nagas of Manipur claim that an NRC is necessary because the political crisis in neighbouring Myanmar has forced hundreds of people into the State from across its 398-km international border.

Why is Manipur pushing for NRC?

- 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 concentrated in the Imphal Valley, the central part of Manipur, and the tribal Naga and Kuki-Zomi groups mostly inhabiting the hills around.

- 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.
- A majority of those who fled or are fleeing belong to the Kuki-Chin communities, ethnically related to the Kuki-Zomi people in Manipur as well as the Mizos of Mizoram.
- In July, seven Manipur students' organisations and 19 tribal and mixed groups — none of them representing the Kuki-Zomi people — submitted a memorandum to Prime Minister demanding the implementation of NRC and the establishment of an SPC to “check and balance the population growth”.

Has Manipur had protective mechanisms?

- In December 2019, Manipur became the fourth northeastern State to be brought under the inner-line permit (ILP) system after Arunachal Pradesh, Mizoram and Nagaland. A temporary official travel document to allow inward travel of an Indian citizen into a protected area.
- But less than two years later, an umbrella organisation that spearheaded the ILP movement said the system was flawed and that Manipur needed a stronger and more effective mechanism for protecting indigenous populations.
- They also recalled a movement in the 1980s for the detection and deportation of foreigners from Manipur, following which the State government had signed two agreements for using 1951 as the base year for identifying the non-residents and evicting them.

What is the status of the NRC elsewhere in the northeast?

- Assam is the only State in the region that undertook an exercise to update the NRC of 1951 with March 24, 1971, as the cut-off date for citizenship of a person.
- The complete draft of the Assam NRC was published in August 2019, excluding 19.06 lakh out of 3.3 crore applicants, which the government in the State and some indigenous groups have refused to accept.
- Their petitions for re-verification of the NRC to weed out “Bangladeshis”, allegedly included erroneously or fraudulently, are pending before the Supreme Court, which had monitored the exercise.
- Nagaland attempted a similar exercise called RIIN (Register of Indigenous Inhabitants of Nagaland) in June 2019 to primarily sift the indigenous Nagas from the non-indigenous Nagas.
- The move, seen as directed particularly against the Nagas of adjoining Manipur, was shelved following opposition from several groups, including the extremist National Socialist Council of Nagalim or NSCN (IM), the bulk of whose members are ironically from Manipur.

THE PANCHAYATS (EXTENSION TO THE SCHEDULED AREAS) ACT (PESA ACT)

- Aam Aadmi Party (AAP) declared a six-point “guarantee” for tribals in Gujarat’s Chhota Udepur district, including the “strict implementation” of The Panchayats (Extension to the Scheduled Areas) Act (PESA Act).

About the PESA Act, 1996:

- The Panchayats (Extension to Scheduled Areas) Act, 1996 or PESA Act is a law enacted by the Government of India for ensuring self-governance through traditional Gram Sabhas for people living in the Scheduled Areas of India.
- It was enacted by Parliament in 1996 and came into force on 24th December 1996.
- After the Bhuria Committee recommendations in 1995, Panchayat Extension to Scheduled Areas (PESA) Act 1996 came into existence for ensuring tribal self-rule for people living in scheduled areas of India.
- The PESA is considered to be the backbone of tribal legislation in India.
- PESA recognises the traditional system of the decision-making process and stands for the peoples’ self-governance.

- Under the PESA 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

Functions

- To help implementation of the development programmes and schemes of the Panchayat.
- To identify beneficiaries for different programmes and schemes. However, if the Gram Sabha fails to identify such beneficiaries within a reasonable time, the Gram Panchayat shall identify the beneficiaries.
- To solicit support — in cash or kind or both and voluntary labour — from the public for community welfare programmes.
- To support the programmes of mass education and family welfare.
- To promote unity and harmony among all sections of the society in the village.
- To seek clarification from the Mukhiya, Up-Mukhiya and other members of the Gram Panchayat about any particular activity, scheme, income and expenditure.
- To discuss and recommend appropriate action with regard to reports of the Vigilance Committee.
- Other related matters brought to the notice of the Gram Sabha.
- To consider levy of taxes, rates, rents & fees & enhancement of rates thereof.
- To consider all such matters as may be referred by the Gram Panchayat for its decision.

What is the issue in Gujarat?

- Gujarat notified the State PESA Rules in January 2017, and made them applicable in 4,503 gram sabhas under 2,584 village panchayats in 50 tribal talukas in eight districts of the state.
- However, while the provisions of the law deem the Gram Sabhas as “most competent” to deal with matters related to their territories for safeguarding their customs, traditions as well as the natural resources in the tribal areas, the Act has not been enforced in letter and spirit,.

Powers provided to Gram Sabha and Panchayat

- Regulate sale/consumption of intoxicants.
- Ownership of minor forest produce.
- Prevent land alienation and restore alienated land.
- Manage village markets.
- Control over money lending to STs.
- Control over institutions and functionaries in social sector, local plans including Tribal sub plans and resources

Role of the state government

- State legislation governing Panchayats in Scheduled Areas must be consistent with customary law, social and religious norms, and traditional community resource management techniques.
- Every village must have a Gram Sabha, made up of people whose names are on the village Panchayat's electoral lists, which is responsible for safeguarding and preserving the people's traditions and practices, as well as their cultural identity, community resources, and traditional dispute resolution methods.
- Every Gram Sabha is responsible for approving plans, programs, and projects for social-economic development before implementation at the village level and also identifying beneficiaries under poverty alleviation programs.
- Every village Panchayat will be obliged to get a certificate from the Gram Sabha certifying the use of money for the specified plans, programs, and projects.
- In every Panchayat, the number of seats reserved in Scheduled Areas shall be proportional to the population of the communities for whom reservation is sought under Part IX of the Constitution. The reservation for Scheduled Tribes must not be less than half of the total number of seats. Furthermore, all seats of Panchayat Chairpersons at all levels will be reserved for Scheduled Tribes.

- Scheduled Tribes with no representation in the Panchayat at the intermediate level or the Panchayat at the district level may be nominated by the state government. However, no more than one-tenth of the total number of members to be elected in that Panchayat may be nominated.
- Before acquiring land in the Scheduled Areas for development projects or resettling or rehabilitating persons affected by such projects in the Scheduled Areas, the Gram Sabha or Panchayats at the relevant level must be consulted.

AIRLINES TO GIVE INTERNATIONAL TRAVELLER DATA TO CUSTOMS

- Airlines will have to mandatorily provide details of all international passengers to the Customs department for preventing and prosecuting offences under the Customs Act, 1962 as well as any other domestic or international law.
- The Central Board of Indirect Taxes and Customs (CBIC) issued a gazette notification titled 'Passenger Name Record Information Regulations, 2022'.
- The information such as passenger name record (PNR), date of travel, credit card details and seat assigned will have to be shared at least 24 hours before departure.
- Failure to comply will invite a minimum penalty of ₹25,000 and maximum of ₹50,000 for every act of non-compliance.
- This information will have to be shared with CBIC established agency, National Customs Targeting Centre – Passenger (NCTC-P) for conducting of "risk analysis of passengers".
- The airline will have to share include PNR (Passenger Name Record) locator code, date of reservation, date of intended travel, frequent flyer and information on other benefits such as free tickets and upgrades, all available contact information, billing information including credit card number, travel agency or agent, seat information as well as history of changes to the PNR.

Purpose

- Such information is needed for prevention, detection, investigation and prosecution of offences under the Customs Act and also for the law enforcement agencies or government departments or any other country.
- It will also help to prevent bank loan defaulters from fleeing the country to avoid prosecution.
- According to information furnished by the government in Parliament, a total of 38 economic offenders, including Nirav Modi, Vijay Mallya and Mehul Choksi, fled the country in the last five years.

The Central Board of Indirect Taxes and Customs (CBIC)

- The Central Board of Indirect Taxes and Customs (CBIC) is the nodal national agency responsible for administering Customs, GST, Central Excise, Service Tax & Narcotics in India.
- The Customs & Central Excise department was established in the year 1855 by the then British Governor General of India, to administer customs laws in India and collection of import duties / land revenue. It is one of the oldest government departments of India.
- Currently the Customs and Central Excise / GST department comes under the Department of Revenue, Ministry of Finance.

Functions performed by the CBIC include:

- Formulation of policy concerning levy and collection of Customs, Central Excise duties, Central Goods & Services Tax and IGST,
- Prevention of smuggling.
- Administration of matters relating to Customs, Central Excise, Central Goods & Services Tax, IGST and Narcotics to the extent under CBIC's purview.

"SMILE-75 INITIATIVE"

- In the spirit of AzadikaAmritMahotsav, the Ministry of Social Justice & Empowerment, Government of India, has identified 75 Municipal Corporations to implement comprehensive rehabilitation of persons

engaged in the act of begging under “**SMILE: Support for Marginalised Individuals for Livelihood and Enterprise**” named as “SMILE-75 Initiative”.

- Under the SMILE-75 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 with focus extensively on rehabilitation, provision of medical facilities, counselling, awareness, education, skill development, economic linkages and convergence with other Government welfare programmes etc.
- The Ministry of Social Justice & Empowerment has allocated a total budget of Rs.100 crore for the SMILE project for coming years till 2025-26.
- Through this project, the Ministry envisions to develop a support mechanism for holistic rehabilitation of those engaged in the act of begging and build an India where no person is forced to beg in order to survive and fulfill their basic needs.
- The objective of SMILE- 75 is to make our cities/town and municipal areas begging-free and make a strategy for comprehensive rehabilitation of the persons engaged in the act of begging through the coordinated action of various stakeholders.
- The Ministry of Social Justice & Empowerment understands the important role of Local Urban Bodies, Civil Society Organisations/Non-Government Organisations to address this persisting social issue with concerted efforts.
- The Government of India has recognised the persisting problem of destitution and beggary and formulated a comprehensive scheme of **SMILE (Support for Marginalised Individuals for Livelihood and Enterprise)** which includes a sub-scheme of comprehensive rehabilitation for persons engaged in begging which covers identification, rehabilitation, provision of medical facilities, counselling, and education, skill development for decent job and self-employment / entrepreneurship.

ESSENTIAL COMMODITIES ACT

- With tur dal prices surging since mid-July and reports coming in of some traders creating artificial supply squeeze by restricting sales, the Centre has invoked the Essential Commodities Act of 1955 to ask States to monitor and verify the stocks available with such traders.
- Tur prices have risen since mid-July amid slow progress in kharif sowing as compared to last year due to excess rainfalls and water logging conditions in parts of major Tur growing states of Karnataka, Maharashtra and Madhya Pradesh, the Department of Consumer Affairs has noted in its rationale for the directive.

Essential Commodities Act, 1955

- It aims to ensure smooth and easy availability of essential items to consumers.
- Under the act, the Government regulates the production, supply and distribution of certain commodities it declares ‘essential’ in order to make them available to consumers at fair prices.
- The list of items under the act includes drugs, fertilisers, pulses and edible oils and petroleum and petroleum products.
- The Centre can include new commodities as and when the need arises and take them off the list once the situation improves.
- The State Governments are the implementing agencies to implement the EC Act, 1955 along with the Prevention of Black marketing & Maintenance of Supplies of Essential Commodities Act, 1980.
- The ECA 1955 is used to curb inflation by allowing the Centre to enable control by state governments of trade in a wide variety of commodities.
- There is no specific definition of essential commodities in the Essential Commodities Act, 1955.
- Section 2(A) states that an “essential commodity” means a commodity specified in the Schedule of the Act.

Issues Related to Essential Commodities Act 1955

- The government intervention under the ECA 1955 often distorted agricultural trade while being totally ineffective in curbing inflation.
- Such intervention does enable opportunities for rent-seeking and harassment. Rent-seeking is a term used by economists to describe unproductive income, including from corruption.
- Traders tend to buy far less than their usual capacity and farmers often suffer huge losses during surplus harvests of perishables.
- This led to farmers being unable to get better prices due to lack of investment in cold storage, warehouses, processing and export.
- Owing to these issues, the Parliament passed the Essential Commodities (Amendment) Bill, 2020. However, due to farmers' protest the Government had to repeal this law.

NATIONAL ACTION PLAN FOR MECHANISED SANITATION ECOSYSTEM (NAMASTE)

- The Ministry of Social Justice and Empowerment (MoSJ&E) is now preparing to undertake a nationwide survey to enumerate all people engaged in hazardous cleaning of sewers and septic tanks, an activity that has led to at least 351 deaths since 2017.
- Drawing a distinction between this work and manual scavenging, the Ministry insisted that the practice of manual scavenging no longer takes place in the country as all manual scavengers had been accounted for and enrolled into the rehabilitation scheme.
- Ministry officials said that the enumeration exercise, soon to be conducted across 500 AMRUT (Atal Mission for Rejuvenation and Urban Transformation) cities, is part of the Union government's National Action Plan for Mechanised Sanitation Ecosystem (NAMASTE), which will streamline the process of rehabilitating sanitation workers and eventually merge with and replace the Self-Employment Scheme for the Rehabilitation of Manual Scavengers (SRMS), which was started in 2007.

National Action Plan for Mechanised Sanitation Ecosystem (NAMASTE)

- The NAMASTE scheme is being undertaken jointly by the Ministry of Housing and Urban Affairs and the MoSJ&E and aims to eradicate unsafe sewer and septic tank cleaning practices.
- Parts of this project, already in the works for the past two years, have led to municipal commissioners being declared as the Responsible Sanitation Authorities (RSAs)
- Sanitation Response Units (SRUs) being set up in 200 cities, where the national helpline for addressing sanitation needs (14420) has also been operationalised.

The project aims to achieve the following outcomes:

- Zero fatalities in sanitation work in India.
- All sanitation work to be performed by skilled workers.
- No sanitation workers should come in direct contact with human faecal matter.
- Sanitation workers are to be collectivized into SHGs and are empowered to run sanitation enterprises.
- All Sewer and Septic tank sanitation workers (SSWs) have access to alternative livelihoods.
- Strengthened supervisory and monitoring systems at national, state and ULB levels to ensure enforcement and monitoring of safe sanitation work.
- Increased awareness amongst sanitation services seekers (individuals and institutions) to seek services from registered and skilled sanitation workers.

Swachhta Udyami Yojana

- The Ministry of Social Justice and Empowerment launched the Swachhta Udyami Yojana (SUJ) on 02nd October 2014.
- This Scheme has twin objective of cleanliness and providing livelihood to Safai Karamcharis and liberated Manual Scavengers to achieve the overall goal of "Swachh Bharat Abhiyan"
- The Swachhta Udyami Yojana extends financial assistance for Construction, Operation and Maintenance of Pay and Use Community Toilets in Public Private Partnership (PPP) Mode and Procurement and Operation of Sanitation related Vehicles.

- The scheme also provides for training the workers in the use of these machines, during which time a stipend of up to ₹3,000 p

PAALAN 1000

- India has taken rapid strides in reducing child mortality since 2014 from 45 per 1,000 live births to 35 per 1,000 live births in 2019.
- Union Minister of State for Health virtual launch of the 'Paalan 1000' National Campaign and Parenting App at the Early Childhood Development Conclave in Mumbai.
- Paalan 1000' focuses on the cognitive development of children in the first two years of their life.
- The app will provide practical advice to caregivers on what they can do in their everyday routine and will help clear doubts.
- A baby's brain development begins during pregnancy and is influenced by the pregnant woman's health, nutrition and environment.
- The first 1,000 days encompasses conception as well as the first two years of a growing child's life and during this period, the child needs the right nutrition, stimulation, love and support.
- The first 1,000 days establishes a solid platform for a child's physical, mental, emotional, cognitive and social health.
- The app combines coaching for parents, families and other caregivers with services designed to meet the families' basic needs.
- The programme is aligned with the mission of the Rashtriya Bal Swasthya Karyakram (RBSK), emphasising responsive care and focused interventions during the first 1,000 days.

NIDAAN (THE NATIONAL INTEGRATED DATABASE ON ARRESTED NARCO-OFFENDERS)

- India's first portal on arrested narco offenders. It is part of the narcotics coordination mechanism (NCORD) portal that was launched by Union Home Minister.
- A first-of-its kind database of arrested narcotics offenders has been made operational for use by various central and State prosecution agencies tasked to enforce anti-drugs laws in the country.
- The portal NIDAAN or the National Integrated Database on Arrested Narco-offenders — has been developed by the Narcotics Control Bureau (NCB).
- It is part of the narcotics coordination mechanism (NCORD) portal that was launched by Union Home Minister in Chandigarh during the national conference on 'Drug trafficking and national security'.
- The NIDAAN platform sources its data from the ICJS (inter-operable criminal justice system) and the e-Prisons (a cloud-based application) repository and it is planned to integrate it in the future with the crime and criminal tracking network system or CCTNS.
- The ICJS, an initiative of the Supreme Court e-committee, was created to enable seamless transfer of data and information among different pillars of the criminal justice system, like courts, police, jails and forensic science laboratories, from one platform.
- "NIDAAN is a one-stop solution for all narcotics offenders' related data and will help investigative agencies as an effective tool to connect the dots while probing narcotics cases.
- The idea to create such a portal was to enhance the capability of all the law enforcement agencies working against drug crimes.
- NIDAAN hosts data about those accused who have been arrested and jailed for drugs offences and those who are "directly or indirectly involved in the produce, manufacture, possession, selling, purchase, transport, warehousing, usage, consumption, inter-state import and export, import into India, export from India or transshipment of any narcotics or psychotropic substance.
- The blueprint prepared for the operation and usage of the portal, any agency can search for the crime history, personal details, fingerprints, court cases and appeals made etc. with regard to a drug offender from any part of the country.

- A distinct feature called 'criminal network' on the portal can also be accessed by agencies, as part of which specific links of an accused to other crimes, linked police FIRs and those who visited them in jail can also be accessed.

HAR GHAR JAL

- Prime Minister congratulated the Goa government for becoming the first state to be Har Ghar Jal certified, which means every household in the state had a piped water connection.
- In a virtual address, he said the Union Territories of Dadra Nagar Haveli and Daman and Diu had achieved the feat as well.

Jal Jeevan Mission

- Jal Jeevan Mission, is envisioned to provide safe and adequate drinking water through individual household tap connection by 2024 to all households in rural India.
- It is being implemented by the Department of Drinking Water and Sanitation under the Jal Shakti Ministry.

Key Features

- The mission implements source sustainability measures as mandatory elements, such as recharge and reuses through greywater management, water conservation, rainwater harvesting.
- The mission is based on a community approach to water and will include extensive Information, Education and communication as a key component of the mission.
- Water quality testing is one of the priority areas under the mission. It also looks to create a Jan Andolan for water thereby making it everyone's priority.

Implementation

- Paani Samitis plan, implement, manage, operate and maintain village water supply systems.
- These consist of 10-15 members, with at least 50% women members and other members from Self-Help Groups, Accredited Social and Health Workers, Anganwadi teachers, etc.
- The committees prepare a one-time village action plan, merging all available village resources.
- The plan is approved in a Gram Sabha before implementation.

AADHAAR-VOTER ID LINKAGE

- There have been instances of block officers mandating the linking of Aadhar with Voter IDs after the Election Commission's campaign to promote the linkage of Voter ID and Aadhaar.
- Form 6B provides the format in which Aadhaar information may be submitted to the electoral registration officer

Why does the government want this?

- The EC conducts regular exercises to maintain an updated and accurate record of the voter base.
- A part of this exercise is to weed out duplication of voters, such as migrant workers who may have been registered more than once on the electoral rolls.
- As per the government, linkage of Aadhaar with voter IDs will assist in ensuring that only one Voter ID is issued per citizen of India.

Is the linking of Aadhaar with one's Voter ID mandatory?

- In December 2021, Parliament passed the Election Laws (Amendment) Act, 2021 to amend the Representation of the People Act, 1950, inter alia.
- Section 23(4) was inserted in the Representation of the People Act, 1950.
- It states that the electoral registration officer may "for the purpose of establishing the identity of any person" or "for the purposes of authentication of entries in electoral roll of more than one constituency or more than once in the same constituency" for citizens already enrolled, require them to furnish their Aadhaar numbers.

- To reflect this amendment, the government notified changes to the Registration of Electors Rules, 1960.
- Rule 26B was added to provide that every person whose name is listed in the roll may intimate his Aadhar number to the registration officer.
- Although, the use of discretionary language throughout the amendments have been accompanied by assurances by both the government and the EC that linkage of the Aadhaar with Voter ID is optional, this does not seem to be reflected in Form 6B issued under the new Rule 26B.

Why is the mandatory linking of Aadhaar to the Voter ID an issue?

- The preference to use Aadhaar for verification and authentication, both by the state and private sector, stems from two reasons.
- First, at the end of 2021, 99.7% of the adult Indian population had an Aadhaar card.
- This coverage exceeds that of any other officially valid document such as driver's licence, ration cards, PAN cards etc that are mostly applied for specific purposes.
- Second, since Aadhaar allows for biometric authentication, Aadhaar based authentication and verification is considered more reliable, quicker and cost efficient when compared to other IDs.

Puttaswamy Judgment

- In Puttaswamy, one of the questions that the Supreme Court explored was whether the mandatory linking of Aadhaar with bank accounts was constitutional or not.
- The Court observed that the mandatory linking of Aadhaar with bank accounts was not only for new bank accounts but also existing ones, failing which the individual will not be able to operate their bank account.
- The Court held that depriving a person of their right to property for non-linkage fell foul of the test of proportionality.
- Even though the situation at hand is slightly different in that other means of verification and authentication are allowed if the person does not hold an Aadhaar, given the wide coverage of Aadhaar, the current design would in effect mandate Aadhaar linkage.
- In this context, it needs to be considered whether requiring an Aadhaar holder to mandatorily provide Aadhaar for authentication or verification would not be considered violative of their informational autonomy (right to privacy) which would allow them to decide which official document they want to use for verification and authentication.
- Moreover, in Lal Babu Hussein (1995), the Supreme Court had held that the Right to vote cannot be disallowed by insisting only on four proofs of identity — voters can rely on any other proof of identity and obtain the right to vote.

What are the operational difficulties?

- First, the preference to Aadhaar for the purposes of determining voters is puzzling as Aadhaar is only a proof of residence and not a proof of citizenship. Therefore, verifying voter identity against this will only help in tackling duplication but will not remove voters who are not citizens of India from the electoral rolls.
- Second, the estimate of error rates in biometric based authentication differ widely. As per the Unique Identification Authority of India in 2018, Aadhaar based biometric authentication had a 12% error rate.
- Lastly, civil society has highlighted that linking of the two databases of electoral rolls and Aadhaar could lead to the linkage of Aadhaar's "demographic" information with voter ID information, and lead to violation of the right to privacy and surveillance measures by the state.

What is the way forward?

- It is important that the government clarifies through correction in Form 6B that the linking is not mandatory and expedites the enactment of a data protection legislation that allays concerns of unauthorised processing of personal data held by the government.

SCHEME FOR ECONOMIC EMPOWERMENT OF DNTs (SEED)

- The Minister of Social Justice and Empowerment launched the Scheme for Economic Empowerment of DNTs (SEED) for the welfare of De-notified, Nomadic and Semi Nomadic Communities.

Who are Denotified Nomadic Tribes (DNTs)

- The DNTs, NTs, SNTs are one of the most deprived and economically weaker communities in India.
- The policies of the colonial government affected lives and livelihood adversely.
- The misery of these communities began with the enactment of the Criminal Tribes Act, 1871 during British rule.
- They were branded as criminals under various colonial acts.
- This has led to the forcible alienation from their traditional occupations and habitations.
- They remained hunter-gatherers and pastoral/peripatetic.
- Even after the Independence, they have not benefitted much from the planned development of over seven decades.
- They were deprived of state support like the SCs/STs.
- After decades of facing horrors of this racial Act, they were denotified by the Government of independent India on August 31, 1952.
- While most DNTs are spread across the Scheduled Castes (SC), Scheduled Tribes (ST) and Other Backward Classes (OBC) categories, some DNTs are not covered in any of the SC, ST or OBC categories.

What is the Scheme for Economic Empowerment of DNTs (SEED)?

- To economically empower De-notified, Nomadic and Semi Nomadic Communities.
- The scheme will be for a period of 5 years starting Financial Year 2021-22 to 2025-26.
- The scheme has been formulated for families having income from all sources of Rs.2.50 lakh or less per annum and not availing any such benefits from similar Scheme of Centre Government or the State Government.
- The Government also decided to create an umbrella scheme for empowerment of these communities and accordingly, the Scheme for Economic Empowerment of DNTs, SNTs & NTs (SEED) has been formulated with four components that affect their livelihood.

The four component of the SEED scheme are:

- Educational empowerment- Free coaching to students from these communities for Civil Services, entry to professional courses like medicine, engineering, MBA, etc.
- Health Insurance through PMJAY of National Health Authority.
- Livelihoods to support income generation, and
- Housing (through PMAY/IAY)

Components of the Scheme:

- To provide coaching of good quality for DNT/NT/SNT candidates to enable them to appear in competitive examinations.
- To provide health insurance to DNT/NT/SNT Communities.
- To facilitate livelihoods initiative at community level to build and strengthen small clusters of DNT/NT/SNT Communities institutions.
- To provide financial assistance for construction of houses to members of the DNT/NT/SNT Communities.
- The scheme will be implemented through a portal that has been developed by the Department of Social Justice & Empowerment. Portal comprises of two modules:
 - One for registration of applicants with details of his family, income, Aadhaar & bank details, occupation, caste certificate, etc. Upon completing the registration, the applicant will be assigned a unique ID (UID) number.
 - Second part consists of a scheme component for which the applicant wants to seek benefit with his UID.
- The other implementing agencies of the scheme are Ministry of Rural Development, National Rural Livelihood Mission (NRLM) and National Health Authority (NHA).

Many commissions and committees constituted since Independence have referred to the problems of these communities.

- The Criminal Tribes Inquiry Committee, 1947 constituted in the United Provinces (now Uttar Pradesh).

- Ananthasayanam Ayyangar Committee in 1949 (it was based on the report of this committee the Criminal Tribes Act was repealed),
- Kaka Kalelkar Commission (also called first OBC Commission) constituted in 1953.
- The B P Mandal Commission constituted in 1980 also made some recommendations on the issue.
- The National Commission to Review the Working of the Constitution (NCRWC), 2002 held that DNTs have been wrongly stigmatised as crime prone and subjected to high handed treatment as well as exploitation by the representatives of law and order and general society.
- The NCRWC was established under the chairmanship of Justice M N Venkatachaliah.
- The National Idate Commission was constituted in 2015 under the chairmanship of Shri Bhiku Ramji Idate.
- Based on the recommendation of this commission, the Government of India set up the Development and Welfare Board for DNTs, SNTs &NTs (DWBDNCs) in 2019.



CivilsTap Hlmachal

INTERNATION RELATIONS

INTERNATIONAL NORTH SOUTH TRANSPORT CORRIDOR (INSTC)

- Recently, two 40-ft containers of wood laminate sheets from Russia's Astrakhan port crossed the Caspian Sea and eventually reach Nhava Shiva port in Mumbai. The journey signalled the launch of the International North South Transport Corridor (INSTC).
- It 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.

The International North-South Transport Corridor(INSTC):

- INSTC was first proposed in 2000 to improve connectivity between Russia, Central Asian states, and India.
- It is a 7,200-km-long multi-modal connectivity project to establish transport networks (ship, rail, and road route). It will be used for moving freight between India, Russia, Iran, Europe, and Central Asia. It will cut costs and time in moving cargo.
- Members: It includes 13 countries namely India, Iran, Russia, Turkey, Armenia, Azerbaijan, Belarus, Kazakhstan, the Kyrgyz Republic, Tajikistan, Oman, Syria, and Ukraine.
- Dry runs of two routes were conducted in 2014 to identify and address key bottlenecks. The two routes were:
 - The first was Mumbai to Baku via Bandar Abbas and
 - The second was Mumbai to Astrakhan via Bandar Abbas, Tehran, and Bandar Anzali.
- However, the project has been slow to take off. Despite a renewed focus on INSTC by India and Russia, work was again hit by the Covid-19 pandemic.
- India's investment in the INSTC is exemplified by its involvement in Iran's Chabahar port and the construction of a 500-km Chabahar-Zahedan railway line.
- Once completed, this infrastructure will allow India access to Afghanistan and central Asia, a prospect strengthened by the Taliban government's support for the project.
- A special economic zone around Chabahar will offer Indian companies the opportunity to set up a range of industries.
- Lines of credit will be extended to Iran by Exim Bank.



Significance of INSTC:

- **Increase in Bilateral Trade:** It has been predicted that improved transport connectivity will increase bilateral trade volumes between Russia, Central Asia, Iran, and India.
- **Shorter and Cheaper Route:** As per the study by the Federation of Freight Forwarders' Associations in India, INSTC route is 30% cheaper and 40% shorter than the current traditional route.
- INSTC has economic and strategic relevance to India due to China's ambitious One Belt, One Road Initiative. Hence, the proposed INSTC trade corridor could help India secure its interests in Central Asia and beyond.
- **Integration with Ashgabat Agreement:** The INSTC can integrate with the Ashgabat agreement.

INDIA-MALDIVES

- Maldives and India signed a cyber security agreement with India as both sides affirmed bilateral will to strengthen ties to take on "transnational crimes and terrorism" in the Indian Ocean region.
- India gifts naval vessel and vehicles for Maldives National Defence Force.
- Both sides exchanged agreements covering areas like women and child development, disaster management, cyber security and infrastructure development.
- To strengthen Maldivian maritime capacity, India has announced the gifting of a second landing assault craft to the Maldives National Defence Force.

Significance of India-Maldives bilateral relationships

- **India's Neighborhood First Policy:** India announced a financial assistance package of \$1.4 billion for the Maldives in the form of budgetary support, currency swap agreements and concessional lines of credit to fulfill socio-economic development programmes.
- **Connectivity:** The two nations emphasized connectivity through the establishment of enabling infrastructure that would promote the exchange of goods and services, information, ideas, culture and people.
- **Direct Cargo Ferry Service:** It will be run between India and Maldives.
- **Bilateral relations:** Maldivian students attend educational institutions in India and patients come to India for healthcare, aided by a liberal visa-free regime extended by India.
- **Quotas for Supply of Essential Commodities:** Given the geographical limitations imposed on the Maldives, India has exempted the nation from export curbs on essential commodities.
- **Financial Aid:** At the peak of the continuing COVID-19 disruption, a financial aid of 250 million USD will be provided to Maldives by India.

History

- **Operation Cactus:** In 1988, in response to a request from the Maldives, India activated Operation Cactus to deploy its military and ensure regime continuity in Male.
- **Disaster Management:** The Government of India has provided large-scale assistance to the Maldives in the aftermath of the 2004 Indian Ocean tsunami and during the 2014 Male water crisis.

Challenges

- **Political Instability:** India's major concern has been the impact of political instability in the neighbourhood on its security and development.
- **Radicalisation:** In the past decade or so, the number of Maldivians drawn towards terrorist groups like the Islamic State (IS) and Pakistan-based madrassas and jihadist groups has been increasing.
- This gives rise to the possibility of Pakistan based terror groups using remote Maldivian islands as a launch pad for terror attacks against India and Indian interests.
- **China Angle:** China's strategic footprint in India's neighbourhood has increased. The Maldives has emerged as an important 'pearl' in China's "String of Pearls" construct in South Asia.

- Given the uncertain dynamics of Sino-Indian relations, China's strategic presence in the Maldives remains a concern.

Also, the Maldives have started using the China card to bargain with India.

TEESTA WATERS AGREEMENT

- India and Bangladesh are likely to ink at least one major river agreement later this month. Apart from the major agreements under discussion, sharing of data of river waters and better flood control planning are expected to feature in the upcoming meeting of the Joint River Commission (JRC) that will meet in the last week of August ahead of PM Bangladesh September 6-7 India visit.
- There is a "strong possibility" that an agreement on the Kushiyara that flows from Assam into Bangladesh is part of one such agreement that may get "done"

Teesta Water Dispute:

- Teesta River is a tributary of the Brahmaputra (known as Jamuna in Bangladesh). It flows through India and Bangladesh.
- The river rises in the eastern Himalayas. It further flows through the Indian states of Sikkim and West Bengal to Bangladesh. It then enters the Bay of Bengal.
- The Teesta water dispute is the most contentious issue between India and Bangladesh.
- However, the Teesta river water sharing agreement has not gotten signed yet, due to opposition from West Bengal.
- Drainage:** It covers nearly the entire floodplains of Sikkim while draining 2,800 sq km of Bangladesh. For West Bengal, it is the lifeline of half-a-dozen districts in North Bengal.
- Bangladesh sought a fair and equitable distribution of Teesta waters from India, on the lines of the Ganga Water Treaty 1996.
- The treaty is an agreement to share surface waters at the Farakka Barrage near their mutual border.
- In 2015, the Indian Prime Minister's visit to Dhaka generated expectations to take forward the issue but it still remains unresolved.
- In India, individual states have significant influence over transboundary agreements, impeding the policy making process.
- West Bengal is one of the key stakeholders of the Teesta agreement and is yet to endorse the deal.



DORNIER MARITIME SURVEILLANCE AIRCRAFT

- India handed over a Dornier aircraft to Sri Lanka in the presence of President Ranil Wickremesinghe, reaffirming its security ties with the island nation.
- Security of India and Sri Lanka are enhanced by mutual understanding, mutual trust and cooperation.
- The gifting of the Dornier aircraft to the Sri Lanka Air Force “is of relevance to and a step to meet its requirements for maritime safety and security.
- The capability of the aircraft to undertake search and rescue operations “exemplifies its direct benefit to the people.
- The gift to the people of Sri Lanka will equip the country to contribute more towards the security of the Indian Ocean Region at large.
- The Indian gift was in response to a request from the Sri Lankan government in 2018 for two Dornier Reconnaissance Aircraft to enhance the maritime surveillance capabilities of the island nation.
- Sri Lanka is a member of the ‘Colombo Security Conclave’, that began as a trilateral initiative involving India, Sri Lanka and the Maldives, and later included Mauritius, for maritime cooperation in the region.

Dornier 228

- The Dornier 228 is a general aircraft with twin engines capable of carrying at least 19 passengers.
- With its Short-Take off and Landing (STOL) capability, it is capable of operating on short runways as well as in hot environments.
- The Dornier 228 has been marketed as a general-service aircraft capable of operating in many roles such as military transport, courier aircraft or cargo hauler.

It carries our special missions such as:

- Maritime Surveillance
- Border Patrol
- Medical Evacuations
- Search and Rescue
- Paradrops
- Environmental research
- It is fitted with special equipment such as 360-degree surveillance radar, searchlights, operator stations, enlarged fuel tanks, satellite uplink etc.

NAGORNO-KARABAKH

- The conflict between Armenia and Azerbaijan over Nagorno-Karabakh has been at the centre of three major wars and multiple clashes for decades.

Nagorno-Karabakh

- Nagorno-Karabakh is a mountainous and heavily forested region that under international law is recognised as part of Azerbaijan.
- However, ethnic Armenians who constitute the vast majority of the population there reject Azeri rule (the legal system of Azerbaijan).

Nagorno-Karabakh Dispute

- It is a disputed territory internationally recognized as part of Azerbaijan but mostly governed by the Republic of Artsakh, de facto independent state with an Armenian ethnic majority backed by neighbouring Armenia.
- Modern-day Armenia and Azerbaijan became part of the Soviet Union when it formed in the 1920s. Nagorno-Karabakh was an ethnic-majority Armenian region, but the Soviets gave control over the area to Azerbaijani authorities.
- It was only as the Soviet Union began to collapse in the late 1980s that Nagorno-Karabakh’s regional parliament officially voted to become part of Armenia.

- Azerbaijan sought to suppress the separatist movement, while Armenia backed it. This led to full-scale war. Armenian forces gained control of Nagorno-Karabakh and areas adjacent to it before a Russian-brokered ceasefire was declared in 1994.
- After that deal, Nagorno-Karabakh remained part of Azerbaijan, but since then has mostly been governed by a separatist, self-declared republic run by ethnic Armenians and backed by the Armenian government.



Strategic Significance

- The energy-rich Azerbaijan has built several gas and oil pipelines across the Caucasus (the region between the Black Sea and the Caspian Sea) to Turkey and Europe.
- Some of these pipelines pass close to the conflict zone (within 16 km of the border).
- In an open war between the two countries, the pipelines could be targeted, which would impact energy supplies and may even lead to higher oil prices globally.

INDIA AND THAILAND RELATIONS

- India and the Southeast Asia region share a long history of cultural and commercial relations. The classical Sanskrit and Pali texts from India carry references of the region using various names such as Kathakosha, Suvarnabhumi (the land of god) or Suvarnadvipa (the golden island).
- As part of his visit to Thailand for the ninth India-Thailand joint commission meeting, External Affairs Minister visited the Devasthan in Bangkok.
- The Devasthan is the Royal Brahmin Office of the Thai Royal Court and is the official centre of Hinduism in Thailand.
- A French scholar named George Coedes. He coined the term 'Farther India' to refer to those states that experienced "the civilising activity of India'.
- Geographically, it refers to Vietnam, Cambodia, Laos, Thailand, Myanmar and the Malay states.
- The Sanskrit, Buddhist, and Jain texts indicate that interactions between the two regions go back more than two thousand years ago, mainly through sea voyages and that trade played an important role.
- In the past two decades, with regular political exchanges, growing trade and investment, India's ties with Thailand have now evolved into a comprehensive partnership. India's 'Act East' policy has been complemented by Thailand's 'Act West' policy in bringing the two countries closer.

India-Thailand Religious Link

- The traders brought along with them Indian religion, culture, traditions and philosophy along with them to the shores of Southeast Asia.
- They were also accompanied by Brahmin priests, Buddhist monks, scholars and adventurers and all of them played an important role in the transmission of Indian culture to the natives of Southeast Asia.
- Some of the merchants and Brahmin priests married the local girls and were often employed by the local rulers.
- The Mon kings of Dvaravati and the Khmers had patronised Buddhism and built several Buddhist edifices, but at the same time had also adopted Brahmanical customs and practises.
- Apart from the popular Brahmanical deities of Ganesh, Brahma, Vishnu, and Shiva, those that are largely absent in Indian socio-religious landscape, such as Indra are also worshiped in Thailand.

Strategic partnership

- In the past two decades, with regular political exchanges, growing trade and investment, India's ties with Thailand have now evolved into a comprehensive partnership.
- India's 'Act East' policy has been complemented by Thailand's 'Look West' policy in bringing the two countries closer.
- Both countries are important regional partners linking South and Southeast Asia.
- They cooperate closely in the ASEAN, East Asia Summit (EAS) and BIMSTEC groupings as also Mekong Ganga Cooperation (MGC), Asia Cooperation Dialogue (ACD) and Indian Ocean Rim Association (IORA).
- The India-AESAN Agreement on Trade in Goods was implemented in January 2010 and the India-ASEAN FTA in Services and Investments was signed in September 2014 and came into force in July 2015.

Culture

- Cultural exchanges take place under the framework of a Cultural Exchange Programme (CEP) between the two governments.
- An Indian Cultural centre was opened in Bangkok in September 2009.
- Cultural Agreement Programme for 2016-19 was signed during the visit of Thai PM to India in June 2016.
- A number of India Studies Centers are operational in prestigious Thai Universities.
- Regular visits of Indian cultural troupes are organized, in addition to Indian film and food festivals etc.

Indian Diaspora in Thailand:

- It is estimated that there are around 250,000 people of Indian origin in Thailand.
- Many of them have lived here for several generations over the past century. Majority of them hold Thai nationality.
- The Indian community mainly comprises Sikhs, Punjabis, Gorakhpuris, Tamils and Sindhis. Two persons of Indian origin from Thailand have been awarded the Pravasi Samman in 2006 and 2010.
- Thailand is working hard with India to link these two markets through India's Northeastern region and Cambodia, Lao PDR and Myanmar.
- However, beyond the much awaited India-Myanmar-Thailand Trilateral Highway, modes of connectivity, particularly maritime and air, can also be utilized to their maximum potential

Military and Security relations

- The security relations between the two are constructive and mutually beneficial, covering the land, sea and air dimensions.
- There is also a common challenge in the fight against terrorism, narcotics and transnational organized crime.
- As an emerging power, India has a valuable role to play, together with other regional powers, in ASEAN and the greater Indo-Pacific.
- The ASEAN community of 625 million people is on the rise and is a worthy counterpart for the Indian market of 1.3 billion people.

Defence Cooperation

- Since 2015, India is participating in Ex-Cobra Gold, the largest Asia Pacific Military exercise as 'Observer Plus's category.
- Bilateral exercises are held annually between the armed forces of both countries.
- Exercise MAITREE (Army).
- Exercise SIAM BHARAT (Air Force).
- The Indo-Thai relation today is not just looked upon from the angle of socio-cultural ties. Since the relation in today's context has become very comprehensive in its scope. This bilateral engagement has the potential to foster growth not only restricted to the two nations but for the entire region.

ULCHI FREEDOM SHIELD

- The South Korea-United States drills, called the Ulchi Freedom Shield, are scheduled to run until September 1. They are tri-service drills involving thousands of troops as well as live-fire exercises.
- South Korea and the United States began their largest joint military drills since 2017.
- The military drills included the resumption of field training. These joint military drills are designed to test readiness against North Korea's missile tests.
- These military and civil drills "are aimed at improving the country's preparedness to match the changing patterns of war, with evolving cyber threats against key facilities such as chip factories and supply chains".
- The drills will include a rehearsal of "scenarios, such as responding to North Korea's attacks on key industrial facilities including an airport, a semiconductor factory, or a nuclear power plant
- These joint drills come after North Korea rejected South Korea's proposals that Pyongyang give up its nuclear capabilities in phases, in return for economic benefits.

MALVINAS ISLAND

- India reiterated support for international negotiations regarding a territorial matter between Argentina and the United Kingdom in the Southern Atlantic Ocean.
- Falkland Islands, also called Malvinas Islands or Spanish *Islas Malvinas*, internally self-governing overseas territory of the United Kingdom in the South Atlantic Ocean.
- It lies about 300 miles northeast of the southern tip of South America and a similar distance east of the Strait of Magellan.
- The capital and major town is Stanley, on East Falkland, there are also several scattered small settlements as well as a Royal Air Force base that is located at Mount Pleasant.

History of the Falkland Islands

- In 1820 the Argentina Government, which had declared its independence from Spain in 1816, proclaimed its sovereignty over the Falklands.
- In early 1833, a British force expelled the few remaining Argentine officials from the island without firing a shot. In 1841, a British civilian lieutenant governor was appointed for the Falklands, and by 1885 a British community of some 1,800 people on the islands was self-supporting.
- Argentina regularly protested Britain's occupation of the islands.
- After World War II (1939-45) the issue of sovereignty over the Falkland Islands shifted to the United Nations (UN) when, in 1964, the islands' status was debated by the UN committee on decolonization.
- In 1965, the UN General Assembly approved a resolution inviting Britain and Argentina to hold discussions to find a peaceful solution to the dispute.
- These protracted discussions were still proceeding in February 1982, but in April Argentina's military government invaded the Falklands.
- This act started the Falkland Islands War, which ended 10 weeks later with the surrender of the Argentine forces at Stanley to British troops who had forcibly reoccupied the islands.
- Although Britain and Argentina reestablished full diplomatic relations in 1990, the issue of sovereignty remained a point of contention.
- In the early 21st century Britain continued to maintain some 2,000 troops on the islands.

In a referendum held in March 2013, islanders voted nearly unanimously to remain a British overseas territory.

ZAPORIZHZHIA NUCLEAR PLANT

- The Zaporizhzhia nuclear power station has been under Russian control since early March, but an escalation of the conflict in the town this month, including shelling and mortar attacks, some of which damaged parts of the nuclear station, has raised the spectre of nuclear disaster.
- A team of officials from the International Atomic Energy Agency (IAEA) arrived in Ukraine to assess the condition of the plant, after Russia agreed to their visit.



International Atomic Energy Agency (IAEA)

- The International Atomic Energy Agency (IAEA) is widely known as the world's Atoms for Peace and Development. It was established as an autonomous organization in 1957.
- It seems to promote the peaceful use of nuclear energy, and to inhibit its use for any military purpose, including nuclear weapons.
- It is headquartered in Vienna, Austria.
- Though established as an autonomous organisation, the IAEA reports to both the United Nations General Assembly and the UN Security Council.
- The IAEA and its former Director General, Mohamed ElBaradei were jointly awarded the Nobel Peace Prize in 2005. The IAEA was created in 1957 in response to the deep fears and expectations generated by the discoveries and diverse uses of nuclear technology.

Objectives and Function

- The Agency works with its Member States and multiple partners worldwide to promote safe, secure and peaceful use of nuclear technologies.
- IAEA seeks to promote the peaceful use of nuclear energy and to inhibit its use for any military purpose, including nuclear weapons.
- It reports annually to the United Nations General Assembly.
- When necessary, the IAEA also reports to the UN Security Council in regards to instances of members' non-compliance with safeguards and security obligations.
- In 2005, it was awarded the Nobel Peace Prize for their work for a safe and peaceful world.

GENERAL STUDIES 3.

SECURITY ISSUES

THE WEAPONS OF MASS DESTRUCTION AND THEIR DELIVERY SYSTEMS (PROHIBITION OF UNLAWFUL ACTIVITIES) AMENDMENT BILL, 2022

- The Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Amendment Bill, 2022, was passed in Rajya Sabha.
- The Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Amendment Bill, 2022 was introduced in Lok Sabha on April 5, 2022.
- The 2005 Act prohibits unlawful activities (such as manufacturing, transport, or transfer) related to weapons of mass destruction, and their means of delivery.
- Weapons of mass destruction are biological, chemical, or nuclear weapons.

Prohibition on financing certain activities:

- The Bill bars persons from financing any prohibited activity related to weapons of mass destruction and their delivery systems.
- To prevent persons from financing such activities, the central government may freeze, seize or attach their funds, financial assets, or economic resources (whether owned, held, or controlled directly or indirectly).
- It may also prohibit persons from making finances or related services available for the benefit of other persons in relation to any activity which is prohibited.

MINERALS SECURITY PARTNERSHIP

- India is exploring the possibilities of joining the Minerals Security Partnership.
- Minerals Security Partnership is an ambitious new US-led partnership to secure supply chains of critical minerals, aimed at reducing dependency on China.
- Major members are US, Australia, Canada, Finland, France, Germany, Japan, the Republic of Korea, Sweden, United Kingdom, and the European Commission.
- The new grouping could focus on the supply chains of minerals such as Cobalt, Nickel, Lithium and also the 17 "rare earth" minerals.

Significance for India

- Given the push of India towards Electric Vehicles, it needs to secure the supply of critical minerals.
- China has created a processing infrastructure in rare earth minerals and has acquired mines in Africa for elements such as cobalt.

Rare Earth Element

- Rare earth comprises seventeen elements and are classified as light RE elements (LREE) and heavy RE elements (HREE).
- Scandium and yttrium, while not true rare earth elements, are also included.
- REEs are key components in many electronic devices that we use in our daily lives, as well as in a variety of industrial application.
- Some REs are available in India such as Lanthanum, Cerium, Neodymium, Praseodymium, and Samarium.
- While others such as Dysprosium, Terbium, Europium that are classified as HREE are not available in Indian deposits in extractable quantity.

BUTTERFLY MINE

- Russia is likely to have deployed anti-personnel mines to deter freedom of movement along its defensive lines in the Donbas.
- The UK Ministry of Defence, in its intelligence assessment of the ongoing war in Ukraine, has and sounded an alarm on the possible use of PFM-1 series 'Butterfly Mines' by the Russian military in Donetsk and Kramatorsk.

What is the intelligence assessment put out by UK ?

- As per an intelligence bulletin, Russia is likely to have deployed anti-personnel mines to deter freedom of movement along its defensive lines in the Donbas.
- These mines have the potential to inflict widespread casualties amongst both the military and the local civilian population.
- In Donetsk and Kramatorsk, Russia has highly likely attempted employment of PFM-1 and PFM-1S scatterable anti-personnel mines.
- Commonly called the 'butterfly mine', the PFM-1 series are deeply controversial, indiscriminate weapons.
- PFM-1s were used to devastating effect in the Soviet-Afghan War where they allegedly maimed high numbers of children who "mistook them for toys," .
- It is highly likely that the Soviet-era stock being used by Russia will have degraded over time and is now unreliable and unpredictable.
- This poses a threat to both the local population and humanitarian mine clearance operations.

What is the 'Butterfly Mine' and why is it called so?

- The PFM-1 and PFM-1S are two kinds of anti-personnel landmines that are commonly referred to as 'Butterfly mines' or 'Green Parrots'.
- These names are derived from the shape and colour of the mines.
- The main difference between the PFM-1 and PFM-1S mine is that the latter comes with a self destruction mechanism which gets activated within one to 40 hours.
- The 'Butterfly mine' has earned a reputation for being particularly attractive to children because it looks like a coloured toy.
- It is very sensitive to touch and just the act of picking it up can set it off.
- Because of the relatively lesser explosive packed in this small mine, it often injures and maims the handler rather than killing them.
- These mines are also difficult to detect because they are made of plastic and can evade metal detectors.
- These mines can be deployed in the field of action through several means, which include being dropped from helicopters or through ballistic dispersion using artillery and mortar shells.
- These mines glide to the ground without exploding and later explode on coming in contact.
- Since these mines were green in colour when they were first put to use they also earned the name 'Green Parrots'.

What are the technical specifications of this mine?

- The PFM series mines are moulded in polythene plastic and have two wings, one of which is heavier than the other.
- The thicker wing is the pressure activation for the main fuse which is contained in the central body.
- The thinner wing acts as a stabiliser for the mine when it is air-dropped, thus giving it the name 'butterfly'.
- As per data available on the mine, a pressure exceeding 5 kg will activate the mine which contains 40g of explosive.
- The rapid means of deployment of the mine and the fact that it can be indiscriminately scattered to impede the advance of an enemy makes it an attractive option for a field commander, regardless of the danger that these can pose for non-combatants living in the area.

Are these kind of mines allowed by international law?

- The anti personal mines are banned by international convention on land lines but Russia and Ukraine are not signatories to it.
- However, there is a 1996 Amended Protocol II to the **Convention on Certain Conventional Weapons-the Landlines Protocol** to which Russia and Ukraine are signatories.
- In the ongoing conflict, both countries have accused each other of having used these mines, since both possess them in sufficient numbers. Allegations and counter-allegations of the use of these mines have been made in Mariupol, Kharkiv and now Donetsk.

ATAGS (ADVANCED TOWED ARTILLERY GUN SYSTEM)

- In a first, an indigenously developed howitzer gun, ATAG, became part of the 21-gun salute during the Independence Day ceremony at the Red Fort.
- 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.

Development of the ATAGS

- The ATAGS project was started in 2013 by DRDO to replace older guns in service in the Indian Army with a modern 155 mm artillery gun.
- With ARDE as the nodal laboratory, other DRDO facilities that joined the development efforts are Instruments Research and Development Establishment (IRDE), Vehicle Research and Development Establishment (VRDE), Proof and Experimental Establishment (PXE), Centre for Artificial Intelligence and Robotics (CAIR), and Defence Electronics Applications Laboratory (DEAL).
- The ARDE has collaborated with Bharat Forge Limited and Tata Advanced Systems Ltd for the manufacturing of this specialised gun system.
- 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.
- During its test at Pokhran, The maximum ranges of 38.5 km and 48 km, with boat tail and extended range full bore types of projectiles.
- During the same trials, a minimum range of 4.7 km was achieved from the systems meeting the critical parameter of minimum range at high angle.
- The specialised gun system is compatible with C4I (command, control, communications, computers, and intelligence) systems like the Artillery Combat Command and Control System (ACCCS) called Shakti for technical fire control, fire planning, deployment management, and operational logistics management of the Army.

INDIAN ECONOMY

ELECTRICITY (AMENDMENT) BILL, 2022

- As the dues of power distribution companies (discoms) to power generators surge to unsustainable levels, with states holding back payments to be made to discoms for electricity supplies as well as against subsidies for free power schemes, the Centre is set to give distribution reforms a renewed push.
- The Electricity (Amendment) Bill 2022, to be introduced in the ongoing monsoon session of Parliament, is likely to push state electricity regulatory commissions to take up timely revision of tariffs and catalyse competition in the retail power distribution sector.
- This also comes amid a renewed debate on the freebie culture and the focus on the mounting dues of power distribution companies.
- According to latest government data, discoms of three states
- Tamil Nadu, Maharashtra and Telangana owed about 57 per cent of total dues to power generating companies (gencos);
- Followed Uttar Pradesh and Madhya Pradesh and the UTs of Jammu & Kashmir, which account for another about 26 per cent of the total dues of Rs 1,14,222 crore owed to power generation companies.
- Government data updated till March 31, 2022 show that states owe Rs 62,931 crore for services and another Rs 76,337 crore against cost of freebies announced by them to state discoms.

Electricity (Amendment) Bill 2022

- The suggested amendments are to the Electricity Act, 2003 which was enacted to consolidate the laws relating to the generation, transmission, distribution, trading, and use of electricity and generally for taking measures conducive to the development of electricity.
- The Bill proposes that power distribution licensees will be allowed to use the networks of other licensees, which could boost competition and enhance efficiency.
- The government also hopes to insert a new section in the Act that will enable the management of power purchase and cross-subsidy in case of multiple distribution licensees in the same area of supply.
- These measures are expected to promote competition in the power distribution sector so that consumers benefit from competitive prices.
- The government also proposes to enable regulators to fix a minimum tariff ceiling to discourage unhealthy pricing wars among distributors and a maximum ceiling to ensure consumers are protected against price increase shock.
- Amendments are also being made in the Act to strengthen the functioning of the National Load Despatch Centre for ensuring the safety and security of the grid and for the economic and efficient operation of the power system in the country.
- The amendments to the act and other recent policy initiatives like the Ministry of Power's flagship Revamped Distribution Sector Scheme (RDSS) are aimed at resolving issues in the power sector.

DIGITAL LENDING NORMS

- Aiming to curb rising malpractices in the digital lending ecosystem, the Reserve Bank of India (RBI) issued guidelines for entities engaged in digital lending.
- The norms stating that all digital loans must be disbursed and repaid through bank accounts of regulated entities only, without pass-through of **lending service providers (LSPs)** or other third parties.
- The norms follow the recommendations of a working group for digital lending, whose report was made public last November.
- The concerns primarily relate to unbridled engagement of third parties, mis-selling, breach of data privacy, unfair business conduct, charging of exorbitant interest rates, and unethical recovery practices.

The regulator classified digital lenders into three categories:

- Entities regulated by the RBI and permitted to carry out lending business,
- Entities authorised to carry out lending as per other statutory or regulatory provisions but not regulated by the RBI.
- Entities lending outside the purview of any statutory or regulatory provisions.
- The latest regulatory framework is focussed on the digital lending ecosystem of RBI's **regulated entities (REs)** and the LSPs engaged by them to extend credit facilitation services.
- As for entities falling in the second category, the respective regulator may consider formulating rules on digital lending, based on the recommendations of the working group.
- For entities in the third category, the working group has suggested specific legislative and institutional interventions for consideration by the government to curb illegitimate lending.
- Apart from direct disbursements and repayments of digital loans, the norms mandate that any fees or charges payable to LSPs in the credit intermediation process shall be paid directly by the RE and not by the borrower.
- A standardised **key fact statement (KFS)** must be provided to the borrower before executing the loan contract.
- The all-inclusive cost of digital loans in the form of **annual percentage rate (APR)** will have to be disclosed to borrowers. The APR shall also form part of KFS.
- Automatic increases in credit limit without the explicit consent of borrowers has been prohibited.
- The loan contract must provide for a cooling-off or look-up period during which borrowers can exit digital loans by paying the principal and the proportionate APR without any penalty.
- All digital lending products extended by REs over merchant platforms involving short term credit or deferred payments must also be reported to credit bureaus by the REs.

What is digital lending?

- Digital lending refers to the online disbursement of loans where all processes, including loan approval and recovery, take place remotely, typically through mobile apps.
- A borrower-friendly approach, reduced paperwork, high availability, and economic implications of the covid pandemic are the reasons for the increased surge in digital lending.

Significance of Digital Lending

- It helps in meeting the huge unmet credit need, particularly in the micro enterprise and low-income consumer segment in India.
- It helps in reducing informal borrowings as it simplifies the process of borrowing.
- It decreases time spent on working loan applications in-branch. Digital lending platforms have also been known to cut overhead costs by 30-50%.

Challenges

- Rising bad loans in the retail segment could be a big worry.
- Aggressive growth of digital lending at the cost of quality of lending can lead to deterioration of asset quality for banks.

Steps Taken by RBI:

- Non-Banking Financial Companies (NBFCs) and banks need to state the names of online platforms they are working with.
- A separate legislation should be enacted to oversee Digital Lending.
- Digital lending apps should be subjected to a verification process by a nodal agency to be set up in consultation with stakeholders.
- Regulators may consider introducing interest rate caps in a phased manner, broadly in line with the effective interest rates of credit cards.
- Disbursement of loans should be made directly into the bank accounts of borrowers, and servicing of loans should be done only through the bank accounts of the digital lenders.

NATIONAL INTELLECTUAL PROPERTY AWARENESS MISSION (NIPAM)

- National Intellectual Property Awareness Mission (NIPAM) has achieved target of imparting Intellectual Property (IP) awareness and basic training to 1 million students on 31st July 2022, ahead of the deadline which was 15 August 2022.
- NIPAM, a flagship program to impart IP awareness and basic training, was launched on 8 Dec 2021 as a part of "Azadi Ka Amrit Mahotsav" celebrations.
- The program is being implemented by Intellectual Property Office, the Office of Controller General of Patents, Designs and Trade Marks (CGPDTM), Ministry of Commerce and Industry.
- During the period 08 December 2021 to 31st July 2022, the following milestones achieved:
 - No. of participants (students/faculty) trained on IP = 10, 05, 272
 - Educational institutes covered = 3662
 - Geographical coverage = 28 states and 7 Union Territories
- The way forward is to strengthen the NIPAM program further to nurture and encourage innovation and creativity, thereby contributing towards cultural and economic development of the society through a revamped manner utilizing the existing resources of the IP Office in collaboration with Atal Innovation Mission (AIM), AICTE, UGC etc.

EMERGENCY CREDIT LINE GUARANTEE SCHEME

- The Centre has announced raising the allocation under the Emergency Credit Line Guarantee Scheme (ECLGS) by Rs 50,000 crore to Rs 5 lakh crore.
- As per data by the government and banks, loans of about Rs 3.67 lakh crore have been sanctioned under ECLGS till August 5, and Rs 2.54 lakh crore had been disbursed till April 30.
- The ECLGS was unveiled as part of the comprehensive package announced by the government in March 2020 to aid the MSME sector in view of the economic distress caused by the Covid pandemic and lockdowns.
- The tourism sector was one of the worst hit, as people postponed/cancelled their business and leisure travel plans.
- With high immunisation levels, progressive roll-back of restrictions and overall economic recovery, conditions are in place for sustained growth in demand for these sectors as well.
- This additional guarantee cover is expected to support the recovery of these sectors as well.

Emergency Credit Line Guarantee Scheme (ECLGS):

- Emergency Credit Line Guarantee Scheme (ECLGS) launched as part of the Covid-19 relief package called the Atma Nirbhar Bharat Abhiyan.
- The aim is to provide Rs 3 lakh crore worth of collateral-free, government guaranteed loans to micro, small and medium enterprises (MSMEs) across India. Further, it aims to mitigate the distress caused by the coronavirus-induced lockdown.
- National Credit Guarantee Trustee Company (NCGTC) is the guarantee provider under the ECLGS scheme.

Objective

- To provide fully guaranteed and collateral free additional credit to MSMEs, business enterprises, MUDRA borrowers and individual loans for business purposes to the extent of 20% of their credit outstanding as on 29th February, 2020.
- 100% guarantee coverage is being provided by the National Credit Guarantee Trustee Company, whereas Banks and Non Banking Financial Companies (NBFCs) provide loans.
- Eligibility: Borrowers with credit outstanding up to Rs. 50 crore as on 29th February, 2020, and with an annual turnover of up to Rs. 250 crore are eligible under the Scheme.

- On 1st August, 2020 the government widened the scope of the Rs. 3 lakh crore-ECLGS scheme by doubling the upper ceiling of loans outstanding and including certain loans given to professionals like doctors, lawyers and chartered accountants for business purposes under its ambit.
- Tenor of loans provided under the Scheme is four years, including a moratorium of one year on principal repayment.
- Interest rates under the Scheme are capped at 9.25% for Banks and Financial Institutions (FIs), and 14% for NBFCs.

Benefits of the Scheme

- The scheme is expected to provide credit to the sector at a low cost, thereby enabling MSMEs to meet their operational liabilities and restart their businesses and recover early.
- The Scheme is expected to have a positive impact on the economy and support its revival.

National Credit Guarantee Trustee Company Ltd (NCGTC)

- It was set up by the Department of Financial Services, Ministry of Finance, Government of India to, inter alia, to act as a common trustee company to manage and operate various credit guarantee trust funds.
- NCGTC was incorporated under the Indian Companies Act, 1956 in 2014 with a paid up capital of ₹10 crore, with its registered office at Bandra (East), Mumbai.

INFLATION TARGET BREACH

- In eight years, this will be the first time the RBI would have let retail inflation slip beyond the upper tolerance limit of 6 per cent for three straight quarters.
- The Reserve Bank of India will call a special meeting of its Monetary Policy Committee (MPC) after October 12 to discuss a report it will have to submit to the Union government explaining the reasons for the average retail inflation remaining above the upper tolerance limit of 6 per cent for three consecutive quarters.
- The Union government, in consultation with the RBI, fixes the inflation target for the central bank every five years.
- It had fixed it at 4 per cent plus/ minus 2 per cent (upper limit 6 per cent, lower limit 2 per cent) for the period August 5, 2016 to March 31, 2021, and retained it for the next five years ending March 31, 2026.
- A monetary policy framework was signed between then RBI Governor Raghuram Rajan (on behalf of the RBI) and then Finance Secretary Rajiv Mehrishi (on behalf of the President) on February 20, 2015.
- The RBI Act, 1934, was amended in May 2016, giving effect to this framework agreement.
- The framework agreement requires the RBI to submit a report to the Union government if it is in breach of the inflation targets for three consecutive quarters.
- The average retail inflation in January-March 2022 and April-June 2022, according to data released by the National Statistics Office, was 6.34 per cent and 7.28 per cent, respectively.
- In July this year, it stood at 6.71 per cent. The data for August and September is scheduled to be released on September 12 and October 12, respectively.
- Upon failing to meet the inflation target, the RBI would have to state the reasons for failure to achieve the target, propose remedial actions to bring it down to 4 per cent, and also provide an estimate of the time-period within which the target would be achieved.
- These would be presented in a report to the Union Ministry of Finance.
- It would be up to the government to make the RBI report public. The special meeting of the MPC would discuss the RBI report before it is submitted.

Monetary Policy Committee (MPC)

- Under Section 45ZB of the amended RBI Act, 1934, the central government is empowered to constitute a six-member Monetary Policy Committee (MPC).
- The Section 45ZB lays down that “the Monetary Policy Committee shall determine the Policy Rate required to achieve the inflation target”.

- Section 45ZB says the MPC shall consist of 6 members:

Composition

- RBI Governor as its ex officio chairperson,
- Deputy Governor in charge of monetary policy,
- An officer of the Bank to be nominated by the Central Board,
- Three persons to be appointed by the central government.
- This category of appointments must be from “persons of ability, integrity and standing, having knowledge and experience in the field of economics or banking or finance or monetary policy”.

GI TAG TO MITHILA MAKHANA

- The government has awarded Geographical Indication (GI) tag to Mithila Makhana, a move which is expected to help growers get the maximum price for their premium produce.
- “Mithila Makhana registered with GI Tag, farmers will get profit and it will be easier to earn.
- Mithila Makhana or Makhan is a special variety of aquatic fox nut cultivated in Mithila region of Bihar and Nepal.
- The GI registry certificate, it is certified that the GI has been registered in the name of Mithilanchal Makhana Utpadak Sangh.

GI Tag

- Once a product gets this tag, any person or company cannot sell a similar item under that name. This tag is valid for a period of 10 years following which it can be renewed.
- The other benefits of GI registration include legal protection to that item, prevention against unauthorised use by others, and promoting exports.
- A GI is primarily an agricultural, natural or a manufactured product (handicrafts and industrial goods) originating from a definite geographical territory.
- Typically, such a name conveys an assurance of quality and distinctiveness, which is essentially attributable to the place of its origin.
- There is a proper process of registration of GI products which includes filing of application, preliminary scrutiny and examination, show cause notice, publication in the geographical indications journal, opposition to registration, and registration.
- Any association of persons, producers, organisation or authority established by or under the law can apply. The applicant must represent the interest of the producers. It is a legal right under which the GI holder can prohibit others from using the same name.
- The famous goods which carry this tag include
 - Basmati Rice,
 - Darjeeling Tea,
 - Chanderi Fabric,
 - Mysore Silk,
 - Kullu Shawl,
 - Kangra Tea,
 - Thanjavur Paintings,
 - Allahabad Surkha,
 - Farrukhabad Prints,
 - Lucknow Zardozi and
 - Kashmir Walnut Wood Carving.

GRAMEEN UDYAMI PROJECT

- To augment skill training in tribal communities for their inclusive and sustainable growth, National Skill Development Corporation (NSDC) in partnership with Seva Bharti and Yuva Vikas Society, today launched the second phase of Grameen Udyami Project.

- Under the initiative, the endeavour is to multi skill India's youth and impart functional skills to them for enabling livelihoods.
- Prime Minister has emphasised on the involvement of tribal communities in the workforce, ensuring their holistic development to make them self-reliant and contained within their respective geographies.

Grameen Udyami

- 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 six states— Maharashtra, Rajasthan, Chhattisgarh, Madhya Pradesh, Jharkhand, and Gujarat.
- The project is implemented under Sansadiya Parisankul Yojana.

Objectives

- Increase in Rural/Local Economy
- Enhance employment opportunities
- Reduce forced migration due to lack of local opportunities
- Conservation of natural resources

The training under the project will be conducted in the following Job roles which are relevant to the local economy.

- Electrician & Solar PV Installation Technician
- Plumbing & Masonry
- 2-Wheeler Repair & Maintenance
- IT/ITES with e-Governance
- Farm Mechanization

National Skill Development Corporation (NSDC)

- The National Skill Development Corporation (NSDC) is a non-profit public limited company established on July 31, 2008, under Section 25 of the Companies Act, 1956.
- The Ministry of Finance established NSDC as a Public Private Partnership (PPP) model.
- The Government of India, through the Ministry of Skill Development and Entrepreneurship (MSDE), owns 49% of NSDC, while the private sector owns the remaining 51%.
- The organisation provides funding to develop scalable and successful initiatives for vocational training.

ARTH GANGA

- The Director General of the National Mission for Clean Ganga, spoke about the Arth Ganga model during his virtual keynote address to the Stockholm World Water Week 2022.
- Since 1991, the Stockholm International Water Institute has been organising the World Water Week every year to address global water concerns.

The Arth Ganga Concept

- PM first introduced the concept during the first National Ganga Council meeting in Kanpur in 2019, where he urged for a shift from Namami Gange, the Union Government's flagship project to clean the Ganga, to the model of Arth Ganga.
- The latter focuses on the sustainable development of the Ganga and its surrounding areas, by focusing on economic activities related to the river.
- At its core, the Arth Ganga model seeks to use economics to bridge people with the river.

Features

- Under Arth Ganga, the government is working on six verticals.

- The first is Zero Budget Natural Farming, which involves chemical-free farming on 10 km on either side of the river, and the promotion of cow dung as fertiliser through the GOBARdhan scheme.
- The Monetization and Reuse of Sludge & Wastewater is the second, which seeks to reuse treated water for irrigation, industries and revenue generation for Urban Local Bodies (ULBs).
- Arth Ganga will also involve Livelihood Generation Opportunities, by creating haats where people can sell local products, medicinal plants and ayurveda.
- The fourth is to increase public participation by increasing synergies between the stakeholders involved with the river.
- The model also wants to promote the cultural heritage and tourism of Ganga and its surroundings, through boat tourism, adventure sports and by conducting yoga activities.
- Lastly, the model seeks to promote institutional building by empowering local administration for improved water governance.

Arth Ganga Initiatives

- The Arth Ganga campaign including the virtual launch of Jalaj initiative under Arth Ganga by the Minister for Jal Shakti on the main stem of Ganga basin states - Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal.
- Jalaj is being implemented in association with Wildlife Institute of India.
- A trained cadre of Ganga Praharis have been created from among the local people by WII for biodiversity conservation and Ganga rejuvenation.
- Jalaj, innovative mobile livelihood centre, are aimed at aligning the skill enhancement activities with Ganga conservation.
- Jalaj is visualized as a model for livelihood diversification, through promotion of local produce and facilitates stakeholder participation in ecological and economic spheres for river conservation in line with “Arth Ganga” objectives.

ImAvatar

- A tourism related portal ImAvatar to promote livelihood opportunities along the Ganga basin by promoting Arth Ganga initiative through tourism, marketing of local products, both agriculture and handicrafts, sustainability of ghats and other assets created by NMCG was also launched on the occasion.
- Both NMCG and ImAvatar would work together in the areas of public participation through religious and spiritual tourism and creating market linkages.

New course ‘River Champ’ on CLAP:

- The continuous learning and activity portal (CLAP) is an online platform for raising awareness, actions and debates around river conservation in India.

ONE NATION ONE FERTILISER SCHEME

- The Ministry of Chemicals and Fertilisers announced that it has been decided to implement One Nation One Fertiliser by introducing a “Single Brand for Fertilisers and Logo” under the fertiliser subsidy scheme named “**Pradhanmantri Bhartiya Janurvarak Pariyojna**”
- The office memorandum said, “the single brand name for UREA, DAP, MOP and NPK etc. would be **BHARAT UREA, BHARAT DAP, BHARAT MOP and BHARAT NPK** etc. respectively for all Fertiliser Companies, State Trading Entities (STEs) and Fertiliser Marketing Entities (FMEs)”
- Also, “A logo indicating Fertiliser subsidy scheme namely Pradhanmantri Bhartiya Janurvarak Pariyojna will be used on said fertiliser bags”.
- Under the new “One Nation One Fertiliser” scheme, companies are allowed to display their name, brand, logo and other relevant product information only on one-third space of their bags.
- On the remaining two-thirds space, the “Bharat” brand and Pradhanmantri Bharatiya Jan Urvarak Pariyojana logo will have to be shown.

What is the government's argument for introducing this scheme?

- The government's logic for introducing a single 'Bharat' brand for all subsidised fertilisers being marketed by companies is as follows:
- There are some 26 fertilisers (inclusive of urea), on which government bears subsidy and also effectively decides the MRPs;
- Apart from subsidising and deciding at what price companies can sell, the government also decides where they can sell. This is done through the Fertiliser (Movement) Control Order, 1973. Under this, the department of fertilisers draws an agreed monthly supply plan on all subsidised fertilisers in consultation with manufacturers and importers.
- When the government is spending vast sums of money on fertiliser subsidy (the bill is likely to cross Rs 200,000 crore in 2022-23), plus deciding where and at what price companies can sell, it would obviously want to take credit and send that message to farmers.

What can be the drawbacks of the scheme?

- A couple of issues are immediately apparent:
- It will disincentivise fertiliser companies from undertaking marketing and brand promotion activities.
- They will now be reduced to contract manufacturers and importers for the government.
- Any company's strength ultimately is its brands and farmer trust built over decades.
- Currently, in case of any bag or batch of fertilisers not meeting the required standards, the blame is put on the company. But now, that may be passed on fully to the government.

DEVELOPMENT

YOUTH EMPLOYMENT DETERIORATED IN INDIA: ILO REPORT

- India experienced severe working-hour and employment losses in 2020 and 2021, and Indian youth employment deteriorated in 2021 compared to 2020, according to the Global Employment Trends for Youth 2022 report released by the International Labour Organisation.

Key Findings

- The pandemic has worsened the numerous labour market challenges facing those aged between 15 and 24 years.
- Youngsters in this age group experienced a much higher percentage loss in employment than adults since early 2020.
- The total global number of unemployed youth is estimated to reach 73 million in 2022, a slight improvement from 2021 (75 million), but still six million above the pre-pandemic level of 2019,”

Finding in India

- In India, the report said surveys conducted by **the Centre for Monitoring the Indian Economy** show that the youth employment participation rate declined by 0.9 percentage points over the first nine months of 2021 relative to its value in 2020,
- It increased by 2 percentage points for adults over the same time period.
- The situation is particularly severe for very young people aged 15-20 years.
- The unemployment rate of young people in the Asia and Pacific region is projected to reach 14.9% in 2022,
- Quality education and training opportunities are required to create decent jobs, especially in green, blue and digital economies.
- In India, the report added that 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.
- Given the deeply unequal access to online resources in developing countries, children from socio-economically disadvantaged families, which are the large majority, had almost no access to 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 report appreciated the MGNREGA and said it has played an important role in providing paid employment, particularly for women, but also in carbon sequestration because of the Act’s focus on natural resources, such as land, water and trees, which provide adaptation benefits.
- India has a very low youth female labour market participation and 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%.
- It highlighted Quality education and training opportunities are required to create decent jobs, especially in green, blue and digital economies, and to set economies on the path towards greater sustainability, inclusiveness and resilience.

SCIENCE AND TECHNOLOGY

CoWIN

- After the success of the Co-WIN platform, the government is looking to repurpose the technology for various healthcare cases.
- CoWIN is currently being repurposed for the universal immunisation program (UIP).
- It will bring the ease of discovery of vaccination centres/camps and reminders for subsequent vaccinations for preventable diseases for mothers.
- The addition of digitally verifiable certificates for routine immunisation would be the first of its kind globally and a great way to start building longitudinal health records for a child right from its birth.
- In addition to immunisation, the platform would also be considered for the use-cases of blood donation and organ donation in the months to come.
- Additional of digitally verifiable certificates for routine immunisation would be the first of its kind globally and a great way to start building longitudinal health records for a child right from its birth.
- In addition to immunisation, the platform would also be considered for the use-cases of blood donation and organ donation in the months to come.

Co-WIN App (Covid Vaccine Intelligence Network)

- It was launched by Ministry of Health and Family Welfare(MoHFW) and the Ministry of Electronics and Information Technology (MeitY).
- It is a digitalised platform to help agencies keep a track of Covid-19 vaccination programme and allow Indian citizens to apply for a Covid-19 vaccine shot.
- Co-WIN, a cloud-based IT platform, is supposed to handle minute details for India's Covid-19 immunisation programme, including registering beneficiaries, allocating vaccination centres, sending text messages with name of their vaccinator to beneficiaries and live monitoring of vials in cold storage.

Functions

- **Monitoring and Tracking:** It enables monitoring the inoculation drive and tracking the listed beneficiaries for vaccination on a real-time basis.
- Thus, it also helps to counter proxy vaccinations.

SPACE LIABILITY CONVENTION OF 1972

- Pieces of space junk from the Chinese Long March rocket crashed down to Earth lighting up the night sky with its fiery re-entry over the Pacific and Indian ocean.

Uncontrolled Re-entry

- When a rocket is launched, its discarded booster stages re-enter the atmosphere soon after lift-off. Then, they harmlessly fall into the ocean as a standard practice.
- However, in this case, a large part of the rocket went into orbit along with the section of the under-construction space station that it was carrying.
- While in orbit, this vehicle kept rubbing against the air at the top of the atmosphere and the resulting friction caused it to start losing altitude.
- This resulted in the Long March 5B rocket's uncontrolled re-entry back to the Earth inevitable.
- Gigantic remnants from China's Long March 5B rockets' core stage are known to make such fiery, out-of-control descents back to earth.
- But China's 5B series does not use a second engine and pushes right into orbit.

Crashes Happened Earlier

- In March 2021, a SpaceX rocket stage made an uncontrolled landing on a farm in the US. But this happened due to a malfunction in the engine tasked to bring it down and not by choice.

Space Liability Convention of 1972

- The Space Liability Convention of 1972 defines responsibility in case a space object causes harm.
- The treaty says that a launching State shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the earth or to aircraft, and liable for damage due to its faults in space.
- The Convention also provides for procedures for the settlement of claims for damages.
- However, there is no law against space junk crashing back to earth.
- In April this year, suspected debris from a Chinese rocket was found in two Maharashtra villages.
- In 1979, re-entry of NASA's 76-ton Skylab had scattered debris over uninhabited parts of Australia, and the space agency was fined \$400 for littering by a local government.
- The only settlement using the Liability Convention was between the erstwhile Soviet Union and Canada over debris of Soviet Cosmos 954 falling in a barren region.
- Canada was paid CAD 3 million in accordance with international law for cleaning up the mess

AFRICAN SWINE FEVER

- A week after about 500 pigs were culled in Kerala's Wayanad district to prevent the spread of African swine fever detected there.
- African swine fever (ASF) is a highly contagious hemorrhagic viral disease of domestic and wild pigs which is responsible for serious economic and production losses.
- It is caused by a large DNA virus of the Asfarviridae family, which also infects ticks of the genus Ornithodoros.

It is transmitted among pigs through:

- Direct contact with infected domestic or wild swines
- Indirect contact through ingestion of contaminated substances or
- Contaminated material such as food waste, feed, or garbage or through biological vectors such as ticks.
- It is not a danger to human health, but it has devastating effects on pig populations and the farming economy.
- There is currently no effective vaccine against ASF.
- The virus is highly resistant in the environment, meaning that it can survive on clothes, boots, wheels, and other materials.
- It can also survive in various pork products, such as ham, sausages or bacon.

HYBRID ELECTRIC VEHICLE (HEV)

- A hybrid electric vehicle (HEV) uses an ICE (a petrol/diesel engine) and one or more electric motors to run. It is powered by the electric motor alone, which uses energy stored in batteries, by the ICE, or both.

What is a hybrid electric vehicle?

- A hybrid electric vehicle (HEV) uses an ICE (a petrol/diesel engine) and one or more electric motors to run.
- It is powered by the electric motor alone, which uses energy stored in batteries, by the ICE, or both.
- The power train of the HEV is more complex than a regular ICE-powered car as it has EV components and a conventional ICE.
- That means a typical HEV will have a low-voltage auxiliary battery, a traction battery pack to store electricity for the electric motor, an electric generator, an AC/DC converter, a power electronics controller, a thermal system to maintain working temperature, an ICE, a fuel tank, a fuel filler, a transmission and an exhaust system.

How do HEV Powertrains work?

- HEV powertrains are designed to power cars in a series, parallel or series-parallel (power split) methods.
- A series HEV uses only the electric motor to drive the wheels, while the ICE powers the generator, which in turn recharges the battery.

- A parallel HEV, based on the driving condition, uses the best power source to power the vehicle. It will alternate between the electric motor and the ICE to keep the car moving.
- A series-parallel HEV offers a combination of both models and allows to split power, wherein power is routed from the ICE alone or from the battery to the electric motor to drive the vehicle.
- Moreover, in all three designs, the battery is charged through regenerative braking technology.

How does regenerative braking work?

- A regenerative braking system (RBS) used in automotive applications has several advantages like better braking efficiency in stop-and-go traffic which enhances fuel economy and also helps in reducing carbon emissions.
- RBS also helps in energy optimisation resulting in minimum energy wastage.
- A kinetic system can recover the energy lost during braking and then use this energy to recharge the high-voltage battery of the vehicle.

What are the different types of HEVs?

- The HEVs can be categorised into micro, mild and full hybrid vehicles, based on the degree of hybridisation.
- A Full HEV will have a larger battery and a more powerful electric motor compared with a mild HEV.
- Mild HEV cannot drive using only the electric motor and uses the battery at traffic lights or in stop-and-go traffic to support the ICE.
- Micro hybrids do not offer electric torque assistance as they lack an electric motor, but they have an idle stop-start system and energy management functions.
- There are plug-in hybrid electric vehicles (PHEVs) that are just like full HEVs, but they can be charged using a wall outlet, as they have an onboard charger and a charging port.
- PHEVs generally use the electric motor until the battery is almost drained, and then automatically switch to the ICE.

What are the main advantages of using hybrid technology?

- Fuel efficiency is a major factor for most people considering buying a car.
- Most vehicles with hybrid technology offer better fuel efficiency, more power, and minimum emissions.
- The design of hybrid vehicles for reduced engine size and car weight as compared to ICE vehicles, translates into increased mileage to favour the demand for these vehicles.
- Moreover, with the increase in total power and torque, HEVs can deliver instant torque and provide high torque even at low speeds.

What are some challenges of hybrid technology?

- In a price-sensitive market like India, one of the major challenges for HEVs is the high vehicle cost.
- Battery, a vital component of an HEV, increases the cost of the vehicle, making it pricier than vehicles powered only by an ICE.
- The RBS also adds to the higher cost of an HEV.

COTTON LEAF CURL DISEASE

- CLCuD is a viral disease which affects the overall growth of the cotton plant and hits its yield.
- Leaves of infected cotton curl both upward and downward.
- The whitefly attacks have led to the spread of cotton leaf curl disease (CLCuD)
- CLCuD is a viral disease that affects the overall growth of the cotton plant and hits its yield. Leaves of infected cotton curl both upward and downward.
- When whiteflies attack the crop, the CLCuD is expected because they transmit the virus further.
- During the survey, cotton farmers informed that they have done two or three sprays to control the white flies.

- Farmers also indicated that they have sown CLCuD-resistant hybrids and even after that the attack of the virus is prevalent.

INDIA'S SATELLITE-BASED NAVIGATION SYSTEM, NAVIC

- India's satellite-based navigation system, NavIC, is as good as GPS of the United States in terms of position accuracy and availability in its service region.
- NavIC can help in navigation on land, air, sea and also in disaster management.
- NavIC satellites are placed at a higher orbit than the GPS of United States.
- NavIC satellites are placed in geostationary orbit (GEO) & geosynchronous orbit (GSO) with an altitude of about 36,000 km; GPS satellites are placed in medium earth orbit (MEO) with an altitude of about 20,000 km.
- NavIC uses dual frequency bands, which improves accuracy of dual frequency receivers by enabling them to correct atmospheric errors through simultaneous use of two frequencies.
- It also helps in better reliability and availability because the signal from either frequency can serve the positioning requirement equally well.
- At the time of inception, an indigenously developed satellite navigation system was conceptualized to cater to requirements of critical national applications, including those of defence and commercial establishments.
- Hence the coverage area was designed to cover Indian Territory and surrounding 1500 km of Indian borders.
- The needs of critical national applications do evolve with time and efforts are continuously made to meet these requirements, including from the point of view of coverage.

Applications of NAVIC

- Terrestrial, aerial and marine navigation
- Disaster management
- Vehicle tracking and fleet management
- Integration with mobile phones
- Precise timing, mapping and geodetic data capture
- Terrestrial navigation aid for hikers and travelers
- Visual and voice navigation for drivers

LUMPY SKIN DISEASE

- Over the last few weeks, nearly 3,000 cattle have died in Rajasthan and Gujarat due to Lumpy Skin Disease.
- A viral infection called the Lumpy Skin Disease (LSD) that has spread across the states.

What is the Lumpy Skin Disease?

- According to a report by GAVI, the Global Alliance for Vaccines and Immunisation,
- The Lumpy Skin Disease (LSD) disease is caused by a virus called the Capripoxvirus and
- It is "an emerging threat to livestock worldwide".
- It is genetically related to the goatpox and sheeppox virus family.
- LSD infects cattle and water buffalo mainly through vectors such as blood-feeding insects.
- Signs of infection include the appearance of circular, firm nodes on the animal's hide or skin that look similar to lumps.
- Infected animals immediately start losing weight and may have fever and lesions in the mouth, along with a reduced milk yield.
- Other symptoms include excessive nasal and salivary secretion.
- Pregnant cows and buffaloes often suffer miscarriage and in some cases, diseased animals can die due to it as well.

SMALL SATELLITE LAUNCH VEHICLE

- The Indian Space Research Organisation (ISRO) said that the satellites onboard its maiden Small Satellite Launch Vehicle “are no longer usable” after the SSLV-D1 placed them in an elliptical orbit instead of a circular one.
- While the three solid fuel-based propulsion stages worked normally, the satellites were injected into a wrong orbit, due to failure of logic to identify a sensor failure.

EOS-02 and AzaadiSAT

- The Earth Observation Satellite EOS-02 and the co-passenger student satellites AzaadiSAT are the major payloads for the SSLV.

Small Satellite Launch Vehicle

- Small Satellite Launch Vehicle is India’s smallest launch vehicle weighing 110 tonnes.
- It can carry payloads weighing up to 500 kg and deploy satellites into a 500 km low earth orbit.

Advantages of SSLV

- Can be assembled within 72 hours by a team of just 5-6 people.
- It costs at least one-tenth of those currently in use.
- It can enable a space launch from India every week.
- It caters specifically to the small and micro satellites that constitute over 90% of all satellites being launched these days.

Significance

- The SSLV is intended to cater to a market for the launch of small satellites into low earth orbits with a quick turn-around time.
- Suited for launching multiple microsattellites & supports multiple orbital drop-offs.
- Shift the burden of commercial launches from PSLV
- The SSLV is likely to cost a fourth of the current PSLV.

AGM-88 HARM

- The acronym 'HARM' in the AGM-88 HARM air-to-surface missile stands for High-Speed Anti-Radiation Missile.
- It is a tactical weapon fired from fighter aircraft, and has the capability to detect and home into radiation emitted by hostile radar stations that have surface-to-air detection capabilities.
- The missile was originally developed by the Dallas-headquartered Texas Instruments, but is now produced by the major American defence contractor Raytheon Corporation.
- An advanced version of the weapon is manufactured by Dulles, Virginia-based Northrop Grumman.
- The AGM-88 HARM is 14 metres in length, but only 10 inches in diameter.
- It weighs around 360 kg and carries a fragmentation type warhead that is optimised for radar targets.
- It also has an anti-radar homing seeker broadband RF antenna and receiver, and a solid state digital processor.
- The missile has a range of more than 100 km.
- United States has supplied some “anti-radiation missiles” to Ukraine, which could be fired from some Ukrainian Air Force aircraft. The statement has put meat on Russian allegations that an American anti-radar missile, AGM-88 HARM, which is part of NATO’s inventory.

ISRO’s SSLV

- ISRO got ready for the first developmental flight of the SSLV-D1/EOS-2 mission. The launch took place from the Satish Dhawan Space Centre at Sriharikota. The Small Satellite Launch Vehicle (SSLV) D1/EOS-2 mission, was carrying two satellites — the Earth Observation Satellite-2 (EOS-2) which weighed about 135 kg and AzadiSAT which weighed about eight kg. The mission failed to place the satellites in their required orbits, and the satellites, as they were already detached from the launch vehicle, were lost.

The purpose of the SSLV-D1/EOS-2 mission

- The purpose of this mission was to place the two satellites in circular low-Earth orbits at a height of about 350 km above the Equator.
- The larger one, the EOS-2 which was designed and developed by ISRO, offered advanced optical remote sensing operations.
- It would have operated in the infrared region and could have served many purposes, from imaging for climate studies to simply keeping an eye on Earth.
- AzadiSAT, on the other hand, was a collective of 75 tiny payloads weighing around 50 grams each, which were integrated by students.
- It carried tiny experiments which would have measured the ionising radiation in its orbit and also a transponder which worked in the ham radio frequency to enable amateur operators to access it.

Why were the satellites lost?

- If the closest distance to the Earth is only 76 km, as it happened this time, there is an atmospheric drag experienced by the object at that height.
- Thereafter, unless adequate thrust is applied to overcome the drag, it will lose height and fall towards the Earth because of gravity and may eventually burn up due to friction.

What went wrong with the launch?

- Today rocket technology has progressed to such a stage that even if the course of the rocket is altering from its planned course, there will be sensors that feed back this information to a system.
- This will immediately trigger a course correction which will restore the trajectory of the rocket.
- There are many sensors as well as a built-in redundancy. That is, even if one or two sensors fail, there will be others that take over and effect the course correction.
- In the present case, the announcement was that “failure of a logic to identify a sensor failure and go for a salvage action caused the deviation.”
- This could possibly imply that either redundancy was not built in, which is highly unlikely, or perhaps that it was built in but did not kick off due to a technical glitch.

Why do we need to develop an SSLV when we have successfully used PSLV and GSLV?

- The PSLV (Polar Satellite Launch Vehicle) and GSLV (Geosynchronous Satellite Launch Vehicle) are quite powerful and can carry huge loads.
- To place an Earth Orbiting Satellite in a low Earth orbit, one does not need such power horses.
- The SSLV can easily carry small-to-medium loads from 10 kg to 500 kg. It is less expensive.
- The three stages being powered by solid fuel is another advantage.
- Solid fuel is easier to handle, whereas handling the liquid propellants used in the PSLV and GSLV is more complex

What is the difference between circular and elliptical orbits?

- Mostly objects such as satellites and spacecrafts are put in elliptical orbits only temporarily.
- They are then either pushed up to circular orbits at a greater height or the acceleration is increased until the trajectory changes from an ellipse to a hyperbola and the spacecraft escapes the gravity of the Earth in order to move further into space — for example, to the Moon or Mars or further away.
- Satellites that orbit the Earth are mostly placed in circular orbits.
- One reason is that if the satellite is used for imaging the Earth, it is easier if it has a fixed distance from the Earth.
- If the distance keeps changing as in an elliptical orbit, keeping the cameras focussed can become complicated.

LANGYA, A NEW ZONOTIC VIRUS

- At least 35 people have been found infected with Langya virus in Shandong and Henan provinces of China.

- **Langya Henipavirus:** A new zoonotic virus has been discovered in the country's two eastern provinces with 35 infections identified so far.
- This new type of Henipavirus is also being called Langya Henipavirus or the LayV.
- Henipaviruses are classified as biosafety level 4 (BSL4) pathogens.
- They can cause severe illness in animals and humans, and as of now there are no licensed drugs or vaccines meant for humans.

What is Langya virus?

- The newly discovered virus is a "phylogenetically distinct Henipavirus".
- A Zoonotic Henipavirus in Febrile Patients in China published in The New England Journal of Medicine.
- The types of Henipaviruses that had been identified prior to this included Hendra, Nipah, Cedar, Mojiang and the Ghanaian bat virus.
- According to the US CDC, the Cedar virus, Ghanaian bat virus, and Mojiang virus are not known to cause human disease.
- But Hendra and Nipah infect humans and can cause fatal illness.
- Langya, meanwhile, is known to cause fever.

How was Langya virus discovered?

- Langya was discovered in eastern China during surveillance testing of patients who had fever along with a recent history of animal exposure.
- It was identified and isolated from the throat swab sample of one of those patients.
- According to the NEJM study, 35 patients with LayV infection were found in Shandong and Henan provinces, out of which 26 were only infected with this new virus and no other pathogen.

What are the symptoms of Langya virus?

- While all 26 had fever, 54% reported fatigue, 50% had cough, 38% complained of nausea.
- Also, 35% of the total 26, complained of headache and vomiting.
- The study found that 35% had impaired liver function, while 8% had their kidney function impacted.
- The patients were accompanied by abnormalities of "thrombocytopenia (35%), leukopenia (54%), impaired liver (35%) and kidney (8%) function", the study noted.
- Thrombocytopenia is low platelet count, while leukopenia means a fall in the white blood cell count, in turn reducing the body's disease-fighting capability.

Where has Langya virus come from?

- In all likelihood, the new virus has jumped from an animal to humans.
- The LayV virus RNA has been predominantly found in shrews, which may be its natural hosts.
- The study zeroed in on shrews after conducting a serosurvey of domestic and wild animals.
- Among domestic animals, seropositivity was detected in goats and dogs.

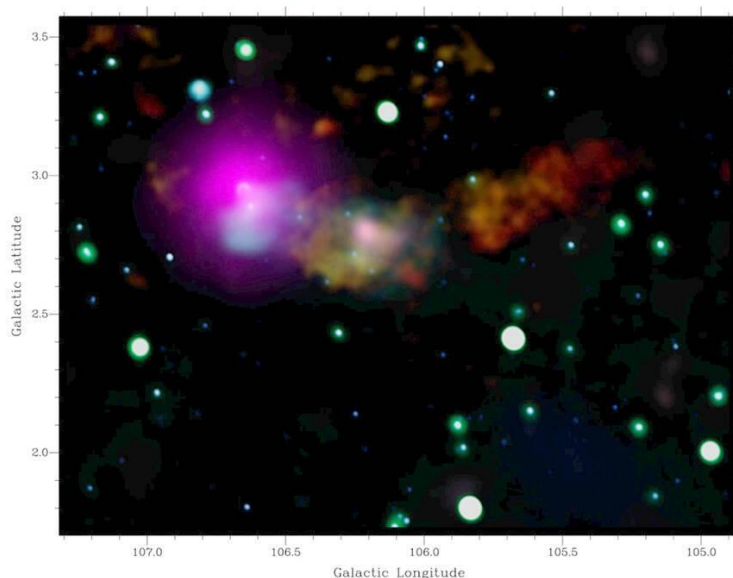
What about human-to-human transmission?

- There are no clear answers yet.
- The authors of the study have underlined that the sample size of their investigation is too small to determine human-to-human transmission.
- However, they point out that among the 35 patients infected by LayV, there was "no close contact or common exposure history", which suggests that the "infection in the human population may be sporadic".

PeVATRONS

- A study using 12 years of data from NASA's Fermi telescope helped scientists understand PeVatrons, or the source of a kind of extremely high-energy cosmic particles.
- NASA's Fermi Gamma-ray Space Telescope, scientists are finally getting close to accurately identifying PeVatrons, the source of some of the highest energy particles that whip across our galaxy.

- Streams of particles called cosmic rays travel at breakneck speeds around our galaxy and they also strike our planet's atmosphere.
- They typically consist of protons but sometimes also include atomic nuclei and electrons.
- They all carry an electric charge, this means that their paths deviate and scramble as they go through our galaxy's magnetic field.
- This means that we can no longer tell which direction they originally came from, effectively masking their birthplace.
- But when the particles that are part of cosmic rays collide with the gas near supernova remnants, they produce gamma rays; some of the highest-energy forms of radiation that exist.
- "Theorists think the highest-energy cosmic ray protons in the Milky Way reach a million billion electron volts, or PeV energies. The precise nature of their sources, which we call PeVatrons, has been difficult to pin down,"
- These particles get trapped by the chaotic magnetic fields near supernova remnants.
- They pass through the supernova's shock wave multiple times and each time they do, they gain speed and energy.
- Eventually, they can no longer be held by the supernova remnant and will careen off into deep space.
- These particles are boosted to 10 times the energy that the **Large Hadron Collider**, the most powerful man-made particle accelerator, can generate.



PUNJAB GOVT BANS 10 INSECTICIDES FOR 60 DAYS

- The Punjab government on Friday banned the use of 10 insecticides, which are mostly used in aromatic paddy (Basmati), for 60 days from August 12 to October 12.
- The insecticides include
 - Acephate,
 - Buprofezin,
 - Chloropyrifos,
 - Methamidophos,
 - Propiconazole,
 - Thiamethoxam,
 - Profenofos,
 - Isoprothiolane,
 - Carbendazim,
 - Tricyclazole.

- Sale, stock, distribution and use of insecticides mentioned are banned for 60 days in the interest of Basmati rice growers because of several reasons.
- One, there is a risk of higher pesticide residues than the maximum residue level (MRL) fixed by the competent authority in the Basmati rice.
- Secondly, the Punjab Agriculture University (PAU), Ludhiana, has recommended alternative Agro chemicals to control pests in Basmati rice in Punjab.
- Third, the Punjab Rice Millers and exporters Association has also reported that many samples got tested by them contain the residue value of these pesticides is much higher than the MRL values in Basmati rice.
- The association requested a ban on these agrochemicals to save the Basmati produce and to ensure hassle-free export of Basmati rice to other countries.
- Such time-to-time bans won't stop dealers from storing or farmers from using such insecticide in rice crop.
- Most of these insecticides are used in wheat, vegetables, fruits and sugarcane and so these are easily available with farmers.
- Such chemicals should be banned permanently in the state as several foreign consignments of basmati rice are rejected every month because of high MRL.

NEW DEFENCE SYSTEMS HANDED OVER TO ARMY

- A day after a made-in-India howitzer gun, the ATAGS, Defence Minister handed over several new defence systems, including the F-INSAS, the Nipun mines, the Landing Craft Assault (LCA), to the Army.

What is the F-INSAS System?

- **F-INSAS stands for Future Infantry Soldier As A System**, a programme for infantry modernisation 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.
- The full-gear of the F-INSAS system includes an AK-203 assault rifle. It has a range of 300 metre, and is being made at Korwa near Amethi in a Russia-India joint venture.
- The F-INSAS includes a multi-mode hand grenade, which can be used in defensive and offensive modes.
- In defensive mode, the grenades are to be hurled when the thrower is in a shelter or has a cover, while the target is in the open and can be harmed by fragmentation.
- In the offensive mode, the grenades do not fragment and the adversary is harmed by the blast or is stunned. The weapon kit also has a multi-purpose knife for close quarters combat.
- Apart from this, the F-INSAS provides soldiers with ballistic helmets and ballistic goggles for protection against small projectiles and fragments, along with a bullet-proof vest.
- The helmet and the bullet-proof jacket are capable of protecting the soldier against 9 mm bullets and ammunition fired from AK-47 rifles.
- The F-INSAS also comes with hands-free, secured advanced communications set for real-time exchange of information with the command post and fellow soldiers for enhanced situational awareness.

What is the F-INSAS modelled on?

- Conceived in the 2000s, F-INSAS is one among many soldier modernisation programmes across the world.
- The US has Land Warrior, while the UK has FIST (Future Integrated Soldier Technology).
- According to estimates, over 20 armies around the world are following such programmes.
- The DRDO had conceptualised the F-INSAS (not to be confused with INSAS or Indian Small Arms System) in line with the targets of the Army's Infantry Soldier Modernisation Programme with an aim to optimise the soldier's performance across the full spectrum and duration of a military operation.

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 defence against infiltrators and enemy infantry.
- They have been developed with the efforts of Armament Research and Development Establishment, a Pune-based DRDO facility, and Indian industry.
- Anti-personnel mines are meant to be used against humans as against anti-tank mines that are aimed at heavy vehicles.
- They are smaller in size and can be deployed in large numbers.

What is the 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.
- Similar vessels are already in operation in the Indian Navy.

Some other Defence Systems

- Other than these systems and equipment, the Defence Minister also formally handed over to the Army a thermal imaging sight for T-90 tanks; hand held thermal imager; and frequency-hopping radio relay for tactical communication across much longer ranges.
- Further, Downlink Equipment with Recording Facility to help helicopters in surveillance missions was also handed over.
- Using this system, reconnaissance data is recorded and can be accessed only when the helicopter returns to the base.
- Some other defence systems included, Infantry Protected Mobility Vehicles; Quick Reaction Fighting Vehicles and Mini Remotely Piloted Aerial System surveillance, detection and reconnaissance at the infantry battalion and mechanised units level.

BIOSENTINEL

- NASA's BioSentinel will carry microorganisms to deep space to help scientists better understand the effects of deep space radiation on biological lifeforms.
- NASA's Artemis I mission is an uncrewed mission, there will be some living passengers on board. BioSentinel, a shoebox-sized CubeSat, will carry microorganisms in the form of yeast into deep space so that scientists can fill critical gaps in the knowledge about the health risks of radiation in deep space.
- The primary objective of BioSentinel is to monitor the vital signs of yeast to see how the microorganism fare when exposed to the radiation of deep space.
- Yeast cells have biological mechanisms that are similar to human cells, including DNA damage and repair.
- Due to this, scrutinising yeast in space will help us better understand the risks of space radiation to humans as the space agency plans missions to the Moon and beyond.
- For this, BioSentinel will study yeast cell growth and metabolic activity after exposure to a high-radiation environment.
- BioSentinel is just one of the Artemis I mission's ten secondary payloads that will hitch a ride to deep space.
- All of these satellites are mounted in the Orion stage adapter on the Space Launch System (SLS) rocket.
- They will be ejected into space to carry out science and technology investigations in deep space.
- BioSentinel is the only satellite to carry a life science experiment.
- A key component of BioSentinel's mission is a novel biosensor.
- NASA refers to it as a "miniature biotechnology laboratory" that is designed to measure how living yeast cells respond to long-term space radiation exposure.
- It has a set of microfluidic cars, which allows the controlled flow of extremely small volumes of liquids, to provide a habitat for yeast, along with a way for scientists to observe them in real-time.
- Alongside the biosensor, the BioSentinel will carry a radiation detector instrument which characterises and measures radiation.

- There is an identical set of specimens and instruments at NASA's Ames Research Centre in Silicon Valley. The sets of data from space and the research centre will be compared to measure the yeasts' response to different gravity and radiation environments.

NATIONAL AUTOMATED FINGERPRINT IDENTIFICATION SYSTEM

- Union Home Minister inaugurated the National Automated Fingerprint Identification System (NAFIS).
- According to the Ministry of Home Affairs, NAFIS, which was developed by the National Crime Records Bureau (NCRB), would help in the quick and easy disposal of cases with the help of a centralised fingerprint database.
- In April this year, Madhya Pradesh became the first state in the country to identify a deceased person through NAFIS.

What is NAFIS?

- Conceptualized and managed by the NCRB at the **Central Fingerprint Bureau (CFPB)** in New Delhi.
- **The National Automated Fingerprints Identification System (NAFIS)** project is a country-wide searchable database of crime- and criminal-related fingerprints.
- The web-based application functions as a central information repository by consolidating fingerprint data from all states and Union Territories.
- According to a 2020 report by the NCRB, it enables law enforcement agencies to upload, trace, and retrieve data from the database in real time on a 24x7 basis.
- NAFIS assigns a unique 10-digit **National Fingerprint Number (NFN)** to each person arrested for a crime. This unique ID will be used for the person's lifetime, and different crimes registered under different FIRs will be linked to the same NFN. The 2020 report states that the ID's first two digits will be that of the state code in which the person arrested for a crime is registered, followed by a sequence number.

Since when has India relied on fingerprinting as a crime-fighting tool?

- A system of fingerprinting identification first emerged in colonial India, where it was tested before it spread to Europe and beyond.
- At first, it was used by British colonial officials for administrative rather than criminal purposes.
- William Herschel, the chief administrator of the Hooghly district of Bengal, from the late-middle 1800s onwards, used fingerprinting to reduce fraud and forgeries, in order to ensure that the correct person was receiving government pensions, signing land transfer deeds, and mortgage bonds.
- The growing use of fingerprinting was deeply tied to how 19th century British officials understood crime in India.
- Entire social groups were categorized as racially distinct "criminal tribes" and were deemed to be "professional" criminals from time immemorial.
- However, the trouble that they faced was in identifying these groups from the ordinary criminals, something that the British found particularly difficult in such a diverse land.
- Anthropometry, the measurement of physical features of the body, was used by officials in India, but was soon replaced with a system of fingerprints, which were seen to be more accurate as it was believed that no two people can have identical sets of patterns, wrote the historian Simon A Cole in his book 'Suspect Identities: A History of Fingerprinting and Criminal Identification'.

How did the use of fingerprinting develop in crime fighting in India?

- The uniqueness of every individual's fingerprints was first proposed in Europe by the German anatomist Johann Mayer in 1788, and was confirmed through detailed studies by the Scottish doctor Henry Faulds around the same time that Herschel had begun to implement fingerprinting as a means of identification in Bengal.
- Tracing a single set of fingerprints from a large collection of fingerprint cards required a workable system of classification.

- While similar attempts were made in England and beyond, the Bengal Police were able to create fingerprint records which replaced the use of anthropometric measurements by 1897, when the world's first Fingerprint Bureau was established in Calcutta, four years before a similar decision was taken in England.
- The Inspector General of the Bengal Police, Edward Henry, recruited two Indian sub-inspectors, Aziz-ul-Haq and H C Bose, for this task.
- It was Haq who first devised a system of primary classification and a system for indexing names in court conviction registers.
- Henry, however, declined to acknowledge the crucial contributions of his Indian subordinates when he presented the so-called "Henry System of Classification" in England in 1901, and established a fingerprint bureau in Scotland Yard.
- It was only in 1925 that Henry admitted the invaluable efforts of Haq and Bose to the system of classification, for which the colonial state bestowed on them the titles of Khan Bahadur and Rai Bahadur respectively.

PER AND POLYFLUOROALKYL SUBSTANCES," (PFAs)

- 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.

What are PFAs?

- 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.
- PFAs can migrate to the soil, water and air during their production and use.
- Since most PFAs do not break down, they remain in the environment for long periods of time.
- Some of these PFAs can build up in people and animals if they are repeatedly exposed to the chemicals.

What harm do PFAs cause?

- The United States Environmental Protection Agency (EPA) lists a variety of health risks that are attributed to PFA exposure, including decreased fertility, developmental effects in children, interference with body hormones, increased cholesterol levels and increased risk of some cancers.
- Recent research has also revealed that long-term low-level exposure to certain PFAs can make it difficult for humans to build antibodies after being vaccinated against various diseases.

How can these chemicals be removed from rainwater?

- While there is no known method that can extract and remove PFAs from the atmosphere itself, there are many effective, albeit expensive, methods to remove them from rainwater that has been collected through various rainwater harvesting methods.
- One way to do this would be to use a filtration system with activated carbon.
- The activated carbon will need to be removed and replaced regularly.
- Also, the old contaminated material must be destroyed.

TOMATO FLU

- A new infection dubbed tomato flu, or tomato fever, has been detected in India mostly among children younger than five, according to a report in the Lancet Respiratory Journal.
- The "non-life-threatening" virus was first identified in Kollam district of Kerala recently.

What is Tomato Flu?

- Tomato flue/fever is a rare contagious disease of viral nature in humans whose origins are not yet known.
- The 'tomato flu' is caused by Coxsackie virus A 16. It belongs to Enterovirus family.
- It gets its name from the tomato-shaped red rashes that it causes on the body of infected individuals.
- The flu is said to affect children below five years of age.
- Young children are also prone to this infection through the use of nappies, touching unclean surfaces, and putting things directly into the mouth.

Primary symptoms

- The primary symptoms of tomato flu are similar to those of chikungunya, which include high fever, rashes, and intense pain in the joints.
- As with other viral infections, further symptoms include fatigue, nausea, vomiting, diarrhoea, dehydration, swelling of joints, body aches, and common influenza-like symptoms, which are similar to those manifested in dengue.

Treatment

- As tomato flu is similar to chikungunya and dengue as well as hand, foot, and mouth disease.
- The treatment is also similar — isolation, rest, plenty of fluids, and hot water sponge for the relief of irritation and rashes.
- Supportive therapy of paracetamol for fever and body ache and other symptomatic treatments may be required.

Preventive Measures

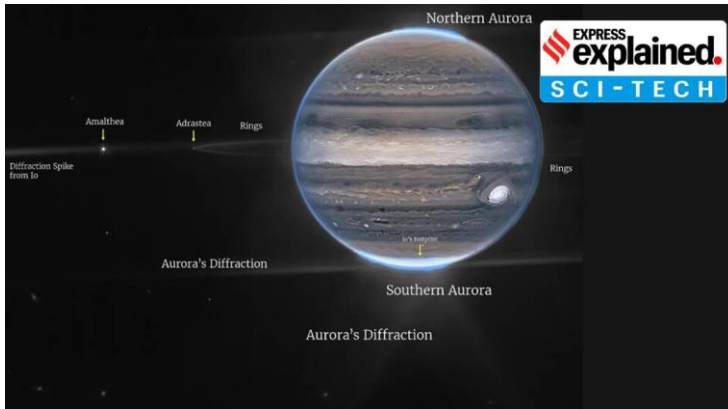
- Similar to other types of influenza, tomato flu is very contagious and children are at an increased risk of exposure as viral infections are common in this age group and the spread is likely to be through close contact
- Given the similarities to hand, foot, and mouth disease, if the outbreak of tomato flu in children is not controlled and prevented, the transmission might lead to serious consequences by spreading in adults as well.
- Utensils, clothes, and other items used by the infected persons must be sanitized to prevent the flu from spreading.
- Fluid intake should be increased to counter dehydration.
- Proper screening by the health authorities.

JUPITER

- The James Webb Space Telescope, NASA's latest and most powerful telescope, has captured new images of our solar system's largest planet, Jupiter, presenting it in a never before seen light.
- The photographs published have captured a new view of the planet, presenting in detail its massive storms, colourful auroras, faint rings and two small moons — Amalthea and Adrastea.

Unprecedented View

- While most of us are familiar with the yellow and reddish-brown gas giant, the telescope's Near-Infrared Camera, with its specialized infrared filters, has shown Jupiter encompassed in blue, green, white, yellow and orange hues.
- Since infrared light is not visible to the human eye, the images were artificially coloured to match those on the visible spectrum, so that the planet's distinctive features could stand out.
- Jupiter's famous Great Red Spot, a storm so big that it could swallow Earth, appeared bright white in the image, since it was reflecting a lot of sunlight.
- The brightness here indicates high altitude so the Great Red Spot has high-altitude hazes, as does the equatorial region.
- The numerous bright white 'spots' and 'streaks' are likely very high-altitude cloud tops of condensed convective storms.



The Webb Telescope

- NASA's \$10 billion James Webb Telescope was developed with the assistance of the European Space Agency and the Canadian Space Agency.
- It was launched to space on December 25, 2021 and is currently observing from Lagrange point 2, approximately 1.5 million km beyond Earth's orbit around the Sun.

SPECTROGRAPHIC INVESTIGATION OF NEBULAR GAS (SING)

- Tension between India and China since May 2020 is worrying Indian astrophysicists involved in an ambitious project to install an India-made spectroscope aboard the developing Chinese space station, Tiangong.
- Scientists at the Indian Institute of Astrophysics (IIA), Bengaluru, were among nine groups selected from 42 applicants in 2019 as part of a United Nations-led initiative that invites research teams from all over the world to compete for an opportunity to design payloads that will be shuttled to Tiangong aboard rockets of the Chinese Manned Space Agency.
- The project, called Spectrographic Investigation of Nebular Gas (SING), also involves collaboration with the Institute of Astronomy, Russian Academy of Sciences, and has been designed and developed by research students at the Indian Institute of Astrophysics.
- The SING project would be the first space-collaboration involving India and China, and primarily deals with sending and positioning a spectrograph, an instrument that splits light into constituent frequencies and wavelengths, to study ultraviolet radiation.
- This will help analyse the make-up and sources of interstellar gas in the region that swept by the space station as it orbits around the earth.
- The T-shaped Tiangong space station, when complete, is expected to be around 20% as massive as the International Space Station, or about 460 tonnes on Earth.
- The space station consists of three modules, two of which have already been launched in April 2021 and July this year, respectively. The third is expected to be launched this October.
- It will be only the second such station after the International Space Station in orbit.
- India and China have been collaborators in the past on research projects such as the **Giant Metre Wave Radio Telescope**, a Pune-based observatory that's employed by astrophysicists across the world to study radiation at metre-scale resolutions to observe and analyse stars and galaxies.

VERTICAL LAUNCH SHORT RANGE SURFACE TO AIR MISSILE

- The indigenously-developed ship-borne weapon system, Vertical Launch Short Range Surface to Air Missile (VL-SRSAM), was successfully flight tested by the Defence Research and Development Organisation (DRDO) and Indian Navy off the Chandipur coast in Odisha
- The VL-SRSAM system has been designed to strike high-speed airborne targets at the range of 40 to 50 km and at an altitude of around 15 km.
- Its design is based on the Astra missile, which is a Beyond Visual Range Air to Air missile.
- It is a quick reaction surface-to-air-missile indigenously designed and developed by DRDO for the Indian Navy, is meant for neutralizing various aerial threats at close ranges, including sea-skimming targets.

- Sea skimming is a technique many anti-ship missiles and some fighter or strike aircraft use to avoid radar and infrared detection.

Two key features of the VL-SRSAM are cruciform wings and thrust vectoring.

- The cruciform wings are four small wings arranged like a cross on four sides and give the projectile a stable aerodynamic posture.
- The thrust vectoring is an ability to change the direction of the thrust from its engine control the angular velocity and the attitude of the missile.
- VL-SRSAM is a canisterised system, which means it is stored and operated from specially designed compartments.
- In the canister, the inside environment is controlled thus making its transport and storage easier and improving the shelf life of weapons.

FUEL CELL ELECTRIC VEHICLE (FCEV)

- A hydrogen fuel cell bus developed by KPIT-CSIR in Pune was unveiled by Union minister of state for Science and Technology, recently.
- The hydrogen fuel cell uses hydrogen and air to generate electricity, producing only heat and water in the process.
- A hydrogen fuel cell bus is a Fuel Cell Electric Vehicle (FCEV) that produces electricity by combining hydrogen and oxygen atoms.
- The two gases react across an electrochemical cell similar to a conventional battery cell to produce electricity, water and small amounts of heat.
- This electricity is then used by electric motors to propel the vehicle forward.

What is a Hydrogen Fuel Cell?

- 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. Just like conventional cells, a fuel cell consists of an anode (negative electrode) and cathode (positive electrode) sandwiched around an electrolyte.
- Hydrogen is fed to the anode and air is fed to the cathode. At the anode, a catalyst separates the hydrogen molecules into protons and electrons and both subatomic particles take different paths to the cathode.
- The electrons go through an external circuit, creating a flow of electricity that can be used to power electric motors. The protons, on the other hand, move to the cathode through the electrolyte. Once there, they unite with oxygen and electrons to produce water and heat.

What is the advantage of a hydrogen FCEV?

- The primary advantage of hydrogen fuel cell electric vehicles (FCEV) is that they produce no tailpipe emissions. They only emit water vapour and warm air.
- Another advantage is that they are more efficient than internal combustion engine vehicles.
- Hydrogen fuel cell electric vehicles have another advantage when it comes to refuelling time, which makes them more practical than battery-powered electric vehicles for public transportation purposes. Even with the fastest charging technologies, it could take hours to charge a battery-powered electric bus.
- Meanwhile, hydrogen can be refilled in a fuel cell vehicle in a matter of minutes, nearly as fast as an internal combustion engine can be refilled with fossil fuels.

What are the challenges with FCEVs?

- FCEVs do not generate gases that contribute to global warming, the process of making hydrogen needs energy often from fossil fuel sources. That has raised questions over hydrogen's green credentials.
- There are questions of safety hydrogen is more explosive than petrol.
- Using a battery-powered electric vehicle doesn't mean that the vehicles produce no emissions, but rather, that they produce no tailpipe emissions.

- Hydrogen fuel tanks in FCEVs such as the Mirai are made from highly durable carbon fibre, whose strength is assessed in crash tests, and trials where bullets are fired at it, which makes vehicles, more expensive, and fuel dispensing pumps are scarce.

How environment-friendly are hydrogen fuel cell vehicles?

- Using a battery-powered electric vehicle doesn't mean that the vehicles produce no emissions, but rather, that they produce no tailpipe emissions.
- Since a majority of the electricity in the country comes from fossil fuels, and the biggest source of hydrogen in the world currently is also fossil fuels, these vehicles do cause a large number of emissions with their usage.
- However, just like we are moving towards renewable sources of electricity, we could also move towards renewable methods of generating hydrogen in the future.
- So, even if these vehicles do contribute to emissions right now, the fuel that they need could be produced using renewable methods such as solar and wind energy.

AFRICAN SWINE FEVER

- The Punjab government declared two villages, one each in Patiala and Fatehgarh Sahib, as African swine fever (ASF) affected zones and notified these areas as 'infected zones' for the prevention of the spread of fever.

About African Swine Fever (ASF)

- Cause: Large DNA virus of the Asfarviridae family. Only virus with a double-stranded DNA genome known to be transmitted by arthropods.
- Affects domestic & wild pigs.
- Symptoms: Includes weight loss, intermittent fever, respiratory signs, chronic skin ulcers & arthritis. Acute forms are characterised by anorexia, loss of appetite & haemorrhages in the skin.
- Transmission: Through natural hosts (warhogs, bushpigs & ticks) acting as vectors & by direct/indirect contact with infected pigs, their faeces & body fluids.
- Vaccination: No approved vaccine yet.
- Geographical Distribution: First detected in Kenya in 1909 & currently found in Asia, Europe & Africa.
- Public Health Risk: Not risky for humans.

Preventive Steps

- For the prevention of the disease in these areas, restrictions under the provisions of The Prevention and Control of Infectious and Contagious Diseases in Animals Act, 2009 and the National Action Plan for Control, Containment and Eradication of African Swine Fever (June 2020) have been imposed.
- Application of classic sanitary measures, early detection & humane killing of animals.
- Thorough disinfection, stricter biosecurity norms & restricted supply from affected areas.

INS VIKRANT

- The nation's first Indigenous Aircraft Carrier (IAC-1) will be commissioned. The commissioning of the warship, which will be christened 'Vikrant', will mark a "historical milestone of realisation of Nation's commitment towards AatmaNirbharta" (self-reliance).

INS Vikrant

- Vikrant is the largest warship to have ever been built in India, and the first indigenously designed and built aircraft carrier for the Indian Navy. It puts India in an elite club of nations that have the capability to design and build these giant, powerful warships.
- The INS Vikrant – the 44,000-tonne indigenous aircraft carrier (IAC) – is the first to be designed and constructed in India.

- After its induction, the warship will be a key component of the Indian Navy's push to establish itself as a "blue water" force, one with the ability to project its power on distant seas.

Features

- The Vikrant stretches 262 metres in length, exceeding that of two football fields and is 62 metre wide. Around 20 aircraft can be parked in the hangar.
- It has a top speed of around 28 knots (more than 50 kmph) and a cruising speed of 18 knots with an endurance of about 7,500 nautical miles.
- Over 76 per cent of the material and equipment on board the carrier is indigenous, including 21,500 tonnes of special grade steel developed indigenously and used in Indian naval ships for the first time.
- This is the first time in the country that a ship of the size of an aircraft carrier is completely modelled in 3D and production drawings extracted from the 3D model.
- The Made-in-India warship is a feather in the country's cap, as only five or six nations have the capacity of building an aircraft carrier.
- The ship will be capable of operating 30 aircraft including
 - MiG-29K fighter jets
 - Kamov-31 Air Early Warning Helicopters
 - MH-60R Seahawk multi-role helicopters
 - Advanced Light Helicopters (ALH)

Why is it named Vikrant?

- INS Vikrant was India's first aircraft carrier, which it acquired from the United Kingdom in 1961.
- It played a key role in the 1971 war with Pakistan which led to the creation of Bangladesh. It was decommissioned in 1997.
- Now India's first homemade aircraft carrier will carry the name of her illustrious predecessor.

Other Aircraft Carriers

- The Indian Navy has only one operational aircraft carrier at present – the INS Vikramaditya.
- The country's two earlier carriers, INS Vikrant and INS Viraat, were originally the British-built HMS Hercules and HMS Hermes before being commissioned into the Navy in 1961 and 1987 respectively.

SOUTHERN RICE BLACK-STREAKED DWARF VIRUS (SRBSDV)

- A mystery disease hit the paddy crop causing "dwarfing" of the plants in Punjab and Haryana, the scientists at Punjab Agricultural University (PAU) decoded the mystery blaming it on 'Southern Rice Black-Streaked Dwarf Virus' (SRBSDV), named after Southern China where it was first reported in 2001.
- This is the first time that SRBSDV has been found in Punjab,
- The incidence of stunting was more pronounced in early sown paddy crops, irrespective of the variety.
- As per the scientific reports, the SRBSDV is transmitted by white-backed plant hopper (WBPH) in a persistent circulative and propagative manner.
- In addition to rice, SRBSDV also infects different weed species as nymphs of WBPH can transmit the virus more efficiently as compared to adults.
- Long-distance transmission of this virus may occur through WBPH migrating with the typhoons and strong convection winds.
- There was no corrective measure for the viral disease, farmers should regularly monitor the crop for the presence of WBPH.
- A few plants should be slightly tilted and tapped 2-3 times at the base at weekly intervals.

Background

- Many farmers in Punjab and Haryana have been complaining about stunted rice plants for the past 20-25 days.
- The height of the stunted plants showed a reduction from 1/2 to 1/3rd of the normal plants.
- These plants had shallow roots and could be easily uprooted.

ZORAWAR TANK

- Indian Army is prioritising the procurement of the indigenous Indian light tank named 'Zorawar', for deployment in the mountains.
- It will have equal firepower as the present tank, including missile firing.
- The power to weight ratio will make it very agile. Realising the protracted threat along the northern borders with China and the induction of the enemy's technologically "state-of-art" tanks, the Indian Army is pushing for "Project Zorawar".
- Zorawar will be the name of the Light Tanks which have been envisaged to be manufactured indigenously.
- Zorawar will be designed to operate from High Altitude Area, the marginal terrain to the Island territories and will be highly transportable for rapid deployment to meet any operational situation.
- Zorawar will have niche technologies to include Artificial Intelligence, Drone integration, Active Protection System, High Degree of Situational Awareness.
- Zorawar Singh Kahluria was the famed military general of Dogra King Gulab Singh and was adept at mountain warfare. New tanks will be named after him.
- Missile-firing capability, counter-drone apparatus, warning system and a power-to-weight ratio will make the tanks "very agile".
- The light tanks will help the Army overcome the limitations of medium battle tanks and equip the force for all contingencies in high altitude area, marginal terrain and island territories besides its utilisation in the plains, semi-deserts and deserts.

In addition to the light tank, the Army will induct niche technologies such as loitering munitions, anti-drone capabilities and next generation Intelligence, Surveillance and Reconnaissance (ISR) capabilities

5G SMALL CELLS

- To expedite the roll out of 5G, telecom operators in the country will leverage street furniture such as poles, advertisement hoardings and bus shelters for deploying low power base stations called 'Small Cells' that will help bring the network closer to the consumers.
- Small Cells are needed for deploying 5G as opposed to earlier generations such as 4G, because of the frequency. The higher the frequency, the lower the wavelength, which means that the distance they travel is less.
- The Telecom Regulatory Authority of India (TRAI) has also issued a consultation paper on the Use of street furniture for small cell and aerial fiber deployment, wherein it states that Small Cells will play a critical role in success of 5G as these are needed to exploit features of 5G such as low latency (minimal delay times), ultra-high speeds, and massive connection densities.
- Small Cells are low-powered radio access nodes or base stations that have a coverage range from a few metres to a few hundred metres.
- They are portable, easy to deploy and help provide localised coverage.
- As per the TRAI paper, Small Cells provide coverage for very short distances and therefore they are installed in a large number even more than 200 per sq. km for good geographical coverage to provide highly reliable and high-capacity broadband.

Small Cells

- Small cell is an umbrella term used to describe a miniature radio access point (AP) or wireless network base station with a low radio frequency (RF) power output, footprint, and range.
- These are low-powered radio access nodes or base stations that have a coverage range from a few metres to a few hundred metres.
- They are portable, easy to deploy and help provide localised coverage.
- Small Cells provide coverage for very short distances and therefore they are installed in a large number for good geographical coverage to provide highly reliable and high-capacity broadband.
- Considering the present situation, the fifth-generation (5G) small cell is poised to usher in an era of innovation on a massive scale, ensuring significantly improved signal penetration and superior coverage.

ENVIRONMENT

MISSION AMRIT SAROVAR

- To develop and rejuvenate 75 water bodies in each district of the country as a part of the celebration of Azadi ka Amrit Mahotsav. In total, it would lead to the creation of 50,000 water bodies of a size of about an Acre or more.
- This Mission has been launched with a whole of Government Approach in which 6 Ministries/Department namely Department of Rural Development, Department of Land Resources, Department of Drinking Water and Sanitation, Department of Water Resources, Ministry of Panchayati Raj and Ministry of Forest, Environment and Climate change.
- Bhaskaracharya National Institute for Space Application and Geo-informatics(BISAG-N)would provide technical support.
- **Duration of the mission:** The Mission Amrit Sarovar is to be completed by 15th August 2023.

Implementing Strategy

- The Mission works through the States and Districts through refocusing of various schemes such as MGNREGA, 15th Finance Commission Grants, PMKSY sub-schemes such as Watershed Development Component, Har Khet Ko Pani besides States own schemes.
- The mission also encourages the mobilization of citizen and non-govt resources for supplementing these efforts.
- This Amrit Sarovar will be constructed on at least 1 acre of land with a water holding capacity of about 10,000 cubic meters.
- People's participation in the Mission is the focal point.
- Local freedom fighter, their family members, Martyr's family members, Padma Awardee and citizens of the local area wherein an Amrit Sarovar is to be constructed, will be engaged at all stages.

WILDLIFE PROTECTION (AMENDMENT) BILL,2021

- The Wild Life (Protection) Amendment Bill, 2021 was passed Lok Sabha. The Bill amends the Wild Life (Protection) Act, 1972. The Act regulates the protection of wild animals, birds and plants. The Bill seeks to increase the species protected under the law, and implement the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Key features of the Bill include

- **CITES:**
- CITES is an international agreement between governments to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.
- It also seeks to regulate the possession of live animal specimens.
- The Bill seeks to implement these provisions of CITES.
- **Rationalising Schedules**
- a new The Bill reduces the total number of schedules to four by:
- Reducing the number of schedules for specially protected animals to two (one for greater protection level),
- Removes the schedule for vermin species, and
- Inserts schedule for specimens listed in the Appendices under CITES (scheduled specimens).
- **Obligations under CITES:**
- The Bill provides for the central government to designate a:
- Management Authority, which grants export or import permits for trade of specimens.
- Scientific Authority, which gives advice on aspects related to impact on the survival of the specimens being traded.

- Every person engaging in trade of a scheduled specimen must report the details of the transaction to the Management Authority.
- As per CITES, the Management Authority may use an identification mark for a specimen.
- The Bill prohibits any person from modifying or removing the identification mark of the specimen.
- Additionally, every person possessing live specimens of scheduled animals must obtain a registration certificate from the Management Authority.
- **Invasive Alien Species**
- The Bills empowers the central government to regulate or prohibit the import, trade, possession or proliferation of invasive alien species.
- Invasive alien species refers to plant or animal species which are not native to India and whose introduction may adversely impact wild life or its habitat.
- The central government may authorise an officer to seize and dispose the invasive species.
- **Control of Sanctuaries**
- The Act entrusts the Chief Wild Life Warden to control, manage and maintain all sanctuaries in a state.
- The Chief Wild Life Warden is appointed by the state government.
- The Bill specifies that actions of the Chief Warden must be in accordance with the management plans for the sanctuary.
- These plans will be prepared as per guidelines of the central government, and as approved by the Chief Warden.
- For sanctuaries falling under special areas, the management plan must be prepared after due consultation with the concerned Gram Sabha.
- Special areas include a Scheduled Area or areas where the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 is applicable.
- Scheduled Areas are economically backward areas with a predominantly tribal population, notified under the Fifth Schedule to the Constitution.
- **Conservation Reserves:**
- Under the Act, state governments may declare areas adjacent to national parks and sanctuaries as a conservation reserve, for protecting flora and fauna, and their habitat.
- The Bill empowers the central government to also notify a conservation reserve.

Surrender of Captive Animals:

- The Bill provides for any person to voluntarily surrender any captive animals or animal products to the Chief Wild Life Warden. No compensation will be paid to the person for surrendering such items. The surrendered items become property of the state government.
- **Penalties:** The Act prescribes imprisonment terms and fines for violating the provisions of the Act. The Bill increases these fines.

CITES

- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement to which States organizations adhere voluntarily.
- CITES was drafted as a result of a resolution adopted in 1963 at a meeting of members of the International Union for Conservation of Nature (IUCN).
- CITES entered into force in July 1975.

Objective:

- Ensure that international trade in specimens of wild animals and plants does not threaten their survival.

Structure:

- The CITES Secretariat is administered by UNEP (The United Nations Environment Programme) and is located at Geneva, Switzerland.
- It plays a coordinating, advisory and servicing role in the working of the Convention.

- The Conference of the Parties to CITES is the supreme decision-making body of the Convention and comprises all its Parties.
- Although CITES is legally binding on the Parties, it does not take the place of national laws.

INDIA ADDS 10 MORE WETLANDS RAMSAR SITES

- India adds 10 more wetlands designated as Ramsar sites to make total 64 sites covering an area of 12,50,361 ha in the country.
- The 10 new sites include:
 - Six (6) sites in Tamil Nadu and
 - One (1) each in Goa, Karnataka, Madhya Pradesh and Odisha.
- Designation of these sites would help in conservation and management of wetlands and wise use of their resources.
- India is one of the Contracting Parties to Ramsar Convention, signed in Ramsar, Iran, in 1971.
- India signed it on 1st Feb 1982. So far 64 wetlands covering an area of 12,50,361 ha have been designated as Ramsar Sites of International Importance from India, till date.

10 Wetlands Designated as Ramsar sites

| S.No | Name of wetland | Area in Ha | State | Date of Designation |
|------|---|------------|----------------|---------------------|
| 1. | Koonthankulam Bird Sanctuary | 72.04 | Tamil Nadu | 08-11-2021 |
| 2 | Satkosia Gorge | 98196.72 | Odisha | 12-10-2021 |
| 3 | Nanda Lake | 42.01 | Goa | 08-06-2022 |
| 4 | Gulf of Mannar Marine Biosphere Reserve | 52671.88 | Tamil Nadu | 08-04-2022 |
| 5 | Ranganathituu BS | 517.70 | Karnataka | 15-02-2022 |
| 6 | Vembannur Wetland Complex | 19.75 | Tamil Nadu | 08-04-2022 |
| 7 | Vellode Bird Sanctuary | 77.19 | Tamil Nadu | 08-04-2022 |
| 8 | Sirpur wetland | 161 | Madhya Pradesh | 07-01-2022 |
| 9 | Vedanthangal Bird Sanctuary | 40.35 | Tamil Nadu | 08-04-2022 |
| 10 | Udhayamarthandapuram Bird Sanctuary | 43.77 | Tamil Nadu | 08-04-2022 |

INDIA'S UPDATED NATIONALLY DETERMINED CONTRIBUTION

- The Union Cabinet chaired by the Prime Minister has approved India's updated Nationally Determined Contribution (NDC) to be communicated to the United Nations Framework Convention on Climate Change (UNFCCC).
- NDC seeks to enhance India's contributions towards achievement of the strengthening of global response to the threat of climate change, as agreed under the Paris Agreement.
- India at the 26th session of the Conference of the Parties (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Glasgow, United Kingdom, expressed to intensify its climate action by presenting to the world five nectar elements (Panchamrit) of India's climate action.
- Earlier, India submitted its Intended Nationally Determined Contribution (NDC) to UNFCCC on October 2, 2015.

As per the updated NDC,

- India now stands committed to reduce Emissions Intensity of its GDP by 45 percent by 2030, from 2005 level.
- To achieve about 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.
- "To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation, including through a mass movement for 'LIFE'– 'Lifestyle for Environment' as a key to combating climate change".
- NDC also represents the framework for India's transition to cleaner energy for the period 2021-2030.
- The Net Zero target by 2030 by Indian Railways alone will lead to a reduction of emissions by 60 million tonnes annually.
- Similarly, India's massive LED bulb campaign is reducing emissions by 40 million tonnes annually.

HASDEO ARANYA

- The Hasdeo Aranya forests are called **the lungs of Chhattisgarh**.
- Over the past one year, protests against mining in this region have erupted several times and some still continue to sit-in demanding a complete stop to mining.
- The Chhattisgarh Legislative Assembly unanimously passed a private member resolution urging the Centre to cancel allocation of all coal mining blocks in the ecologically sensitive area.

Importance of the Hasdeo-Aranya Region

- The Hasdeo Aranya (Aranya means forest) lies in the catchment area of the Hasdeo river and is spread across 1,878 sq km in North-Central Chhattisgarh.
- The Hasdeo river is a tributary of the Mahanadi river which originates in Chhattisgarh and flows through Odisha into the Bay of Bengal.
- The Hasdeo forests are also the catchment area for the Hasdeo Bango Dam built across the Hasdeo river which irrigates six lakh acres of land, crucial to a State with paddy as its main crop.
- Besides, the forests are ecologically sensitive due to the rich biodiversity they offer and due to the presence of a large migratory corridor for elephants.

When did the controversy surrounding coal mining start?

- Underneath the Hasdeo Aranya is a coalfield that comprises of 22 coal blocks.
- In 2010, the Centre categorised Hasdeo Aranya to be a "no-go" zone for mining. It ruled out mining in any of these blocks.
- However, only a year later, the Ministry of Environment, Forest and Climate Change (MoEF) granted clearance for the mining for one coal block.
- At present, of the 22 blocks, seven blocks have been allotted to different companies, says the resolution.

Private Member Resolution

- An MLA who is not a Minister whether she happens to be from the ruling party or not is a private member.
- A private member resolution can be brought in by a private member and if passed, it becomes an expression of what the House thinks.
- This is different from a private member bill which would become law in case of approval.

ANTARCTIC ICE SHELF CRUMBLING FASTER

- The first-of-its-kind study raises new concerns about how fast climate change is weakening Antarctica's floating ice shelves and accelerating the rise of global sea levels.
- Antarctica's coastal glaciers are shedding icebergs more rapidly than nature can replenish the crumbling ice, doubling previous estimates of losses from the world's largest ice sheet over the past 25 years, a satellite analysis showed.

- The first-of-its-kind study, led by researchers at NASA's Jet Propulsion Laboratory (JPL) near Los Angeles and published in the journal Nature, raises new concern about how fast climate change is weakening Antarctica's floating ice shelves and accelerating the rise of global sea levels.
- The study's key finding was that the net loss of Antarctic ice from coastal glacier chunks "calving" off into the ocean is nearly as great as the net amount of ice that scientists already knew was being lost due to thinning caused by the melting of ice shelves from below by warming seas.
- Taken together, thinning and calving have reduced the mass of Antarctica's ice shelves by 12 trillion tons since 1997, double the previous estimate, the analysis concluded.
- The net loss of the continent's ice sheet from calving alone in the past quarter-century spans nearly 37,000 sq km (14,300 sq miles), an area almost the size of Switzerland, according to JPL scientist Chad Greene, the study's lead author.
- "Antarctica is crumbling at its edges," a NASA announcement of the findings.
- When ice shelves dwindle and weaken, the continent's massive glaciers tend to speed up and increase the rate of global sea level rise."
- The consequences could be enormous. Antarctica holds 88% of the sea level potential of all the world's ice.
- Ice shelves, permanent floating sheets of frozen freshwater attached to land, take thousands of years to form and act like buttresses holding back glaciers that would otherwise easily slide off into the ocean, causing seas to rise.
- In recent decades, though, warming oceans have weakened the shelves from underneath, a phenomenon previously documented by satellite altimeters measuring the changing height of the ice and showing losses averaging 149 million tons a year from 2002 to 2020, according to NASA.
- The accelerated glacial calving, like ice thinning, was most pronounced in West Antarctica, an area hit harder by warming ocean currents.
- But even in East Antarctica, a region whose ice shelves were long considered less vulnerable, are witnessing more losses than gains.
- The losses measured from calving outpaced natural ice shelf replenishment so greatly that researchers found it unlikely Antarctica can return to pre-2000 glacier levels by the end of this century.

INDIA ADDS 11 MORE WETLANDS TO THE LIST OF RAMSAR SITES

- India adds 11 more wetlands to the list of Ramsar sites to make total 75 Ramsar sites covering an area of 13,26,677 ha in the country in the 75th year of Independence.

The 11 new sites include:

- Four (4) sites in Tamil Nadu
- Three (3) in Odisha
- Two (2) in Jammu & Kashmir
- One (1) each in Madhya Pradesh and Maharashtra.
- Designation of these sites would help in conservation and management of wetlands and wise use of their resources.
- India is one of the Contracting Parties to Ramsar Convention, signed in Ramsar, Iran, in 1971. India signed it on 1st Feb 1982. During 1982 to 2013, a total of 26 sites were added to the list of Ramsar sites, however, during 2014 to 2022, the country has added 49 new wetlands to the list of Ramsar sites.
- During this year itself (2022) a total of 28 sites have been declared as Ramsar sites. Based on the date of designation mentioned on Ramsar Certificate, the number is 19 for this year (2022) and 14 for previous year (2021).
- Tamil Nadu has maximum no. of Ramsar sites (14 nos), followed by UP which has 10 nos. of Ramsar sites.

Brief of 11 wetlands designated as Ramsar Sites

| S.No | Name of wetland | Area in Ha | State |
|------|-----------------|------------|-------|
|------|-----------------|------------|-------|

| | | | |
|-------------------------------|--|--------------|-------------------|
| 1. | Tampara Lake | 300 | Odisha |
| 2. | Hirakud Reservoir | 65400 | |
| 3. | Ansupa Lake | 231 | |
| 4. | Yashwant Sagar | 822.90 | Madhya Pradesh |
| 5. | Chitrangudi Bird Sanctuary | 260.47 | Tamil Nadu |
| 6. | Suchindram Theroor Wetland Complex | 94.23 | |
| 7. | Vaduvur Bird Sanctuary | 112.64 | |
| 8. | Kanjirankulam Bird Sanctuary | 96.89 | |
| 9. | Thane Creek | 6521.08 | Maharashtra |
| 10. | Hygam Wetland Conservation Reserve | 801.82 | Jammu and Kashmir |
| 11. | Shallbugh Wetland Conservation Reserve | 1675 | |
| Total area of 11 sites | | 76316 | |

THE COASTAL REGULATION ZONE NOTIFICATION (CRZ)

- The 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. The CAG frequently undertakes 'performance audits' of government programmes and ministries. This latest report contains the observations from an audit of 'Conservation of Coastal Ecosystems from 2015-20.

What are the Centre's obligations on 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 three institutions responsible for the implementation of the CRZ are the National Coastal Zone Management Authority (NCZMA) at the Centre, the State/Union Territory Coastal Zone Management Authorities (SCZMAs/UTCZMAs) in every coastal State and Union Territory and the District Level Committees (DLCs) in every district that has a coastal stretch and where the CRZ notification is applicable.
- These bodies examine if CRZ clearances granted by the government are as per procedure, if project developers once given the go-ahead are complying with conditions and if the project development objectives under the Integrated Coastal Zone Management Programme (ICZMP) are successful.
- They also evaluate the measures taken up by the government towards achieving the targets under Sustainable Development Goals, a set of United Nations-prescribed targets for countries towards eradicating poverty and becoming sustainable societies.

Why did the CAG undertake this audit?

- 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 CRZ violations in the coastal stretches. Incidences of illegal construction activities (reducing coastal space) and effluent discharges from

local bodies, industries and aquaculture farms had been reported by the media and this prompted it to undertake a detailed investigation.

What did the audit find?

- The audit pointed out various categories of violations.
- For one, the Environment Ministry hadn't notified NCZMA as a permanent body and it was being reconstituted every few years.
- In the absence of defined membership, it was functioning as an ad-hoc body.
- There were instances of the Expert Appraisal Committees a committee of scientific experts and senior bureaucrats who evaluate the feasibility of an infrastructure project and its environmental consequences not being present during project deliberations.
- There were also instances of the members of the EAC being fewer than half of the total strength during the deliberations.
- 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 problems did the CAG find in the States?

- 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.
- Sea patrolling in Gahirmatha Sanctuary, in Kendrapara, Odisha did not happen.
- A research laboratory at Dangmal, Kendrapara District, Odisha constructed in 2016 has not yet been made functional.
- There was no website to disseminate the information related to the NCZMA , the CAG found, which is a clear violation of the mandated requirements of the Authority.

What are CRZ norms?

- In India, the CRZ Rules govern human and industrial activity close to the coastline, in order to protect the fragile ecosystems near the sea.
- They restrict certain kinds of activities — like large constructions, setting up of new industries, storage or disposal of hazardous material, mining, reclamation and bunding — within a certain distance from the coastline.
- Under the section 3 of Environment Protection Act, 1986 of India, Coastal Regulation Zone notification was issued in February 1991 for the first time.
- In 2018-19, fresh Rules were issued, which aimed to remove certain restrictions on building, streamlined the clearance process, and aimed to encourage tourism in coastal areas.
- While the CRZ Rules are made by the Union environment ministry, implementation is to be ensured by state governments through their Coastal Zone Management Authorities.

Categories of Coastal Regulation Zone:

- **Category I:** Areas that are ecologically sensitive and important, such as national parks marine parks, sanctuaries, reserve forests, wildlife habitats, mangroves, corals/coral reefs, etc.
- **Category II:** Areas that have already been developed up to or close to the shore-line.
- **Category III:** Areas that are relatively undisturbed and those that do not belong to either Category-I or II
- **Category IV:** Coastlines of Indian islands that do not fall into categories I, II or III

New Rules under CRZ regulations

- The government notified new CRZ Rules with the stated objectives of promoting sustainable development and conserving coastal environments.
- For the so-called CRZ-III (Rural) areas, two separate categories have been stipulated.
- In the densely populated rural areas (CRZ-IIIA) with a population density of 2,161 per sq km as per the 2011 Census, the no-development zone is now 50 m from the high-tide level, as against the 200 m stipulated earlier.
- In the CRZ-IIIB category (rural areas with population density below 2,161 per sq km) continue to have a no-development zone extending up to 200 m from the high-tide line.
- The new Rules have a no-development zone of 20 m for all islands close to the mainland coast, and for all backwater islands in the mainland.

ETHANOL BLENDING

- Prime Minister announced that India has achieved its target of blending 10% sugarcane-extracted ethanol in petrol, ahead of schedule. He rooted for energy independence stating that, “we need to be Aatmanirbhar (self-sufficient) in our energy sector”. India is one of the world’s biggest oil importing nations.

What is Ethanol Blending?

- Blending ethanol with petrol to burn less fossil fuel while running vehicles is called 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.
- Currently, 10% of the petrol that powers your vehicle is ethanol. Though we have had an E10 or 10% ethanol as policy for a while, it is only this year that we have achieved that proportion.
- India’s aim is to increase this ratio to 20% originally by 2030 but in 2021, when NITI Aayog put out the ethanol roadmap, that deadline was advanced to 2025.
- Ethanol blending will help bring down our share of oil imports (almost 85%) on which we spend a considerable amount of our precious foreign exchange.
- Secondly, more ethanol output would help increase farmers’ incomes.
- The NITI Aayog report of June 2021 says, “India’s net import of petroleum was 185 million tonnes at a cost of \$55 billion in 2020-21,” and that a successful ethanol blending programme can save the country \$4 billion per annum.

What are first generation and second generation ethanols?

- With an aim to augment ethanol supplies, the government has allowed procurement of ethanol produced from other sources besides molasses which is first generation ethanol or 1G.
- Other than molasses, ethanol can be extracted from materials such as rice straw, wheat straw, corn cobs, corn stover, bagasse, bamboo and woody biomass, which are second generation ethanol sources or 2G.

How have other countries fared?

- Though the U.S., China, Canada and Brazil all have ethanol blending programmes, as a developing country, Brazil stands out.
- It had legislated that the ethanol content in petrol should be in the 18-27.5% range, and it finally touched the 27% target in 2021.

How does it impact the auto industry?

- At the time of the NITI Aayog report in June last year, the industry had committed to the government to make all vehicles E20 material compliant by 2023.

- This meant that the petrol points, plastics, rubber, steel and other components in vehicles would need to be compliant to hold/store fuel that is 20% ethanol. Without such a change, rusting is an obvious impediment.

Are there other alternatives?

- Sources in the auto industry state that they prefer the use of biofuels as the next step, compared to other options such as electric vehicles (EV), hydrogen power and compressed natural gas.
- This is mainly because biofuels demand the least incremental investment for manufacturers.
- Even though the industry is recovering from the economic losses bought on by the pandemic, it is bound to make some change to comply with India's promise for net-zero emissions by 2070.

Concerns

Efficient Utilization of Land

- The Institute for Energy Economics and Financial Analysis (IEEFA) in a report in talks about the inefficient land use in ethanol production.
- The report's states that we can use land far more efficiently by generating renewable power for EV batteries.
- For example, to match the annual travel distance of EVs recharged from one hectare generating solar energy, 187 hectares of maize-derived ethanol are required, even when one accounts for the losses from electricity transmission, battery charging and grid storage.

Water intensive crop

- The water needed to grow crops for ethanol is another debating point.
- For India, sugarcane is the cheapest source of ethanol.
- On average, a tonne of sugarcane can produce 100 kg of sugar and 70 litres of ethanol — meaning, a litre of ethanol from sugar requires 2,860 litres of water.
- There has been, therefore, a move toward waste-based extraction, such as through coarse grains.

Supply of Raw Materials

- The supply of coarse grains may still be a problem.
- The abnormally wet monsoon seasons may have helped in recent years to raise grain output, but in its August 2021 analysis.
- The International Council on Clean Transportation (ICCT) is sceptical that those production increases can be sustained.
- Thus sugar cane would likely continue to be the primary source for ethanol even with the 12 planned farm waste — or 2G ethanol — distilleries.

Food security

- There are already indications that more sugarcane is being grown and that the Government of India encouraged more corn production, with its use for ethanol production cited as a reason for this push.
- As was evident in India's wheat harvest earlier this year, climate change-induced heatwaves are a worrying factor and can lead to lower-than-expected harvests with little notice.
- Given the uncertainty about future production, India may not find it easy to simultaneously strengthen domestic food supply systems, set aside adequate stocks for lean years, maintain an export market for grains, and divert grain to ethanol at the expected rate in coming years, and this is an issue that warrants continued monitoring.

Conclusion

Ethanol From Wastes:

- This would bring both strong climate and air quality benefits, since these wastes are currently often burned, contributing to smog.

Water Crisis:

- The ethanol policy should ensure that it doesn't drive farmers toward water-intensive crops and create a water crisis in a country where its shortage is already acute.

Prioritize Crop Production:

- With our depleting groundwater resources, arable land constraints, erratic monsoons, and dropping crop yields due to climate change, food production must be prioritized over crops for fuel.
- Alternative Mechanism:

To achieve the key goal,

That is emissions reduction, alternative mechanisms-enhanced Electric Vehicles uptake, installation of additional renewable generation capacity to allow zero-emissions recharging, etc.-need to be evaluated.

ARCTIC WARMING

- Due to global warming, any change in the surface air temperature and the net radiation balance tends to produce larger changes at the north and south poles. These changes are more pronounced at the northern latitudes and are known as the **Arctic amplification**.
- On August 11, Finnish Meteorological Institute researchers published their study in the Communications Earth & Environment journal, concluding that the Arctic is heating four times faster than the rest of the planet.
- The warming is more concentrated in the Eurasian part of the Arctic, where the Barents Sea north of Russia and Norway is warming at an alarming rate seven times faster than the global average.

What is Arctic Amplification? What causes it?

- Global warming, the long-term heating of the earth's surface, hastened due to anthropogenic forces or human activities since pre-industrial times and has increased the planet's average temperature by 1.1 degrees Celsius.
- While changes are witnessed across the planet, any change in the surface air temperature and the net radiation balance tend to produce larger changes at the north and south poles.
- This phenomenon is known as polar amplification; these changes are more pronounced at the northern latitudes and are known as the **Arctic amplification**.
- Among the many global warming-driven causes for this amplification, the ice-albedo feedback, lapse rate feedback, water vapour feedback and ocean heat transport are the primary causes.
- Sea ice and snow have high albedo (measure of reflectivity of the surface), implying that they are capable of reflecting most of the solar radiation as opposed to water and land.
- In the Arctic's case, global warming is resulting in diminishing sea ice. As the sea ice melts, the Arctic Ocean will be more capable of absorbing solar radiation, thereby driving the amplification.
- The lapse rate or the rate at which the temperature drops with elevation decreases with warming.
- Studies show that the ice-albedo feedback and the lapse rate feedback are responsible for 40% and 15% of polar amplification respectively.

What are the consequences of Arctic Warming?

- The causes and consequences of Arctic amplification are cyclical what might be a cause can be a consequence too.
- The Greenland ice sheet is melting at an alarming rate, and the rate of accumulation of sea ice has been remarkably low since 2000, marked by young and thinner ice replacing the old and thicker ice sheets.
- The Greenland ice sheet saw a sharp spike in the rate and extent of melting between July 15-17 this year.
- The unusual summer temperatures resulted in a melt of 6 billion tonnes of ice sheet per day, amounting to a total of 18 billion tonnes in a span of three days, enough to cover West Virginia in a foot of water.
- Greenlandic ice sheet holds the second largest amount of ice, after Antarctica, and therefore it is crucial for maintaining the sea level.

- In 2019, this was the single biggest cause for the rise in the sea level, about 1.5 metres.
- If the sheet melts completely, the sea level would rise by seven metres, capable of subsuming island countries and major coastal cities.
- The warming of the Arctic Ocean and the seas in the region, the acidification of water, changes in the salinity levels, are impacting the biodiversity, including the marine species and the dependent species.
- The warming is also increasing the incidence of rainfall which is affecting the availability and accessibility of lichens to the reindeer.
- The Arctic amplification is causing widespread starvation and death among the Arctic fauna.
- The permafrost in the Arctic is thawing and in turn releasing carbon and methane which are among the major greenhouse gases responsible for global warming.
- Experts fear that the thaw and the melt will also release the long-dormant bacteria and viruses that were trapped in the permafrost and can potentially give rise to diseases.

What is the impact on India?

- In recent years, scientists have pondered over the impact the changing Arctic can have on the monsoons in the subcontinent. The link between the two is growing in importance due to the extreme weather events the country faces, and the heavy reliance on rainfall for water and food security.
- A study titled 'A possible relation between Arctic sea ice and late season Indian Summer Monsoon Rainfall extremes' published in 2021 by a group of Indian and Norwegian scientists 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.
- In 2014, India deployed IndARC, India's first moored-underwater observatory in the Kongsfjorden fjord, Svalbard, to monitor the impact of the changes in the Arctic Ocean on the tropical processes such as the monsoons.
- According to the World Meteorological Organization's report, '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.
- The Arctic amplification furthers the idea that "what happens in the Arctic does not remain in the Arctic" and can substantially affect tropical processes far south.

BATTERY WASTE MANAGEMENT RULES, 2022

- Ministry of Environment, Forest and Climate Change, Government of India published the Battery Waste Management Rules, 2022 to ensure environmentally sound management of waste batteries. These rules are a transformative step to promote Circular Economy in full earnest. New rules will replace Batteries (Management and Handling) Rules, 2001.
- The rules cover all types of batteries, viz. Electric Vehicle batteries, portable batteries, automotive batteries and industrial batteries.
- The rules function based on the concept of Extended Producer Responsibility (EPR) where the producers (including importers) of batteries are responsible for collection and recycling/refurbishment of waste batteries and use of recovered materials from wastes into new batteries.
- EPR mandates that all waste batteries to be collected and sent for recycling/refurbishment, and it prohibits disposal in landfills and incineration.
- To meet the EPR obligations, producers may engage themselves or authorise any other entity for collection, recycling or refurbishment of waste batteries.
- The rules will enable setting up a mechanism and centralized online portal for exchange of EPR certificates between producers and recyclers/refurbishers to fulfil the obligations of producers.
- The rules promote setting up of new industries and entrepreneurship in collection and recycling/refurbishment of waste batteries.

- Mandating the minimum percentage of recovery of materials from waste batteries under the rules will bring new technologies and investment in recycling and refurbishment industry and create new business opportunities.
- Prescribing the use of certain amount of recycled materials in making of new batteries will reduce the dependency on new raw materials and save natural resources.
- Online registration & reporting, auditing, and committee for monitoring the implementation of rules and to take measures required for removal of difficulties are salient features of rules for ensuring effective implementation and compliance.
- On the principle of Polluter Pays Principle, 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 utilised in collection and refurbishing or recycling of uncollected and non-recycled waste batteries.

UN HIGH SEAS TREATY

- Negotiations involving 168 countries, including the European Union, to agree on a UN treaty for protecting oceans failed. When the latest round of talks began two weeks ago in New York, it was hoped that an agreement would be arrived at for the conserving marine life at the 'high seas' which lie outside the exclusive jurisdiction of different countries.
- In June, UN Secretary-General Antonio Guterres had declared an **"ocean emergency"** at the UN Ocean Conference in Lisbon, Portugal, citing threats to the world's ocean.

What is the proposed UN High Seas treaty?

- Also referred to as the 'Paris Agreement for the Ocean', the treaty to deal with Biodiversity Beyond National Jurisdiction has been under discussion for several years.
- The proposed treaty concerns the ocean existing beyond the Exclusive Economic Zones that lie from the coast of a country to about 200 nautical miles or 370 km into the sea, till where it has special rights for exploration. Waters beyond that are known as open seas or high seas.
- The treaty was to be negotiated under the United Nations Convention on Laws of the Sea (UNCLOS) of 1982 which governs the rights of countries regarding marine resources.
- Some aspects of negotiations included establishing marine protected areas to put limits on certain activities, environmental impact assessments or clearances for sustainability of works, financial support to countries and sharing other scientific knowledge.
- The International Union for Conservation of Nature has said binding agreements are needed for this treaty to be effective.

How are the world's oceans regulated as of now?

- Some treaties, along with the UNCLOS, regulate the conduct of actors on the high seas.
- The UNCLOS led to the establishment of territorial sea boundaries 22 km offshore, deciding the region up to which countries could claim full sovereign territorial rights, as well as the 200 nautical miles EEZ limit.
- It also created the International Seabed Authority and other conflict-resolution mechanisms.
- But a treaty dedicated to protecting ocean health does not exist as of now.
- Conversely, every country has the right to access open seas, resulting in large-scale drilling and trawling operations for catching fish and other animals for commercial purposes.

What are the risks of countries failing to reach an agreement?

- Ninety per cent of global warming is occurring in the ocean.
- The effects of ocean warming include sea level rise due to thermal expansion, coral bleaching, accelerated melting of Earth's major ice sheets, intensified hurricanes, and changes in ocean health and biochemistry.
- Excessive fishing has increased manifold over the years, and a third of species such as sharks and rays are at the risk of extinction, according to the World Wildlife Fund.
- Despite acknowledging these threats, members failed to agree on how to deal with these threats.



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